CHAPTER III

METHODOLOGY

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3.1. Introduction:

The previous chapter represents literature and review of the work carried out in the area of personality characteristics, self-confidence and interpersonal behaviour style among various adolescents, youth and students studying in various faculties. This chapter describes the procedure adapted for this study. In this chapter researcher defines the clear-cut picture of his research and mention research methodology i.e. objective, hypothesis, and selection of sample research design, variables and data analysis techniques etc. The hypothesis formulated for the purpose of this study was to be tested by collecting relevant data. Steps taken in this direction are described in this chapter and explained points are as follows.

Experimental method is the mainstay of social science research in general and psychological research in particular, mainly because it is considered the most dependable way of determining causal relationships between the antecedent and the consequent variables. It is well know those psychological processes, phenomena and functions, involved in different types of behaviours, are extremely sensitive to internal as well as external stimulus, inputs, exhibited wide range of variations, and are highly complex. Therefore, their investigation warrants extremely sophisticated plans, strategies and structure of data collections procedures and quantitative analysis. Keeping in view the methodological requirements of behavioural research, over the past few decades, scientists have developed a variety of experimental designs which very along the dimensions simplicity-complexity, and data yielded by these designs required different types of statistical analysis. Experimental design as an important part of research methodology in social and behavioural research.

In the present study aim to find out the status of three dependent variables, that is personality characteristics, self-confidence and interpersonal behaviour style among N.C.C. and Non N.C.C. College students. According to variables level and investigate interaction between each other of the variables put out from sophisticated
research design and sophisticated methodology was used. Also used the suitable statistical techniques were used. The statistical techniques carried out through the SPSS software.

3.2. Statement of the Problem:

“To Study the Personality Characteristics, Self-Confidence and Interpersonal Behaviour Style among N.C.C. and Non N.C.C. College Students.”

3.3 Aim of the study:

The aim of the present research is to investigate the personality characteristics, self-confidence and interpersonal behaviour style among N.C.C. students and Non N.C.C. college students.

3.4. Objective of the study:

1. To study the personality characteristics of N.C.C. and Non N.C.C. college students.
2. To study the influence of gender on students personality characteristics.
3. To investigate the personality characteristics of students to lower and higher socio-economic status.
4. To study the self-confidence of N.C.C. and Non N.C.C. college students.
5. To explore the influence of gender on self-confidence of college students.
6. To investigate the self-confidence of students to lower and higher socio-economic status.
7. To investigate the interpersonal Behaviour Style of N.C.C. and Non N.C.C. college students.
8. To study the interpersonal Behaviour Style of male female students.
9. To study the interpersonal Behaviour Style of students to lower and higher socio-economic status.

3.5 Operational definitions of the terms:

1) Personality Characteristics: The subjects score obtained (dimension wise) on NEO Personality Inventory consider as personality characteristics.

2) Self-confidence: The subjects score obtained on Agnihotri’s Self-confidence Inventory consider as self-confidence.
3) **Behaviour Orientation:** The subjects score obtained on Behaviours Orientation Scale developed by Dr. Pravee Kumar Jha consider as Behaviour Orientation.

3.6. **Hypotheses:**

**H1** - There will be significant differences on following personality characteristics among N.C.C. and Non-N.C.C. College students.

- A. N-Neuroticism
- B. E-Extraversion
- C. O-Openness to Experience
- D. A-Agreeableness
- E. C-Conscientiousness

**H2** - There will be significant differences on following personality characteristics among Male and Female College students.

- A. Neuroticism
- B. Extraversion
- C. Openness to Experience
- D. Agreeableness
- E. Conscientiousness

**H3** - There will be significant effect of socio-economic status on following personality characteristics of college students.

- A. Neuroticism
- B. Extraversion
- C. Openness to Experience
- D. Agreeableness
- E. Conscientiousness

**H4** - There will be significant effect of following interaction among independent variables on students personality characteristics (i.e. Neuroticism, extraversion, openness to experience and agreeableness and Conscientiousness)

- ✓ Types of students * Gender
- ✓ Types of students * Socio economic status
- ✓ Gender* Socio economic status
- ✓ Types of students * Gender * Socio economic status
H5- There will be significant differences on Self-confidence among N.C.C. and Non N.C.C. College students.

