Chapter-3
Research Methodology

3.1 Introduction

3.2 Problem of the Present Study

3.3 Objectives of the Study

3.4 Hypotheses of the study

3.5 Variables
   (A) Independent
   (B) Dependent

3.6 Operational Definitions

3.7 Experimental Design

3.8 Sample

3.9 Tools
   (1) Neo-Five Factor Inventory
   (2) Social Competence Scale
   (3) Altruism Scale

3.10 Procedure for Administration of Scales

3.11 Procedure for Statistical Analysis

3.12 Summary:
Chapter-3

Research Methodology

3.1 Introduction:

Major responsibility of the investigator is to set up a research design capable of providing the solution of the problem while unity of research makes it possible to say that one aspect is more crucial than another design is overall scheme of research and research design is a strategy of investigation. In any research project, design provides the investigator a blue print of research dictates the boundaries of the project and helps in controlling the experimental extraneous and error variance of the problem under investigation.

The present chapter describes the design or plan of the study and highlights the details about the research procedure followed in conducting the study. As such, it is an important part of the research study and needs to be planned and carried out systematically to arrive at accurate judgments. It includes information about the population, the sampling frame, the nature and form of data collection, tools, methods of collecting data and statistical techniques used for analysis of data etc. In order to achieve the objectives and the stated corresponding hypotheses, the following plan of the study has been followed.

To carry out an activity smoothly and successfully, proper planning is a prerequisite condition. A problem either educational or social can be resolved only if it is investigated in a scientific and planned way. In this chapter, the plan and procedure adopted for the study under reference is discussed and explained in a systematic way, plan and procedure of an activity clearly give a picture about the means and ways required to complete the study i.e. type of data needed, how the sources of data were selected, and what data gathering devices were employed. Thus, the
phrase “while discoveries cannot be planned, work must be planned as it leads to discoveries” was followed.

The present study is descriptive in nature and aims at examining the role of Co curricular activities in the development of Personality, Social Competence and Altruism among college students.

3.2 Problem of the Present Study

The present investigation has been mainly aimed at studying the role of co-curricular activities in the development personality characteristics, altruism and social competence in college student. In addition the role of Co curricular activity has been identified among subjects of sexes, area (urban & rural) and activity (N.C.C., N.S.S., Sports). More specifically, the problem under investigation runs thus:

“The Role of Co curricular Activities in the Development of Personality, Social Competences and Altruism among College Students.”

3.3 Objectives of the Study:
The main objectives of the study have been as under:

1. To determine the role of N.C.C. activities in the development of personality among various groups of college students.
2. To determine the role of N.S.S. activities in the development of personality among various group of college students.
3. To determine the role of Sports activities in the development of personality among various groups of college students.
4. To examine and analyze the role of N.C.C. activities in the development of social competence among various groups of college students.
5. To examine and analyze the role of N.S.S. activities in the
development of social competence among various groups of college
students.
6. To examine and analyze the role of Sports activities in the
development of social competence among various groups of college
students.
7. To find out the significant role of N.C.C. activities in the development
of the trait of altruism among various groups of college students.
8. To find out the significant role of N.S.S. activities in the development
of the trait of altruism among various groups of college students.
9. To find out the significant role of sports activities in the development
of the trait of altruism among various groups of college students.

3.4 Hypotheses of the study:

The following hypotheses were framed for this investigation:

1. There is no significant difference in the personality characteristics
among college boys and girls participated in co curricular activities.

2. There is no significant difference in the personality characteristics
among urban and rural area college boys and girls participated in co
curricular activities.

3. There is no significant difference among N.C.C. N.S.S. and Sports
college students in the personality characteristics.

4. There is no significant difference among various interactions of Sex,
Area and Type of activities in regard to personality characteristics.

5. There is no significant difference in the social competence among
college boys and girls participated in co curricular activities.
6. There is no significant difference in the social competence among urban and rural area college boys and girls participated in co curricular activities.

7. There is no significant difference among N.C.C. N.S.S. and Sports college students in the social competence.

8. There is no significant difference among various interactions of Sex, Area and Type of activities in regard to personality characteristics.

9. There is no significant difference in the altruism among college boys and girls participated in co curricular activities.

10. There is no significant difference in the altruism among urban and rural area college boys and girls participated in co curricular activities.

11. There is no significant difference among N.C.C. N.S.S. and Sports college students in the altruism.

12. There is no significant difference among various interactions of Sex, Area and Type of activities in regard to altruism.

3.5 Variables:

The present investigation was designed to study the effects of three independent variables shown as below:

(1) **Sex (A)**: Subjects of both the sexes were included viz., (I) Boys (A₁), (II) Girls (A₂).

(2) **Area (B)**: Subjects were included at two levels viz., (I) Urban (B₁) and (II) Rural (B₂).

