Chapter-III

METHODOLOGY

3.1 INTRODUCTION

Methodology is the core of any research which guides the researcher to take the right path in completing the decided research endeavour. This chapter clearly defines the research method used to conduct the study. The researcher explains in this chapter, how the necessary data and information to address the research objectives and questions were collected, presented, analyzed and justification for the research design is given, research instruments, data sources, data collection techniques, data presentation techniques and analytical techniques used.

3.2 OPERATIONAL DEFINITIONS

The methodologies can never complete without determining the definitions of the concepts involved in the study as they operate in the total research framework. In the present study the researcher has made use a number of terms and concepts. The methodology is incomplete without explicating the definitions of the terms and concepts as they operate in the total research design. Therefore, an effort has been made to explain in what view point, these terms and concepts have been used in the present study.

3.2.1 Academic Achievement

According to Cosmo Dictionary of Education, “Achievement is a performance in school or college on standardized series of education tests. The term is used more generally to describe performance in the subjects of the curriculum.”

Academic achievement can be defined as excellence in all academic disciplines, in class as well as extracurricular activities. It includes excellence in sporting,
behaviour, confidence, communication skills, punctuality, assertiveness, arts, culture, and the like. Based on past literature, there were numerous definitions of academic achievement. Generally speaking academic achievement was defined as “a student’s academic performance in school” (Chen 2007).

In this study the term academic achievement has been taken as the achievement of students after a course and is measured in terms of marks obtained by the students.

3.2.2 Family Environment

Family Environment is a socio, biological that exerts the greatest influence on the development and perpetuation of the individuals behaviour. According to Grebow (1973), reported that nurturance affection and achievement expectation, demands and standards constitute the two dimensions of parental behaviour.

This family environment is influenced by a number of factors like nature of family constellation, number of children in the family, martial relations between husband and wide, maternal (parental) employment, socio-economic and religious background of the family. The family environment refers to sum total of within and external conditions and factors of home, potentially capable of influencing an organism. Family environment usually refers to the environment, both physical and emotional, and the state of the family whether it is good, bad, dysfunctional etc. (Knapp, 1993). Family Environment refers to the environment prevailing in the home.

In the present study family environment includes relationships (cohesion, expressiveness, conflict, acceptance and caring) personal growth (independence and active-recreational orientation) and system maintenance (organization and control). The low, moderate and high levels of family environment were considered based on quartile deviation on overall family environment scores.
3.2.3 Mass Media

The term mass-media signifies nothing but the media which is providing us information in mass or lot like television, radio, newspapers, journals, tape-records, computer-internet, satellites, simpers to be used to educate the people to understand the force of nature as a whole and their participation in the process to understand and utilize rather than to destroy due to lack of understanding of environment. The network of media and information technology is vital to disseminate all sorts of education including environmental in motivating people. There is a greater impact of these mass-media’s on the present world. Technology acts as practical tool and media acts as communication tool.

In the present, study Mass-media refers to Radio, Newspaper, Television, motion picture, computer & internet and mobile device. The low, moderate and high levels of mass media were considered based on quartile deviation on overall family environment scores.

3.2.4 Socio-Economic Status

Status is a term used to designate the comparative amount of prestige difference or respect accorded to persons who have been assigned different roles in a group or community. In order to indicate the influence of present education, occupation and income on the immediate welfare of creative people, an analysis of the parental sources of livelihood is made in terms of;

a. Educational background of the parent/guardian.

b. Occupational status and

c. Income of the parent/guardian.

It is determined by an individual’s achievements in education, occupation and income.
In the present study, Socio-Economic Status (SES) refers to the actual status of a person in society and it is measured in terms of income, education and occupation subjects obtain scores on the above three scores are taken to be an index of the subjects socio-economic status.

3.3 VARIABLES OF THE STUDY

A variable is that factor which is measured, manipulated and observed by the investigator, the variables involved in the present study are dependent variable and independent variables. An independent variable is a factor, which is manipulated, observed and selected by the investigator for the purpose of determining its relationship to an observed phenomenon. It is also called as the “stimulus variable” or the “Input variable”. A dependent variable is one, which is measured and observed by the investigator to determine the effect of independent variables on it. The present study has been undertaken with reference to the following variables.

I. **Dependent variable**

   Academic Achievement

II. **Independent variables**

   1. Family Environment
   2. Mass Media
   3. Socio-Economic Status

III. **Background variables**

   1. Sex
   2. Type of School Management
   3. Locality
   4. Type of Family
   5. Religion
3.4 DISCUSSION OF VARIABLES

3.4.1 Academic Achievement

In this era of globalization and technological revolution, education is considered as a first step for every human activity. It plays a vital role in the development of human capital and is linked with an individual’s well-being and opportunities for better living (Battle & Lewis, 2002).

Academic Achievement is essential for every student who is under the process of acquiring education because it helps in the successful development of young people in contemporary Indian society. Those students who develop higher-order cognitive capacities will be most equipped to pursue more education to meet novel challenges. Unlike the past, most jobs in the world wide economy of the future will require high-level cognitive capacities to function effectively in a globalized nation. It is therefore necessary for the acquisition, organization and application, of information to cope with challenges in a complex society.