H6- There will be significant differences between male and female students on their level of Self-confidence.

H7- There will be significant effect of students’ socio-economic status on their self-confidence.

H8- There will be significant interaction effect of following interaction among independent variables on self-confidence.

- Type of students * Gender
- Type of students * SES
- Gender * SES
- Type of students * Gender * SES

H9- There will be significant differences between N.C.C. and Non N.C.C. college students on their interpersonal Behaviour Style.

H10- There will be significant difference between male and female students on their interpersonal behaviour style.

H11- There will be significant effect of student’s socio-economic status on their interpersonal behaviour style.

H12- There will be significant effect of following interaction among independent variables on interpersonal Behaviour Style.

- Types of students * Gender
- Types of students * Socio economic status
- Gender * Socio economic status
- Types of students * Gender * Socio economic status
3.7. Participant:

For this research work, a simple random sampling technique was used. The samples were consisting of total 400 respondents including two groups’ i.e.200 N.C.C. college students and 200 Non-N.C.C. college students from Aurangabad City (Maharashtra State). Both groups were made with equal number of low (n= 100) and high (n= 100) socio-economic status respondents. Again both sub groups were sub divided into two subgroups according to their gender, namely male (n=100) and female (n=100) .The age level, educational status and nativity of the respondents were controlled to a certain extent i.e., age ranges between 18-25 years and educational status Under Graduation. The socio-economic status determined by their family income and was assess by using SES Scale.

Table No. 3.1
Sample Distribution

<table>
<thead>
<tr>
<th>SES</th>
<th>N.C.C. Students</th>
<th>Non N.C.C. Students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>High SES</td>
<td>N=50</td>
<td>N=50</td>
<td>N=50</td>
</tr>
<tr>
<td>Low SES</td>
<td>N=50</td>
<td>N=50</td>
<td>N=50</td>
</tr>
<tr>
<td>Total</td>
<td>N=100</td>
<td>N=100</td>
<td>N=100</td>
</tr>
</tbody>
</table>

3.8 Variable

There were three dependent and three independent variables, which were taken into consideration in the present investigation given below.

Dependent variables

1. Personality Characteristics (i.e. Neuroticism, Extraversion, Openness to Experience and Agreeableness and Conscientiousness)
2. Self-confidence
3. Interpersonal Behaviour Style

**Independent Variables**

1. Types of students (i.e. N.C.C. students and Non-N.C.C. students)
2. Gender (i.e. Male And Female)
3. Socio Economic status (i.e. High SES and Low SES)

**3.9 Psychological Devises used for data collection:**

The following psychological devises were used for the present research work.

A. **NEO-PI : NEO-Personality Inventory –Revised:**

   The present inventory developed by Paul T. Cost, Jr., Ph.D. and Robert R. Mc Crare. It provides five separate dimensions of personality Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness.

**Administrations:**

In the most recent publication, there are two forms for the NEO, one for self-report (form S) and one for observer rating (form R). Both forms consist of 240 items (descriptions of behaviour) answered on a five point scale, ranging from "strongly disagree" to "strongly agree". Finally, there is a 60-item assessment of domains only called the "NEO PI." There are paper and computer versions of all forms available.

The manual reports that administration of the full version should take between 30 and 40 minutes. Costa and McCrae report that the assessment should not be evaluated if there are more than 40 items missing. They also state that despite the fact that the assessment is "balanced" to control for the effects of acquiescence and nay-saying, that if more than 150 responses, or less than 50 responses, are "agree" or "strongly agree," the results should be interpreted with caution.

Scores can be reported to most test takers on "Your NEO Summary," which provides a brief explanation of the assessment, and gives the participants’ domain levels and a strengths-based description of three levels (high, medium, and
low) in each domain. For example, low N reads "Secure, hardy, and generally relaxed even under stressful conditions," whereas high N reads "Sensitive, emotional, and prone to experience feelings that are upsetting." For profile interpretation, facet and domain scores are reported in T Scores and are recorded visually as compared to the appropriate norm group, much like other measures of personality.

**Reliability:**

The internal consistency of the NEO-PI-3 was consistent with that of the NEO-PI-R, ranging from $\alpha = .89$–.93 for domains and $\alpha = .54$–.83 for facets.

