CHAPTER III
METHODOLOGY

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CHAPTER III

METHODOLOGY

In any scientific enquiry, solutions to research-worthy problems are sought through verification of the problem related research-worthy hypothesis with the help of sound sequential methodological steps. Hence an attempt has been made in this chapter to throw light upon the methodological steps taken in the present investigation for verification of the hypotheses stated in Chapter II. The details of each methodological steps are as under:

3.1 Universe and Sample:

The universe from which a sample of the present study has been selected comprises of the Armed forces of India, the Commander in Chief of which is the President of India. The hierarchical structure of the armed forces is depicted in the line diagram, called figure 1.

The line diagram of figure 1 is exclusively giving representation to military organization in general and that of Army units in particular. Hence an attempt has been made to give representation to the
OUTLINE ORGANISATION OF DIRECTORATE - GENERAL NCC

DIRECTOR GENERAL

DY. DIRECTOR GENERAL
DIR. OF TRG. DIR. OF ADM.

SO TO DG
DIR. (P & C) DIR. OF PERS.

INSPECTOR NCC

DY. INSPECTOR
ACCOUNTS OFFICER

DY. DIR. (NAVY) DY. DIR. (AIR)

DAIR (GIRLS DIV.) AD (NAVY)

DY. DIR. (GIRLS DIV.) AD (NAVY)

DAD (GIRLS DIV.) AD (AIR)

DY. DIRECTOR GEN. NCC

DY. DIR. NCC

ASTT. DIR. (TRG.)

DAD (TRG)

ASTT. DIR. (NAVY)
'A' BRANCH

DAD

DAD (AIR)

ASTT. DIR. (NAVY)

'A' BRANCH

DAD

ACCOUNTS OFFICER (CIV)

ASTT. DIR. (NAVY)

'A' BRANCH

DAD

ACCOUNTS OFFICER (CIV)

ASTT. DIR. (NAVY)

'A' BRANCH

DAD

ACCOUNTS OFFICER (CIV)

VARIABLE GROUPS

GP HQ (COL)

VARIOUS NCC BNS

BN HQ (LT COL)
FIG. 3 BORDER SECURITY FORCE

DIRECTOR GENERAL B.S.F.
I.P.: = I.G. POLICE
D. I. G.
G.O.S. = COMMANDANT
DY. COMMANDANT
A.C.=ASSISTANT COMMANDANT
N.G.O.S. — INSPECTOR
SUB INSPECTOR
C.H.M.
HAVALDAR
NAYAK
L/NAYAK
para-military organizations with the help of line diagram shown in figures 2 and 3. Figure 2 deals with the para-military hierarchical organization as existing in the Border Security Force while figure 3 gives glimpses of the para-military hierarchical organization as it is existing in the NCC. Of course there are other para-military organizations operative in the Indian Defence Services like Assam Rifles, Indo-Tibetian Border Police, Home Guard, Central Reserve Police etc. However, since the sample from the para-military organization has been taken only from the B.S.F. and N.C.C. the hierarchical details of other para-military organizations are not reported here.

It is to be registered here that the sample of the present investigation can be labelled as a stratified random sample because, as per requirements of the hypothesis mentioned in Chapter II preference was given to only 4 strata of the military personnel namely, commissioned military officers, non-commissioned military officers, commissioned para-military officers, and non-commissioned para-military officers.

The group of 10 commissioned military officers was selected randomly from the 5th Punjab Bn
headed by one Lt. Col., a group of another 10 commissioned military officers was randomly taken from the 1st Sikh Regiment headed by another Lt. Col. and still another group of 10 commissioned military officers was selected randomly from the Rajputana Rifles headed by one Lt. Col. Thus, a group of 30 Commissioned military officers headed by 3 Lt. Cols. constituted one segment of the stratified sample. For selecting another segment of the stratified random sample a group of 10 non-commissioned military officers was selected randomly from the Sikh Regiment headed by one Brig., another group of 10 non-commissioned military officers was taken from Jammu and Kashmir Regiment headed by one Major, and still another group of 10 non-commissioned military officers was taken from 4-5 Gurakha Rifles headed by one Major. Thus, a group of 30 non-commissioned military officers headed by 3 superior officers constituted the second segment of the sample.