These variables are inside and outside school that affect students’ quality of academic achievement. In the present study the researcher intended to study the influence of family environment, mass media and socio-economic status on academic achievement of secondary school students. The academic achievement was considered as dependent variable in the present study.

3.4.2 Family Environment

Many psychologists, sociologists and educators agree that the family happen to be the most significant environment and its key position rests on its multiple functions in relation to overall development of its members, their protection and over all well being, it outweighs the effects of all other environmental impacts combined in determining the physical and psychological well being of an individual.
In family the most important duty of the parents is to co-ordinate their work for the harmonious development of their children. Parents need to know the various experiences of the child outside the home a guide them properly, it is said that the type of the family environment i.e., parental attitude towards their children, their concern, care taken by them, style of bringing up their children marital relation between husband and wife, socio-economic and religious background, values etc., play a vital role in shaping the personality of the children. It is a major source of education and behaviour determination. It is argued that academic achievement has been found to be dependent on how child has been brought up in his family environment. Family environment affects adolescents behaviour in numerous ways families differ greatly in the extent to which they value and encourage intellectual activities, and in the degree to which pursuits that have a broadly educational function are given priority, family also vary in kinds of sole models they provide also they differ in the degree to which they give a child opportunities to identify with successful individuals specially the individuals of both the sex and of different cultures. Therefore the sole aim of this study was to find out the effect of family environment on Academic Achievement. Hence this variable is considered as an independent variable.

3.4.3 Mass Media

Mass Media is an effective device in improving the academic achievement of students. The students who are exposed to more and more mass media means which will enhance the conceptual knowledge on achievement. Mass media reaches huge group very quickly.

Krishnan (1983) investigated to develop a multimedia package for teaching a course on audio-visual education for the instructor training programme and found ninety-eight percent of the trainees obtained more than 80 percent of the marks on the final post test. Bodhankar (1991) has done a study on role of mass media in environmental awareness and found that the media has tremendous response in the
matter of making people aware of the need to protect the Environment. As the name suggests the media used for the communication of masses has its impact on the development of the child’s intellectual abilities, with respect to the type of media used. Nelson Henry has very rightly observed in media and symbols that social institutions left to themselves may not be successful in achieving the modern objectives of the developing societies without the support of the mass media. Studies such as Kanade (1987), Krishnan (1983), Mohanty and Giri (1976), Mohanty, Giri, and Mohanty (1976), Nagaraju and Usha Ramkumar (1983) etc. have studied the effect of mass media on the achievement of students. The studies reveal that there is significant influence of mass media on the achievement of students. Hence the researcher has selected the mass media as one of the independent variable to know the influence of mass-media on academic achievement of students.

3.4.4 Socio Economic Status

In this study the Socio-Economic Status (SES) refers to Qualification, Occupation and Family Income. Socio-Economic Status concludes status of family environment and also determines the availability of mass media exposure in turn which will enhance the achievement of students. Hence, Socio-Economic Status enhances the academic achievement of the students.

Socio-Economic Status (SES) refers to social and economic circumstances which are used to denote a ranking of individuals or groups in society. Maggi, (2004) have conducted a longitudinal study on Literacy, instruction, SES and word reading, achievement in English. They found Socio Economic Status to have a significant effect on achievement. Hence this variable of Socio Economic Status is included. Therefore this variable of Socio Economic Status is included as independent variable to know the influence of Socio-Economic Status on Academic Achievement of the students.
3.4.5 Sex

Sex is a quality of being boys or girls. In order to examine the sex differences in the academic achievement of students of both boys and girls were included in this study. In the present study sex is considered as one of the background variable.

3.4.6 Types of school Management

Type of school is also a very important for learning and it is also influence the achievement of the students. There are research evidences that students perform better in private schools as compared to government school and are also true with regard to teaching effectively/success. In this study, three types of school managements were included they were government, private aided and private unaided.

3.4.7 Locality

The locality from which the youth is hail and educational adjustment are of interdependent character. In the present study locality is considered as one of the background variable to know the influence on academic achievement of the students.

3.4.8 Type of Family

Type of family in this study refers to two types-Nuclear family and Joint Family. Nuclear family means the family, which consists of a father, mother and their off springs, joint family means the family, which consists of grand parents, parents, uncles, aunts, siblings and cousins of an individual.

3.4.9 Religion

Religion is an organized collection of beliefs, cultural systems and world views that relate humanity to an order of existence. In the present study religion is considered as background variable to know the influence of religion on academic achievement of the students of which they belong to Hindu, Muslim and Christian religions.
3.5 STATEMENT OF HYPOTHESES

Based on the objectives, research hypotheses (declarative) were formulated, but for the purpose of testing, they were converted to null form. These null hypotheses were classified under 5 (five) major sets, for structural convenience and easy handling for testing the same.

Set-1: Hypotheses based on ‘t’ test

1. There is no significant difference in the Academic Achievement of secondary school boys and girls.

2. There is no significant difference in the Academic Achievement of secondary school students studying in urban and rural schools.

3. There is no significant difference in the Academic Achievement of secondary school students belonging to nuclear and joint family.

Set-2: Hypotheses based on One-way ANOVA

4. There is no significant difference in the Academic Achievement of secondary school students studying in different types of school management.

5. There is no significant difference in the Academic Achievement of secondary school students belonging to different types of religion.