The literature appears to support the internal consistencies listed in the manual, but more interestingly, the NEO has been translated and evaluated in many different languages and cultures. A translation of the NEO to be used in the Philippines has the internal consistency of the domain scores from .78–.90, with facet alphas having a median of .61. Observer-ratings NEO-PI-R data from 49 different cultures was used as criterion in a recent study which tested whether individuals’ perception of the "national character" of the culture accurately reflected the personality of the members of that culture (it did not).

The test retest reliability reported in the manual of the NEO PI-R over 6 years was: $N = .83$, $E = .82$, $O = .83$, $A = .63$, $C = .79$. Costa and McCrae point out that this not only shows good reliability of the domains, but also that they are stable over a long periods of time (past the age of 30), as the scores measured six years apart vary only marginally more than the scores as measured a few months apart.

The psychometric properties of NEO-PI-R scales have been found to generalize across ages, cultures, and methods of measurement.

**Validity:**

In terms of criterion validity there have been the following recent studies. Conard, 2005, found that Conscientiousness significantly predicted the GPA of college students, over and above using SAT scores alone. Cano-Garcia and his two colleagues in 2005 correlated a Spanish version of the NEO to predictors of teacher burnout in Sevilla, Spain. Neuroticism was related to the "emotional exhaustion" factor of burnout at 0.44, and Agreeableness related to the
"personal accomplishment" factor of burnout (which is negatively scored when predicting burnout) at 0.36. Wang, Jome, Haase, & Bruch, in 2006, found that in and minority students Extraversion was correlated to Career Decision Making Self-Efficacy (CDMSE) at 0.30, and that Neuroticism was strongly related to Career Commitment while controlling for CDMSE ($r = .42$). Finally, Korukonda reported in 2007 that Neuroticism was positively related to computer anxiety, while Openness and Agreeableness was negatively related.

**B. Agnihotiri’s Self-confidence Inventory (ASCI)**

This scale developed by Dr. Rekha Gupta, The ASCI has been designed in Hindi to assess the level of self-confidence among adolescents and adults.

**Item-Analysis:** The preliminary form of the inventory consisting of ninety true-false type items was administered to a sample of 200 individuals. The extreme groups were identified by taking 27% of the top scores and 27% of the bottom scores. On the basis of the proportion of true and false answer for each item the validity index of each item was determined with the help of Flanagan’s Table of normalised bacterial coefficients. The obtained validity indicates ranged between .07 and .73. Thus items having validity indices .25 and above were rating for the final form of the inventory. Thus the final form of the inventory has 56 items.

**Standardization sample:** The inventory was than administered in two far-flung cities of the U.P. state Meerut in the western U.P. and Allahabad in the Central U.P. to a sample of 2074 individuals of both the sexes (Male N=748; Females N=1326).

**Reliability:** The obtained reliability coefficient and the index of reliability are reported in following table.

<table>
<thead>
<tr>
<th>Method</th>
<th>N</th>
<th>Reliability Coefficient</th>
<th>Index of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-Half</td>
<td>362</td>
<td>.91</td>
<td>.95</td>
</tr>
<tr>
<td>K-R Formula 200</td>
<td>200</td>
<td>.89</td>
<td>.94</td>
</tr>
<tr>
<td>Test-Retest</td>
<td>116</td>
<td>.78</td>
<td>.88</td>
</tr>
</tbody>
</table>
Validity: In item-analysis validity coefficients were determined for each item by bi-serial correlation method and only those items were retained which yielded .25 or above bi-serial correlation with the total score. The inventory was also validated by correlating the scores obtained on this inventory with the scores obtained by the subject on Basavanna’s (1975) self-confidence inventory. The validity coefficient obtained is .82 which is significant beyond .01 levels.

Scoring: The inventory can be scored by hand. A score is one is awarded for response indicative of lack of self-confidence, i.e. for making cross (x) to falls response to item nos. 2, 7, 23, 31, 40, 41, 43, 44, 45, 53, 54, 55 and for making cross (x) to true response to the rest of the items. Hence the lower the score, the higher would be the level of self-confidence and vice-versa.