(3) **Activity (C)**: Subjects were included at three levels viz., (I) N.C.C.(C₁), (II) N.S.S. (C₂) and (III) Sports (C₃)
(B) Dependent variables:

The investigator has measured NEO five Factors, Social Competence and Altruism of college participating in co-curricular activities. The scores achieved by each subject, were considered as a dependent variable for data analysis.

3.6 Operational Definitions:

1. NCC:

   In India the N.C.C. is a national organization which plays an important role in country’s unity and strength. Its role is incomparable and we have not to pay for it. It is the only mean through which we can shape our nation’s future. As today’s adolescence is tomorrow’s base. It is most important to develop within them the spirit of nationality. In present study the NCC cadet included for the sample taking part in such activity from last one year.

2. NSS:

   National Service Scheme is: ‘NOT ME BUT YOU’. This reflects the essence of democratic living and upholds the need for selfless service and appreciation of the other person’s point of view and also to show consideration for fellow human beings. In present study the NSS Volunteers included for the sample taking part in such activity from last one year.

3. Sports:

   Sports is “the best school and college of life”, teaching basic values and life skills that are important for the holistic and well balanced development of younger generations. In present study the Sports Person included for the sample taking part in such activity from last one year.

4. Personality:

   It means the unique Patterns or ways of thinking, feeling and interacting with others, present in an individual.

5. Social Competence:

   Social competence refers to the social, emotional, and cognitive skills and behaviors that children need for successful social adaptation.
6. Altruism:
It means an active concern for others welfare as should in generosity consideration for others and willingness to help others in need of help.

3.7 Experimental Design:

In order to study the main as well as interaction effects of three independent variables as mentioned in independent variable, a (2x2x3) factorial design as shown in the below Table A was employed enabling the investigator to study the differences:

(A) Between boys and girls.
(B) Between urban and rural subjects and
(C) Between N.C.C., N.S.S., and Sports
TABLE-A  
**FACTORIAL EXPERIMENTAL DESIGN**  
(2x2x3) N=960, n=80 

To conduct the research a 2x2x3 factorial Design was used for collecting and analyzing the data:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sex (A) ↓</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys (A1)</td>
<td>Girls (A2)</td>
</tr>
<tr>
<td>Area (B)</td>
<td>Urban(B1)</td>
<td>Rural(B2)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCC (C1)</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>NSS (C2)</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Sports (C3)</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>240</td>
<td>240</td>
</tr>
</tbody>
</table>

Where:  
A = Sex  
A1 = Boys = 480  
A2 = Girls = 480  

B = Area  
B1 = Urban = 480  
B2 = Rural = 480  

C = Activity  
C1 = NCC = 320  
C2 = NSS = 320  
C3 = Sports = 320  

3.8 Sample:  
In the initial stage, a very huge sample of 1200 students was taken randomly. Since the investigation aimed at studying the three variables namely: (I) two types of sex i.e., boys and girls (II) two levels of area i.e., urban and rural and (III) three levels of activity i.e., N.C.C., N.S.S. and Sports it was necessary to take a very large sample to cover the entire
three variables. Ultimately for the data analysis, a final sample of 960 to fit adequately various cells of design was finalized.

The final sample of the study was comprise of 960 students studying in Arts, Commerce and Science faculty and regularly take part in such activities with minimum period of one year. The sample was selected from the sexes, and age range from 18 to 24 years. The sample was randomly selected from various colleges of Hemchandracharya North Gujarat University, Patan and Gujarat University, Patan as per the requirement of research design of this study.

3.9 Tools:

To measure personality characteristics, social competences and motivation of altruism following standardized tools were used.

1. NEO Five Factor Inventory:

This inventory was used in this study for measuring personality structure which has been developed by Costa & McCrae (1998). It is a 60 item questionnaire with 12 items each for the five factors. Participants rate the items on a five point scale, ranging "Strongly disagree" to "Strongly agree". Reported reliability coefficient of responses ranged from alpha 0.86 to 0.95. The Big Five traits are Openness, Conscientiousness, Extroversion, Agreeableness, and Neuroticism or OCEAN. The description regarding the above five factor are as below.

- **Openness** - People who like to learn new things and enjoy new experiences usually score high in openness. Openness includes traits like being insightful and imaginative and having a wide variety of interests.

- **Conscientiousness** - People that have a high degree of conscientiousness are reliable and prompt. Traits include being organized, methodic, and thorough.
- **Extraversion** - Extraverts get their energy from interacting with others, while introverts get their energy from within themselves. Extraversion includes the traits of energetic, talkative, and assertive.

- **Agreeableness** - These individuals are friendly, cooperative, and compassionate. People with low agreeableness may be more distant. Traits include being kind, affectionate, and sympathetic.

- **Neuroticism** - Neuroticism is also sometimes called Emotional Stability. This dimension relates to one’s emotional stability and degree of negative emotions. People that score high on neuroticism often experience emotional instability and negative emotions. Traits include being moody and tense.