6. There is no significant difference in the Academic Achievement of secondary school students having different levels of family environment.

7. There is no significant difference in the Academic Achievement of secondary school students having different knowledge levels of mass media.

8. There is no significant difference in the Academic Achievement of secondary school students having different levels of socio-economic status.
Set-3: Hypotheses based on Two-way ANOVA

9. There is no significant main and interaction effect of sex and type of management on Academic Achievement of secondary school students.

10. There is no significant main and interaction effect of sex and locality on Academic Achievement of secondary school students.

11. There is no significant main and interaction effect of sex and type of family on Academic Achievement of secondary school students.

12. There is no significant main and interaction effect of sex and religion on Academic Achievement of secondary school students.

13. There is no significant main and interaction effect of sex and family environment on Academic Achievement of secondary school students.

14. There is no significant main and interaction effect of sex and mass media on Academic Achievement of secondary school students.

15. There is no significant main and interaction effect of sex and socio-economic status on Academic Achievement of secondary school students.

16. There is no significant main and interaction effect of type of management and locality on Academic Achievement of secondary school students.

17. There is no significant main and interaction effect of type of management and type of family on Academic Achievement of secondary school students.

18. There is no significant main and interaction effect of type of management and religion on Academic Achievement of secondary school students.

19. There is no significant main and interaction effect of type of management and family environment on Academic Achievement of secondary school students.

20. There is no significant main and interaction effect of type of management and mass media on Academic Achievement of secondary school students.
21. There is no significant main and interaction effect of type of management and socio-economic status on Academic Achievement of secondary school students.

22. There is no significant main and interaction effect of locality and type of family on Academic Achievement of secondary school students.

23. There is no significant main and interaction effect of locality and religion on Academic Achievement of secondary school students.

24. There is no significant main and interaction effect of locality and family environment on Academic Achievement of secondary school students.

25. There is no significant main and interaction effect of locality and mass media on Academic Achievement of secondary school students.

26. There is no significant main and interaction effect of locality and socio-economic status on Academic Achievement of secondary school students.

27. There is no significant main and interaction effect of type of family and religion on Academic Achievement of secondary school students.

28. There is no significant main and interaction effect of type of family and family environment on Academic Achievement of secondary school students.

29. There is no significant main and interaction effect of type of family and mass media on Academic Achievement of secondary school students.

30. There is no significant main and interaction effect of type of family and socio-economic status on Academic Achievement of secondary school students.

31. There is no significant main and interaction effect of religion and family environment on Academic Achievement of secondary school students.

32. There is no significant main and interaction effect of religion and mass media on Academic Achievement of secondary school students.
33. There is no significant main and interaction effect of religion and socio-economic status on Academic Achievement of secondary school students.

34. There is no significant main and interaction effect of family environment and mass media on Academic Achievement of secondary school students.

35. There is no significant main and interaction effect of family environment and socio-economic status on Academic Achievement of secondary school students.

36. There is no significant main and interaction effect of mass media and socio-economic status on Academic Achievement of secondary school students.

**Set-4: Hypotheses based on Pearson’s Product Moment Coefficient of Correlation**

37. There is no significant relationship between Academic Achievement of secondary school students and their family environment.

38. There is no significant relationship between Academic Achievement of secondary school students and their knowledge of mass-media.

39. There is no significant relationship between Academic Achievement of secondary school students and their parental socio-economic status.

**Set-5: Regression Analysis**

40. Family Environment is not found to be the significant predictor in predicting the Academic Achievement of secondary school students.

41. Mass Media is not found to be the significant predictor in predicting the Academic Achievement of secondary school students.

42. Socio-Economic Status is not found to be the significant predictor in predicting the Academic Achievement of secondary school students.
3.6 SAMPLING DESIGN

3.6.1 Population of the Study

The population of the study includes all the students of IX class, studying in secondary schools in Bangalore Urban (North and South) and Rural District which follow State syllabus.

The population of the Bangalore North, South and Rural districts are 55,232, 74,198 and 13,977 respectively during the year 2012-13 from private aided, unaided and government schools and selected 5% of the total population.

3.6.2 Sample of the Study

The sample for the present study consisted of 900 students studying in Ninth class. The stratified random sampling technique was adopted in two stages. In the first stage the stratification was made on the basis of type of management of school (Government, Private Aided and Private Unaided) and locality (Urban and Rural).

The sample unit is school. 45 secondary schools located in Bangalore Urban and Rural Districts were randomly selected for the investigation. Among them 15 government, 15 private aided and 15 private unaided schools were selected, out of which 23 were urban and 22 were rural schools.

In the second stage of stratification students studying in these schools both boys and girls were selected. From each division of 15 schools, 300 students studying in IX class were selected (75 Boys and 75 Girls). From each school 10 boys and 10 girls were selected at random.