C. Behaviour Orientation Scale (BOS) (A measure of interpersonal Behaviour Style):

This scale developed by Dr. Praveen Kumar Jha, Behaviour Orientation Scale (BOS), is a measure of Machiavellian Belief and attitude of an individual in interpersonal relationship. The term Machiavellianism was derived from the name of the great Italian political thinker Niccolo Machiavellianism (1469-1527) and signified the characteristics of the manipulators as put forth by Machiavelli’s in his famous books.

Development of the scale: Mach-scale in Hindi was developed on the basis of Christie (1970)’s Machiavellian scale. Christie developed the Mach IV scale to tap those attitudes and personality traits which were congruent with successful manipulation of interpersonal relationship. The scale consisted of statements paraphrases and reversals of statements from, “The Prince” and “The Discourse” of Machiavelli.

A pool of 71 items believed to be theoretically congruent with statements based on the Prince and the Discourses were coined. The 71 items were placed in a Likert format. Respondent’s options for each item varied from strong disagreement through some disagreement in difference or inability to make up one’s mind, some agreement to strong agreement. When agreement meant acceptance of statement worded in the Machiavellian viewpoint and low score a rejection of such an outlook. The items were presented in a Questionnaire dubbed “Mach II and
respondents were asked to indicate the response alternative to their opinion for each item.

The items for the Mach scale in Hindi were taken from Christie’s (1970) English version of 71 items, which were based on “The Prince and “the Discourses of Machiavelli.

In the light of various suggestions, personal observations and expert’s opinion, difficulties and ambiguities of items were eliminated and slight modifications were made. Thus the preliminary form of Mach-scale consisted of 71 items including three sub-scales i.e. tactics, having 31 items, views, having 29 items and morality having 11 items. These 71 items were considered suitable for the purpose of items analysis. Finally 41 items selected.

**Reliability:** reliability of the test was determined by two methods: 1) split-half method and 2) Test retest method. The product movement co-efficient of correlation between two halves, i.e. split-half was calculated for the whole scale and for each of the three sub-scales (Tactics, views and morality) of Mach-Scale. The Spearman-Brown Prophecy formula was used to estimate full length reliability. The full length split half reliability of Mach-Scale was found .623 (P< 0.01). The Internal consistency of Mach-Scale full length reliability, Tactics = .83, Views= .79 and Morality =.70 all are highly significant beyond 0.01 level of confidence. These internal consistency values reveal that all the scale of Behaviour Orientation Scale is consistent with regard to the dimensions measured. The test-retest reliability of the whole test was calculated 0.39 (P<0.01) and the temporal stability of different sub-scales of Mach-scale were follows,

Tactics 0.59, Views 0.53 and Morality 0.48. All test-retest correlations are highly significant beyond 0.01 level of confidence. This indicates the temporal stability of BOS. So the BOS can be taken to be a reliable test to measure Machiavellian orientation of college and university students and likewise on the other sample.

**Validity:** A test has concurrent validity when it gives an estimate of certain performance. Concurrent validity of a new test may be calculated by finding its correlation with an established test. When a new test is validated against previous test, the previous or established test is known as criterion. Here the Hindi version of BOS was correlated with the Christie’s (1970) Mach IV scale by administering the scale on the 100 college teachers. Product movement correlation was calculated between the obtained cores of Christie’s Mach IV and Hindi version of
Behaviour Orientation scores as developed by the author. A correlation coefficient of .262 (P<0.1, df =98) was obtained which was satisfactorily significant beyond 0.01 level of confidence. Internal validity stands for care taken in test construction itself. Here the internal validity was determined by calculation items-test correlation of the 41 items of the scale. The judge validity, concurrent validity and internal validity indicated that the scale thus developed could be used to measure the Machiavellianism in college and university students and other areas to determine the nature and extent of Machiavellianism in Indian social milieu.