In this study the Gujarati version of the NEO Five Factor Inventory was used.

**2. Social Competence Scale:**

To measure social competence the Social Competence Scale developed by V.P. Sharma, Prabha Shukla and Kiran Shukla was used. This scale consists of 50 items which measures social competence through five factors - pro social attitude, social competition, social leadership, social tolerance and social maturity.

**Scoring:**

Items can be scored on the strength of weights assigned to the five categories of responses in terms of their relative weightages, i.e. Very high with 5 scores and very low with 1 score.

**Reliability**

The coefficient of temporal stability employing test-retest method with an interval of 20 days has been estimated to be $r=0.56$ whereas the coefficient of interrater reliability has been found to be $r=0.67$. 
Validity

Apart from the item-validity as analyzed above the SC scale has been validated against Kohn’s Social Competence Scale and a predictive validity to the extent of $r = 0.72$ was obtained. Further, the English and Hindi version of the SC scale was found to be correlated to the extent of $r = 0.84$.

In this study the Gujarati version of the scale was used.

3. Altruism Scale:

The motivation of altruism was measure with the help of Altruism Scale developed by S.N. Rai and S. Singh. This scale consists of 30 items and measures the altruistic tendency of young boys and girls.

The altruistic scale has been prepared in Hindi language with 30 items. Each item has three alternative responses, say altruistic, neutral and egoistic. This scale has been found to be highly reliable and valid.

**Scoring:** The responses obtained in the form of tick marks (✓) on 30 items of altruistic scale are quantified. Each item of the scale has three alternative responses, i.e., altruistic, neutral and egoistic.

A score of two for altruistic, one for neutral and zero for egoistic is awarded to each item of the scale. The maximum score is 60 and the minimum is zero. Following are the scores for three response categories of each item of the scale.

Scores obtained for each item are summed to get a total score. The scores obtained from Altruism scale range between 0 to 60.
Reliability

Reliability of altruistic scale was determined by test-retest method by the developer of the scale. After one month’s interval retest was done. The reliability coefficient was 0.84 with reliability index of 0.92 which was statistically significant. The obtained reliability coefficient indicates that the scale possesses a fair amount of stability assessing the extent of altruism.

Validity

(i) Content Validity :

The coverage of items of the tool, i.e., altruistic scale deals with almost each important domain of altruistic and helping behavior of school going children and college going adolescents. Home, school, play, emergency and general behavior situations were included in the scale. The opinions of the experts were taken into consideration and that increased its content validity.

(ii) Intrinsic Validity :

This type of validity shows the extent to which the obtained scores measure the true components of the test. It is indicated in terms of the index reliability. The high value of test-retest reliability coefficient of Altruistic Scale shows considerable degree of intrinsic validity.

(iii) Extrinsic Validity :

In order to determine the extrinsic validity of the scale in its final form with 30 items and semi-projective ii instructions, 40 teachers cum guardians of the Ss were included in the sample by the developer of the scale.

The coefficient of correlation between the scores of teachers-cum-guardians and the scores of Ss on Altruistic scale was found to be .63
which was significant at .01 level of confidence. The obtained validity index indicates that the scale does measure the extent of altruism.

In this study the Gujarati version of the scale was used.

3.10 Procedure for Administration of Scales:

Each subject was given NEO Five Factor Inventory, Social Competence Scale and Altruism Scale. The scoring was done with the help of manual. The obtained data of 960 subjects was analyzed with adequate statistical techniques of Analysis of Variance (ANOVA) and subsequent Least Significant Difference (LSD). The whole result and discussion is presented in chapter: 04 of the thesis. The thesis has comprised of total five chapters as mentioned below.

1. Introduction

2. Review of Relevant Literature

3. Research methodology

4. Result and Discussion

5. Conclusion, Suggestion and Limitation

Originally, the data were collected on a sample of 1200 students to include students from both boys and girls, from urban and rural areas, participating in an activity like N.C.C., N.S.S. and Sports. Out of these, only 960 students were retained for the purpose of statistical analysis, so as fit in the cells of (2x2x3) factorial experimental design used to study the four main variables, as shown earlier.
3.11 Procedure for Statistical Analysis:

The data obtained from 960 subjects are arranged in a (2x2x3) factorial design were subjected to adequate technique of statistical analysis, viz., technique of Analysis of Variance in order to examine the roll of main variables and to study their main as well as interaction effects. Subsequently, another statistical technique termed as the Least Significance Difference (LSD) test was applied to find out the significance between two means in specific pairs sub-groups formed by different levels of main variables. All these results of statistical analysis have been presented in various figures and tables and discussed in the next chapter on Result and Discussion.

3.12 Summary:

In this chapter, problem of the research, objectives, hypotheses, variables, sample, tools and procedure were discussed.

*Result and Discussion* have been discussed in the next chapter.