The data for the present study was obtained from 900 secondary school students from Bangalore Urban and Rural districts is presented in Table-3.1.
**Table-3.1**

Number of students selected as a sample from Government, Private Aided and Unaided schools of Bangalore Urban and Rural Districts.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Sex</th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
<th></th>
<th>Total Students</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Urban</td>
<td>Rural</td>
<td>Total</td>
<td>Urban</td>
<td>Rural</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Government</td>
<td>75</td>
<td>75</td>
<td>150</td>
<td>75</td>
<td>75</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>Private Aided</td>
<td>75</td>
<td>75</td>
<td>150</td>
<td>75</td>
<td>75</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>Private Unaided</td>
<td>75</td>
<td>75</td>
<td>150</td>
<td>75</td>
<td>75</td>
<td>150</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>225</td>
<td>225</td>
<td>450</td>
<td>225</td>
<td>225</td>
<td>450</td>
<td>900</td>
</tr>
</tbody>
</table>

The same is graphically presented in Chart-3.1 and Fig.3.1

**Chart-3.1**

Sample Design (Stratified Random Sampling Procedure)
Fig. 3.1

Number of boys and girls selected as samples from government, private aided and private unaided schools of Bangalore District.
3.7 RESEARCH METHOD

The present study is a descriptive research, where in normative survey method was used to obtain data from 900 students of different secondary schools of Bangalore Urban and Rural districts, representing private aided, private unaided and government schools. These were drawn randomly from the population of secondary schools covering Bangalore Urban and Rural districts. The students closely revealing the population on strata of sex, type of school management and locality were drawn.

The researcher obtained the information (data collection) after a brief talk on the subject. They were immensely cooperative and were able to respond to the tools in the given stipulated time.
3.8 TOOLS OF RESEARCH

The selection of suitable tools is of vital importance for any successful research. Tools of research employed in the Study are presented in Table-3.2.

**Table-3.2**

Table showing tools of research used in the present Study.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Variable</th>
<th>Tools</th>
<th>Developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Academic Achievement</td>
<td></td>
<td>Collected from Office records</td>
</tr>
</tbody>
</table>

3.9 DESCRIPTION OF THE TOOLS

3.9.1 Academic Achievement

The investigator collected the total marks of the IX class students obtained in annual examinations from the concerned institutions conducted by District Common Examination Board. These scores are considered as their academic achievement.

3.9.2 Family Environment Scale

The Family Environment Scale developed by Dr. Harpreet Bhatia and Dr. N.K. Chadha was selected to know the family environment of the students.

The family is the oldest and the most important of all the institutions that man has devised to regulate and integrate his behaviour as he strives to satisfy his basic
needs. The family is basically a unit in which parents and children live together. Its key position rests on its multiple functions in relation to overall development of its members, their protection and over all well-being. Therefore, it would emerge that not only the social and physical well-being of the individual is taken care of by the family, but the psychological well-being as well.

The family is the first to affect the individual. It is the family which gives the child his first experience of living. It gets him when he is completely uninformed, unprotected, before any other agency has had a chance to affect him. The influence of the family on the child is, therefore, immense. The influence of other agencies, although indispensable, must build upon the groundwork furnished by the family.

However, to understand the influence of the family on the child, it is important to understand the family and its functions. Family has been defined in the Oxford Dictionary as: 1) the body of persons who live in one house of under one head, including parents, children, servants, etc., 2) the ground consisting of parents and their children, whether living together or not; 3) a person’s children reared collectively; and 4) those descended, or claiming descent from a common ancestry.

**Connecting Family Environment**

The family environment is influenced by a number of factors like the nature of family constellation; number of children in the family; marital relationships between husband and wife; maternal (paternal) employment; and socio-economic and religious background of the family.

The family environment possesses a certain consistency so that the impact of the same basic values, individuals, material objects etc., is felt over and over. Parental influence may not be felt in a specific situation, but the attitudes and ideas expressed day after day inevitably leave their mark. In certain ways the influence of the family can be negative. All too often, members of the family take out all their frustrations on each other. Moreover, “instead of being a readymade source of friends, the family is
too often a readymade source of victims and enemies, the place where the cruelest words are spoken."

**Selection of Dimensions**

This family environment scale is based on the family environment scale by Moos (1974). This scale consists of three dimensions which are taken from Moos’ scale. Although the concept of dimensions was taken from Moos’ scale, all the sub-scales in each dimension were operationally defined with certain modifications of original definitions. Three of the original sub-scales were dropped, and one new sub-scale was added.

The dimensions, along with their operational definitions and contents, were given to eight judges. After making the suggested changes and modifications, they were again given to five other judges. Only those dimensions and contents of the dimensions having at least 75 per cent agreement were retained. These are:

A. **Relationship Dimensions**

I. **Cohesion**- Degree of commitment, help and support family members provide for one another.

II. **Expressiveness**- Extent to which family members are encouraged to act openly and express their feelings and thoughts directly.

III. **Conflict**- Amount of openly expressed aggression and conflict among family members.

IV. **Acceptance and Caring**- Extent to which the members are unconditionally accepted and the degree to which caring is expressed in the family.

B. **Personal Growth Dimensions**

V. **Independence**- Extent to which family members are assertive and independently make their own decisions.

VI. **Active- Recreational Orientation**- Extent of participation in social and recreational activities.
C. **System Maintenance Dimensions**

VII. **Organization**- Degree of importance of clear organization structure in planning family activities and responsibilities.

VIII. **Control**- Degree of limit setting within a family.

**Item Selection**

It was decided to write 13 to 17 items under each sub-scale. The items were written sub-scale wise to avoid overlapping among items. An initial pool of 121 items was made ready for the entire scale. These items were given to eight experts for rating on the following rating scale.