D. Socio- Economic Status (SES): This scale developed by Rajbir Singh and Radhey Shyam in Hindi and English for both the rural and urban people or having allegiance to both areas. First of all, items relating to caste, family, education (of self), occupation, income, possessions (material and monetary), lands (agricultural/residential), participation in social, political, religious and academic activities, house (own or rental), size of house etc. were framed. These were given to experts mainly university teachers from psychology, Sociology, Economic and Education for their expert opinion about the suitability and relevance of the items for measuring SEZ. Their suggestions were incorporated and the selected set contained 25 items. There are 25 statements in the scale, one item each for caste and occupation, two items for family (type and size), one item for educational qualification of self and other members. Four items related to monetary matters (i.e. income, savings, income tax and deposits). One item was kept for entertainment expenses per month while four items relate to housing (type and size). Item no.15 (real estate) has been divided into three parts (A) agricultural land holding, (B) residential plots and their sizes, (C) shops and their locations. In order to cover life areas nine items relating to social, religious, political and academic participation have been included. Items no 25 relates to household possessions (material and livestock). Thus the items in the scale are related to caste/class, occupation, family, education, income, housing, relational network and material and live stocks possessions. Score on item no 5,7,14,15, and 25 are additive whereas on rest of the items only single score is given. The scoring procedure is done as per manual norms.
Reliability: coefficient of stability was calculated by test-retest method. One hundred subjects were administered the SES scale twice after a gap of one year. The coefficient of stability was found to be 0.653. Fifty subjects were administered the scale again after a gap of 30 days and the coefficient of stability was 0.944.

Validity: To assess the validity of the questionnaire, manifold criteria were set. Firstly, 150 subjects were asked to rate their own SES on a three point scale, 1 indicates low SES, 2 indicate middle class SES and 3 indicate were high SES a category. Secondly, the neighbours and colleagues of the respondents were also asked to rate the respondents SES. Thus, two types of criterion scores were available i.e. self rating and other’s ratings. The ratings were correlated with the obtained SES scores, the coefficient of correlation between self and other’s rating was $r = 0.98$ self ratings correlated with SES score positively, $r = 0.737$. Other’s rating were also found to be correlated significantly with SES scores, $r = 0.55$.

3.10 Research Design

Table No. 3.3.

2 X 2 X 2 Factorial Design

<table>
<thead>
<tr>
<th></th>
<th>$A_1$ (N.C.C. Students)</th>
<th>$A_2$ (Non N.C.C. Students)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$C_1$ (High SES)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$B_1$ (Male)</td>
<td>$A_1B_1C_1$</td>
<td>$A_2B_1C_1$</td>
</tr>
<tr>
<td>$B_2$ (Female)</td>
<td>$A_1B_2C_1$</td>
<td>$A_2B_2C_1$</td>
</tr>
<tr>
<td>$C_2$ (Low SES)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$B_1$ (Male)</td>
<td>$A_1B_1C_2$</td>
<td>$A_2B_1C_2$</td>
</tr>
<tr>
<td>$B_2$ (Female)</td>
<td>$A_1B_2C_2$</td>
<td>$A_2B_2C_2$</td>
</tr>
</tbody>
</table>
Where as

A1B1C1- N.C.C. Male students belongs to High SES.
A1B2C1- N.C.C. Female students belongs to High SES.
A1B1C2- N.C.C. Male students belongs to Low SES.
A1B2C2- N.C.C. Female students belongs to Low SES.
A2B1C1- Non N.C.C. Male students belongs to High SES.
A2B2C1- Non N.C.C. Female students belongs to High SES.
A2B1C2- Non N.C.C. Male students belongs to Low SES
A2B2C2- Non N.C.C. Female students belongs to Low SES

3.11 Procedure of Data Collection:

The data were collected personally from the local colleges on different occasions employing the tools. The tools were administered in manageable batches of about 15-20. The testing sessions were about 2 hours duration, with a rest pause of 10-15 minutes. Their seating arrangement was made in a class room. Sufficient distance between the two subjects was kept, so that one cannot easily see the answer written by other.

The test is carried out in accordance with specific instructions given by the authors of the test. Although the test carried with them printed instructions, much emphasis was placed on oral explanations of these instructions, since the students are not ordinarily familiar with psychological tests of this nature. A good deal of time was spent before the actual administration of the test explaining how it was to be answered. They were allowed to start answering the test until they complete understand the process. The students were asked to fill in the personal data in the response sheet before writing the responses for the tests.

3.12 Statistical Technique:

The data were analysed as follows;

The mean (with graphical representation) and standard deviation for respondents on personality characteristics, self-confidence and interpersonal behaviour style were analysed.

Looking to the objectives of the present investigation, analysis of the data collected was done by employing three way ANOVA in order to study the effect of independent variable namely Types of Students, Gender and Socio-Economic Status on
dependent variables i.e. personality characteristics, self-confidence and interpersonal behavioural style.