<table>
<thead>
<tr>
<th>Not Acceptable</th>
<th>Doubtful</th>
<th>Acceptable</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Only those items with 75 per cent approval of the experts were retained. Thus, out of the initial 121 items, 17 items were rejected and 104 were further subjected to item analysis.

**Item Analysis**

The scale was administered to an unselected sample of 350 subjects. The age range of the subjects was 17 to 50 years and they belonged to the middle-class socio-economic strata. Subjects were asked to respond to the items by marking any one of the five response options: Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree. The items were scored as:

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

On the basis of the total score of subjects, the group was divided into two- a high score group and a low score group. These scores were then subjected to chi-
square ($\chi^2$) computation. Only those items with at least 0.05 level of significance were retained. Thus, out of the 104 items retained after rating, 35 items were rejected and 69 items were retained for the final form. The final scale along with the response categories is as follows:

**Scoring Key**

<table>
<thead>
<tr>
<th>Sub-Scales</th>
<th>Relationship Dimensions</th>
<th>Itemwise Sr. No.</th>
<th>Total Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Cohesion</td>
<td>Positive</td>
<td>1, 9, 24, 37, 43, 55, 60, 63, 66, 67</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>17, 31, 49</td>
<td>3</td>
</tr>
<tr>
<td>II. Expressiveness</td>
<td>Positive</td>
<td>10, 25, 38, 44, 56</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>2, 18, 32, 50</td>
<td>4</td>
</tr>
<tr>
<td>III. Conflict</td>
<td>Positive</td>
<td>11, 19, 39, 51, 61, 67</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>3, 26, 33, 45, 57, 64</td>
<td>6</td>
</tr>
<tr>
<td>IV. Acceptance and Caring</td>
<td>Positive</td>
<td>8, 16, 36, 42, 48, 54, 59, 62</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>23, 30, 65, 68</td>
<td>4</td>
</tr>
<tr>
<td>V. Independence</td>
<td>Positive</td>
<td>4, 27, 46, 52</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>12, 20, 34, 40, 58</td>
<td>5</td>
</tr>
<tr>
<td>VI. Active-Recreational Orientation</td>
<td>Positive</td>
<td>5, 13, 21, 28, 47</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Negative</td>
<td>35, 41, 53</td>
<td>3</td>
</tr>
</tbody>
</table>

**System Maintenance Dimensions**

| | | | |
| VII. Organization | Positive | 14 | 1 | 2 |
| | Negative | 6 | 1 | |
| VII. Control | Positive | 7, 22 | 2 | 4 |
| | Negative | 15, 29 | 2 | |

**Grand Total** | 69 |

**Reliability**

Split-half reliability was found for the present scale. For this purpose, the present scale was split into two halves. The scores of each dimension were also split
into two halves. The scores for each of these halves were then correlated. From this self-correlation of the half-tests, the reliability coefficient of the whole test was estimated using the Spearman-Brown Prophecy formula. The reliability coefficients thus obtained are as follows:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Sub-Scales</th>
<th>Reliability Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Cohesion</td>
<td>0.92</td>
</tr>
<tr>
<td>II.</td>
<td>Expressiveness</td>
<td>0.88</td>
</tr>
<tr>
<td>III.</td>
<td>Conflict</td>
<td>0.84</td>
</tr>
<tr>
<td>IV.</td>
<td>Acceptance and Caring</td>
<td>0.86</td>
</tr>
<tr>
<td>V.</td>
<td>Independence</td>
<td>0.70</td>
</tr>
<tr>
<td>VI.</td>
<td>Active-Recreational Orientation</td>
<td>0.48</td>
</tr>
<tr>
<td>VII.</td>
<td>Organization</td>
<td>0.75</td>
</tr>
<tr>
<td>VIII.</td>
<td>Control</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Overall Test Reliability Coefficient= 0.95

Validity

Both face and content validity were tested by giving the scale to eighteen experts to evaluate the test items. Only those items with atleast 75 per cent agreement among the judges were retained. For content validity, the dimensions of the family environment were selected and clearly defined for the purpose of measuring the specific aspects of the environment. These definitions were also subjected to the judgement of the eight experts in the first step, and five experts in the second step.

Norms

Specific norms need to be formulated separately for each specific group under study. However, the qualitative norms for the sample of the age range of 17 to 50 years are presented here:
<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Sub-Scales</th>
<th>Raw Score</th>
<th>Qualitative Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Cohesion</td>
<td>61 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>46 to 60</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>45 and below</td>
<td>Low</td>
</tr>
<tr>
<td>II.</td>
<td>Expressiveness</td>
<td>40 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>28 to 39</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>27 and below</td>
<td>Low</td>
</tr>
<tr>
<td>III.</td>
<td>Conflict</td>
<td>52 and above</td>
<td>Low conflict</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>38 to 51</strong></td>
<td>Average conflict</td>
</tr>
<tr>
<td></td>
<td></td>
<td>37 and below</td>
<td>High conflict</td>
</tr>
<tr>
<td>IV.</td>
<td>Acceptance and Caring</td>
<td>57 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>41 to 54</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>40 and below</td>
<td>Low</td>
</tr>
<tr>
<td>V.</td>
<td>Active-Recreational</td>
<td>34 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Orientation</td>
<td><strong>26 to 33</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25 and below</td>
<td>Low</td>
</tr>
<tr>
<td>VI.</td>
<td>Independence</td>
<td>41 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>31 to 40</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30 and below</td>
<td>Low</td>
</tr>
<tr>
<td>VII.</td>
<td>Organization</td>
<td>10 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>7 to 9</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 and below</td>
<td>Low</td>
</tr>
<tr>
<td>VIII.</td>
<td>Control</td>
<td>18 and above</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>14 to 17</strong></td>
<td>Average</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13 and below</td>
<td>Low</td>
</tr>
</tbody>
</table>

*In this sub-scale, high score is indicative of low conflict and vice-versa

### 3.9.3 Mass Media Scale

The scale used for measuring the mass media of the IX standard students was a five point scale (Basically a rating scale). It is a standardized scale developed by Narayanaswamy M. and Dr. (Mrs.) Haseen Taj, Department of Education, Bangalore.
University, Bengaluru-56. The researcher adopted and standardized by the researcher for students.

It contains 118 statements with four components i.e., television, radio, newspaper, motion pictures, computer & internet, mobiles. The mode of response was to just encircle around any one of the five given choices i.e., A, F, S, R, N. where

A – Always
F – Frequently.
S – Sometimes
R – Rarely
N – Never

The marks will be allotted thus

- 5 – Marks for encircling – A
- 4 – Marks for encircling – F
- 3 – Marks for encircling – S
- 2 – Marks for encircling – R
- 1 – Marks for encircling – N

**Reliability and Validity of Scale**

Different types of validities such as content and item validity were established. The reliability and inter correlation of the scale are presented in the following table:

Table showing the Reliability ‘r’ value and index of Reliability

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Reliability</th>
<th>‘r’ value</th>
<th>Index of Reliability √r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Test-retest</td>
<td>0.52</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>(After one month)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The following table shows the inter correlation with the total of mass media scale (MMS).

**Inter-correlations among areas and with the total of Mass Media Scale (MMS)**

<table>
<thead>
<tr>
<th>Media</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Television</td>
<td>-</td>
<td>0.062\textsuperscript{NS}</td>
<td>0.09\textsuperscript{NS}</td>
<td>0.02\textsuperscript{NS}</td>
<td>0.252\textsuperscript{**}</td>
<td>0.195\textsuperscript{**}</td>
<td>0.281\textsuperscript{**}</td>
</tr>
<tr>
<td>2. Radio</td>
<td>-</td>
<td>-</td>
<td>0.102\textsuperscript{*}</td>
<td>0.402\textsuperscript{**}</td>
<td>0.492\textsuperscript{**}</td>
<td>0.204\textsuperscript{**}</td>
<td>0.061\textsuperscript{**}</td>
</tr>
<tr>
<td>3. Newspaper</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.462\textsuperscript{**}</td>
<td>0.502\textsuperscript{**}</td>
<td>0.300\textsuperscript{**}</td>
<td>0.321\textsuperscript{**}</td>
</tr>
<tr>
<td>4. Films (Motion Picture)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.792\textsuperscript{**}</td>
<td>0.478\textsuperscript{**}</td>
<td>0.417\textsuperscript{**}</td>
</tr>
<tr>
<td>5. Computer &amp; Internet</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.402\textsuperscript{**}</td>
<td>0.285\textsuperscript{**}</td>
</tr>
<tr>
<td>6. Mobile Device</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.320\textsuperscript{**}</td>
</tr>
<tr>
<td>7. Mass Media (Overall)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**3.9.4 Socio-Economic Status Scale**

The Socio-Economic Status Scale developed by Dr. Meenakshi It is largely assumed that the universe is an orderly place where all events occur in keeping with natural laws. Everything follows the cause-effect relationship. “In essence the universe is a sort of giant machine, says Coleman, “which functions according to certain built-in principles. If we had complete information about the machine, we could understand and predict its functioning in every detail.”

What is true of the universe is true of the human behaviour also. Human behaviour is also lawful. Given a complete knowledge of the past experiences and situations of the individual, we could be able to predict how he will, indeed must, act or behave. Psychologists view man as a reactive organism.

An important ingredient of human situation is an individual’s economic potential and social status. These two factors serve as vital predictors of his growth and
behaviour, his personal reactions and also accomplishment, his promoters as well as restrictors.

Financial and material resources are on one hand and social recognition, support and freedom on the other hand would influence a man’s education and opportunity of exposure to the world knowledge and personal development, intellectual and non-intellectual accomplishments and also man’s potentialities in the field of vocation and the world of work. Hence, the importance of this variable of social cum economic status is human affairs. This composite variable consists of four areas namely, a) finance, b) Property, c) Education and d) Social status in life. Here, is an effort to guage an individual’s socio-economic status in a society which he is surrounded by and of which he is a member, which he affects and is affected by. The questionnaire which has been designed for this purpose is a point-scale; points ranging between 3 and 10 depending upon the component of the variable under assessment.

The scale is comprehensive in nature and does not discriminate between rural/urban of male /female subjects. It has been standardized on a sample of 1127 rural/urban students of classes VIII through XII.

Reliability

On 153 boys of class XI in a senior secondary school, the Test-retest reliability has been found to be \( r = .82 \), with a time interval of 10 days.

Validity

Two samples of \( N_1 = 37 \) and \( N_2 = 42 \) of students of a reputed public school and an ordinary government school respectively were taken to have an idea of the validity of the scale. The average scores of these two groups of students were found to be 116.8 and 54.8 with S.D.’s of 35.9 and 20.1 and differentiating ‘t’ standing at 9.29, significant at .01. Interalia it shows the discriminating power of the scale.
Administration of Scoring

The SESS is given to students in groups of 15 to 20 and the purpose of the instrument is explained. They are asked to put a tick mark (✓) against the statements which fit them and a cross mark (✗) which do not fit them. For each tick mark (✓) weightage is shown below partwise.

Part-I (Education)

Count the ticks (✓) against each serial number and record the total in the last column. Suppose father and mother are both Ph.D.’s and one sister is also Ph.D. against serial No.1 there will be 3 ticks. Multiply 3 by 10 to obtain a score of 30. The total of ticks against serial No.2 will be multiplied by 9 and against serial No.3 by 8 and so on. The range of scores will be from 1 to 50.

Part-II (Profession)

The scoring method as used in Part-II is to be repeated. The maximum score will be 50 and minimum will be one.

Part-III (Monthly Income)

Award a score of 10 for the tick (✓) against (a) nine for the tick against (b) and so on. The maximum score will be 10 and minimum will be one.

Part-IV

There are three columns in this section. Marks for each tick is given below.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Column A</th>
<th>Column B</th>
<th>Column C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>10</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>9</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>3.</td>
<td>8</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>7</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>5.</td>
<td>6</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6.</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>4</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>3</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>2</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>1</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Max. Score</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Mini. Score</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

The maximum score in this section will be 30. The minimum may be 03.

**Part-V**

Here the questions are on point scales.

Q.1 a) 4 marks  b) 3 marks  c) 2 marks  d) 1 mark  e) zero
Q.2 a) 5 marks  b) 3 marks  c) 1 marks
Q.3 a) 6 marks  b) 5 marks  c) 4 marks  d) 3 mark  e) 2 marks  
f) 1 mark
Q.4 a) 2 marks  b) 1 mark
Q.5 a) 5 marks  b) 4 marks  c) 3 marks  d) 2 mark  e) 1 mark  
f) zero

Maximum score will be 22 and minimum will be 03.

**Part-VI**

**Surrounding or Locality**

This is again a point scale.

Q.1 a) 5 marks  b) 3 marks  c) 1 mark
Q.2 a) 6 marks  b) 5 marks  c) 4 marks  d) 3 marks  e) 2 marks  
f) 1 mark.
Q.3 For each employee i.e. servant /cook /mali etc., give one mark.
Q.4 to 21: In this section there are 18 items

For (a) give a score of 3, for (b) a score of 2, for (c) a score of one and for (d) a score of zero.

In this part maximum score will be 54 and minimum will be 0.

**Part-VII**

Q.1 a) 5 marks  b) 4 marks  c) 3 marks  d) 2 marks  e) one mark
Q.2 a) 5 marks  b) 4 marks  c) 3 marks  d) 2 marks  e) one mark
Q.3 a) 5 marks  b) 4 marks  c) 3 marks  d) 2 marks  e) one mark
Q.4 a) 5 marks  b) 4 marks  c) 3 marks  d) 2 marks  e) one mark
Q.5 a) 5 marks  b) 4 marks  c) 3 marks  d) 2 marks  e) one mark

The maximum score will be 25 and the minimum will be 05.

**Categorization**

Category of SES Status

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>105 or above</td>
</tr>
<tr>
<td>Above average</td>
<td>Between 90 to 104</td>
</tr>
<tr>
<td>Average</td>
<td>Between 65 and 89</td>
</tr>
<tr>
<td>Below average</td>
<td>Between 50 and 64</td>
</tr>
<tr>
<td>Poor</td>
<td>49 or below</td>
</tr>
</tbody>
</table>

**Use**

This scale has been profitably used by Sair (1998), Hardeep (2001), Jaskaran (2001) and Jasvinder (2002). The mean scores along with the value of N and the description of N are summarized below:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Study done by</th>
<th>N</th>
<th>Description</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Harcharan Das Sair (1998)</td>
<td>262</td>
<td>Academically gifted high school students.</td>
<td>86.06</td>
<td>22.43</td>
</tr>
</tbody>
</table>
2. Hardeep (2001) 200 Physical Education College Teachers 118.3 15.84
3. Jaskaran (2001) 200 Winners of different games at college level 89.38 22.06
4. Jasvinder (2002) 300 Students who failed in VIII class 57.06 21.28

The researchers who happen to use this scale are requested to send the vital statistics of their investigation to the author so that the manual could be enlarged to benefit the subsequent investigators.

### 3.10 COLLECTION OF DATA

The collection of data was started after all the necessary tools were standardized. The data was collected by the researcher by visiting all the selected schools in the districts of Bangalore (Rural and Urban). A clear-cut instruction was given to all the students to respond precisely. The chosen students were requested to respond on the selected research tools. The researcher spent a total of 1.5-2.0 hours on an average to make all the selected students to respond to the given tools.

### 3.11 PROCESSING OF THE DATA

The Researcher administered 952 sets of tools consisting of three tools each to the selected sample of secondary school students. Out of response sets, after discarding incomplete sets only 900 response sets were retained. These 900 response sets were scored according to the standardized procedure stated in the scoring manual of the tools. Each set of responses scored carefully and completely.

### 3.12 STATISTICAL TECHNIQUES USED IN ANALYSING DATA

The statistical techniques were employed for analyzing the data are shown in the following Table-3.3.
Table 3.3

Table showing statistical techniques and the purpose for which they were used.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Statistical techniques used</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pearson’s Co-efficient of Correlation</td>
<td>To find out the significant relationship between Variables</td>
</tr>
<tr>
<td>2</td>
<td>‘t’ test Analysis</td>
<td>To examine the significant differences between groups.</td>
</tr>
<tr>
<td>3</td>
<td>Analysis of Variance (One-way ANOVA)</td>
<td>To examine the significant differences among groups.</td>
</tr>
<tr>
<td>4</td>
<td>Analysis of Variance (Two-way)</td>
<td>To test main and interaction effect of independent and background variables.</td>
</tr>
<tr>
<td>5</td>
<td>Multiple Regression and Multiple Correlation</td>
<td>To identify the significant predictors of the criterion variable.</td>
</tr>
</tbody>
</table>

1. **t-test**

This is used to find out the significant difference between mean scores pertaining to the academic achievement scores of secondary school students according to sex, locality and type of family. The difference between means was tested using the formula.

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

2. **One-way ANOVA**

A One-Way Analysis of Variance is a way to test the equality of three or more means at one time by using variances. Data were analyzed using One-way ANOVA test to determine whether significant differences occurred among estimates grouped by different levels of family environment, mass media knowledge and socio-economic status, type of school management and religion. To find out the One-way ANOVA
value of Academic Achievement at different level groups simultaneously, a post hoc test (Scheffe) was used where significant difference occurred.

3. **Co-efficient of Correlation**

Correlation describes the degree or magnitude of the relationship between the two variables. The measure of this relationship between two variables is called co-efficient of correlation. Measures of correlation, by common convention are defined to take values ranging from –1 to +1. A value of –1 describes a perfect negative relation. All points lie on a straight line, and x decreases as Y increases. A value of Zero means that X and Y are independent of each other. A value of +1 describes a perfect positive relation between X and Y, Pearson Product moment co-efficient of correlation was computed using the formula:

\[
r = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{(N \sum X^2 - (\sum X)^2)[N \sum Y^2 - (\sum Y)^2]}}
\]

Where,
- \(X\) = the sum of observations of variable X
- \(Y\) = the sum of observations of variable Y
- \(X\) = the sum of squares of observation on variable X
- \(Y\) = the sum of squares of observation on variable Y
- \(XY\) = the sum of the products of observations on X and Y variables
- \(N\) = the number of Paired observations.

Pearson Product Moment Correlation was used to examine the relationship between the independent variables and dependent variable.

4. **Two Way ANOVA**

Two-way ANOVA was used to test the interaction of independent and background variables on Academic Achievement of secondary school students. The interaction effect of these variables was examined using 2 × 2, 2 × 3 and 3 × 3 factorial
design. The effect of independent variables of both continuous and discrete nature on
the criterion variable academic achievement has been studied by mean scores of two-
way factorial design for analysing the variables. The most popularly resorted technique
of taking the most divergent estimation is within sets of variance and forming on F-
ratio and test the F with (n) and (n-1) df (Winer, 1971).

Formula is :

\[ F_{\text{Max}} = \frac{S^2_{\text{largest}}}{S^2_{\text{smallest}}} \text{df} = (K & N - 1) \text{Winer, 1971} \]

5. Multiple Correlation and Regression

Multiple Correlation

The correlation between two variables is sometimes misleading and may be
erroneous. If there is little or no correlation between the variables other than that
brought about by their common dependence upon a third variable (or several variables)
(Garret, 1973). As such, multiple correlations seems to be the most appropriate
technique that can be used to analyze the relationship between dependent and
independent variables. For the purpose of the present investigation the Dolittle
multiple correlation technique was chosen (Gulford, 1965). Because the “Wherry
Dolittle method provides a method of solving certain types of multiple correlation
problems with a minimum of statistical labour” (Garrett, 1966). Back solution for beta
coefficients were worked out. Multiple regression equations were computed with the
help of ‘β’ coefficients.

Multiple Regression

The independent variables that were significantly correlated with academic
achievement included in the multiple regression analysis. The regression equation in
score form, for n variables, can be written as:
\[ X_1 = a_{b12.34} \ldots nX_2 + b_{13.X4} \ldots nX_3, \ldots + b_j \ldots X_n \]

In the above equation \( X_1 \) is the criterion to be predicted. The regression coefficients \( b_{12.34} \ldots n, b_{13.24} \ldots n, \ldots \), etc., give the weights to be attached to the scores in each of the independent variable. Furthermore, these regression coefficients give the weights which each variable exerts in determining \( X_1 \) when the influence of the other variable is excluded. From the regression equation of each of the several independent variables plays in determining the scores in \( X_1 \) can be known. The criterion can be obtained developing and solving the normal equations. The Wherry Doo Little Method is used here to derive solutions.