From the para-military personnel, the remaining 2 segments of the sample were selected randomly. For instance, a group of 10 commissioned para-military officers was selected randomly from B.S.F. Academy Tekanpur, headed by one Commandant, a group of another 10 commissioned para-military officers was taken from B.S.F. Academy, Tekanpur headed by one
Commandant T.S.U.; and a group of still 10 commissioned para-military officers was selected randomly from B.S.F. Indore, headed by one DIG. Thus, a group of 30 commissioned para-military officers constituted the third stratum of the sample. Further, a group of 10 non-commissioned para-military officers was selected from the B.S.F. Academy, Tekanpur, headed by one Assistant Commandant (ADJT), another group of 10 non-commissioned para-military officers was selected from 4 MP BN NCC Bhopal headed by one OC, and a group of still another 10 non-commissioned para-military officers was selected from B.S.F. Academy, Tekanpur, headed by one Commandant DOG Wing. Thus, a group of 30 non-commissioned para-military officers headed by 3 superiors constituted the fourth stratum of the sample. The other particulars of the stratified random sample selected for the present study from the universe of Army personnel are reported in Table 1.

Thus, it is clear from Table 1 that the sample of present study comprises of 120 army personnel of Higher Command. So far as the level of education, sex and average age are concerned, the officers and their higher commands are homogenous among themselves. Hence, it can be said that while selecting the
stratified random sample of the above specifications
care was taken successfully to exercise control over
certain obvious extraneous variables like education,
age and sex.

**Table 1.**
Particular of the sample

<table>
<thead>
<tr>
<th>Cadre</th>
<th>Military</th>
<th>Para-military</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Commissioned officers</td>
<td>Non-commissioned officers</td>
</tr>
<tr>
<td>N</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Level of Education</td>
<td>Matric to graduation</td>
<td>Matric to graduation</td>
</tr>
<tr>
<td>Average age</td>
<td>35.5 yrs</td>
<td>34.9 yrs</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Male</td>
</tr>
<tr>
<td>Higher command</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Level of Education</td>
<td>Matric to graduation</td>
<td>Matric to graduation</td>
</tr>
<tr>
<td>Average Age</td>
<td>45.0 yrs</td>
<td>44.9 yrs</td>
</tr>
<tr>
<td>Sex</td>
<td>Male</td>
<td>Male</td>
</tr>
</tbody>
</table>
3.2 **Research Design**:

As pointed out by Kerlinger (1978) research design is a blueprint of the research engineer because it helps in collecting the disciplined data. In other words, research design is a variance controlling mechanism that gives instructions to the researcher pertaining to data collection in accordance with a particular design of proof suited for verification of a given hypothesis. Therefore, keeping in view the nature of the research hypothesis, especially those ranging from 4 through 6, a 2x2 ex post facto factorial design was employed as it is the best suit in the present investigation owing to its underlying design of proof i.e. the matter of difference.

Similarly, a correlational design based upon the method of agreement as a design of proof was utilized, it being the best design for meeting the requirements of hypotheses 7 and 8 stated in Chapter II.

3.3 **Tools**:

In order to assess the dependent variables (e.g. personality, value, and morale) involved in the research hypothesis reported in Chapter II, in all 3
psychological tools were utilized. The specifications of these instruments are as under:

(a) **Cattell's 16 Personality Factor Questionnaire**:

To assess personality of the 120 Army officers, Cattell's (1962) 16 PF Questionnaire (Form B; English version) was used. This questionnaire gives the most complete coverage of 16 personality dimensions in a brief time. It has in all 187 questions to be answered in a forced choice situation. The source traits as measured by this questionnaire are 16 in number and they are labelled as 16 factor namely, factor A (Reserved Vs Outgoing), Factor B (less intelligent vs More intelligent), Factor C (Affected by feeling Vs. Emotionally stable), Factor E (Humble Vs Assertive), Factor H (Sober Vs Happy-go-lucky), Factor G (Expedient Vs Conscientious), Factor H (Shy Vs Venturesome), Factor I (Though-minded vs Tender-minded) Factor L (Trusting Vs Suspicious), Factor M (Practical Vs imaginative), Factor N (Forthright Vs shrewd), Factor O (Placid Vs Apprehensive), Factor Q₁ (Conservative Vs Experimenting), Factor Q₂ (Group-dependent Vs self-sufficient), Factor Q₃ (Undisciplined Vs controlled), and Factor Q₄ (Relaxed Vs Tense).

The test-retest (after 6 days) factor-wise reliability coefficients (dependibility coefficients)
of the 16 PF Questionnaire (Form B) are .75 for A, .74 for C, .80 for E, .81 for F, .77 for G, .89 for H, .79 for I, .77 for L, .70 for M, .60 for N, .81 for O, .70 for Q_1, .75 for Q_2, .62 for Q_3, and .87 for Q_4. The test-retest reliability coefficient for factor B (intelligence) (form B) has not been reported in the manual as the intelligence test cannot meaningfully be repeated after a short interval. As an evidence of the traits stability coefficients the test-retest (after two months) reliability coefficients for both A+B forms of the 16 PF Questionnaire have also been worked out by Cattell. They are .85 for A, .63 for B, .75 for C, .85 for E, .78 for F, .84 for G, .88 for H, .87 for I, .76 for L, .71 for M, .74 for N, .77 for O, .83 for Q_1, .81 for Q_2, .70 for Q_3, and .78 for Q_4. The 16 PF questionnaire also enjoys construct validity to the tune of .85; as well as the scale-wise or factor-wise direct and circumstantial validities. In the case of form B of 16 PF Questionnaire the factor-wise circumstantial validity coefficients are .84 for A, .42 for B, .94 for C, .63 for E, .66 for G, .96 for H, .74 for I, .96 for L, .77 for M, .93 for N, .89 for O, .88 for Q_1, .77 for Q_2, .81 for Q_3 and .99 for Q_4. Thus, it can be said that Cattell's 16 PF Questionnaire is a highly reliable and valid psychological tool for assessing 16 dimensional personality of the Army personnel too. Hence its use in the present study has
been justified. The answer sheet of Cattell's 16 PF Questionnaire, and not the questionnaire proper has been given in the appendix for maintaining its confidentiality.

(b) Chauhan et al's Value Orientation Scale:

In order to measure value orientations of the 120 sampled out Army personnel, Chauhan et al's (1981) value orientation scale was used. This scale is in Hindi and measures 6 basic value orientations namely, localism Vs Cosmopolitanism, Fatalism Vs Scienticism, Non-venturesomeness Vs Venturesomeness, Traditionism Vs Progressivism, Autocratism Vs Democratism, and Non-empathy vs Empathy. This instrument is good for measuring value orientations of urban adults too. Its value-wise reliability coefficients are .65 for Cosmopolitanism, .69 for Scienticism, .55 for venturesomeness, .76 for Progressivism, .87 for Democratism and .50 for Empathy. So far as its validity is concerned, as has been stated by its authors, it is yet to be determined. A copy of this scale has been given in the appendix.

(c) Dwivedi & Chauhan's Army Officers Morale Scale

For the sake of getting estimates of the rated morale of the 120 sampled out Army officers
Dwivedi & Chauhan's (1989) Army officers Morale Scale was used because it measures officers morale indirectly. This scale is meant for the officer-in-Command who uses it to measure the morale of those officers who are under his command. Moreover, the names of the officers whose morale is to be measured are not disclosed to the officer-in-command; only the code letters correspondent to their names are provided to the rater. Thus this scale gives an estimate of the rated morale of the military officers. The scale comprises of 28 situations and rating is to be done on a 5 point scale consisting of very much, much, average, and much less. The scale is in English and is meant to assess morale of the military officers against the following qualities:

- Firmness in decision, firmness in action,
- Fairness in dealing, adventure and courage,
- Self-confidence, consideredness, sympathy,
- Self-discipline, dedication to work, sense of job satisfaction,
- Punctuality, smartness in movement,
- Quickness in decision, identification with the group,
- Interest in group welfare, loyalty to the group, zeal in the group activities, winning group confidence,
- Setting up of self example, cherising collectivity,
- Cheerfulness, human dealings, hardwork, pleasing
manner, uprightness and professional competence. Its test-retest reliability is .69 and validity is .58. An answer sheet of this scale, and not the scale proper, has been given in the appendix to maintain its confidentiality.

3.4 Procedure and Scoring:

After seeking due permission from the concerned authorities, the aforementioned psychological tools were administered in group as well as individual testing sessions under laboratory like conditions in the respective units of the sampled out Army personnel. The details of the procedure adopted are given below:

The 10 commissioned military officers of the 5-Punjab Regiment were contacted and in a group situation Cattell's 16 PF questionnaire was administered, and then Chauhan et al.'s value-orientation scale was given to them. Thereafter, their officer-in-command, Lt.Col. was requested to rate these 10 commissioned military officers on Dwivedi & Chauhan's Army officers Morale Scale. Then the 10 Commissioned Military officers of the 1st Sikh Regiment were contacted and 16 PF questionnaire and value orientation scale were administered to them. After
that their Lt. Col. was requested to rate them on Army officers morale scale. After that the 10 commissioned military officers of the Rajputana Rifles were visited and 16 PF questionnaire and value orientation scale were administered to them in succession. Further the Lt.Col. of these officers was requested to rate their morale on the Army officers morale scale. Thus, the data collection on the 30 commissioned military officers pertaining to their 16 PF, 6 value orientations, and rated morale was completed.

Later on, the 10 non-commissioned military officers belonging to Sikh Regiment were contacted and subjected to 16 PF Questionnaire and value orientation scale. Their Commander being Brig. he was requested to rate their morale on Army officers morale scale. Then the 16 PF questionnaire and the value orientation scale was administered to 10 non-commissioned military officers belonging to 4-5 Gorakha Rifles and their Commander being the Major, he was requested to rate their morale on the Army officers morale scale. Thereafter, the 10 non-commissioned military officers of Jammu & Kashmir Regiment were visited and the 16 PF Questionnaire and the value orientation scale were given to them, one after another. Since their
Commander was Major he was requested to rate their morale on the Army officers morale scale. Thus, data collection pertaining to 16 PF, 6 value orientation and rated morale of the 30 non-commissioned military officers was completed.

Further, the 10 commissioned para-military officers of the B.S.F. Academy, Tekanpur, were visited and subjected to the 16 PF questionnaire and the value-orientation scale respectively. Since their Commander was a Commandant, he was requested to give his rating of morale of these persons on the Army officers morale scale. Thereafter, another group of 10 commissioned para-military officers of the B.S.F. Academy, Tekanpur, was contacted and subjected to the administration of 16 PF questionnaire and value orientation scale, respectively. These officers being under the Commandant T.S.U. , he was requested to rate their morale on the Army officers Morale Scale. Later on the 10 commissioned para-military officers belonging to B.S.F. Indore, were visited and subjected to the 16 PF questionnaire and value orientation scale respectively. Further, they being under the DIG (IPS cadre) he was requested to give he ratings of these 10 officers pertaining to their morale on the Army officers morale scale. Thus, the process of data collection with respect to 16 PF, 6 value-orientations and rated morale
of all 30 commissioned para-military officers was completed.

Further, the 10 non-commissioned para-military officers selected from the B.S.F. Academy Tekanpur, were contacted and the 16 PF questionnaire and the value-orientation scale were administered to them respectively. Their Commander being Asstt. Commandant (ADJT), he was requested to rate these 10 officers pertaining to their morale on the Army officers Morale Scale. Thereafter, another 10 non-commissioned para-military officers of the B.S.F. Academy, Tekanpur, were contacted and subjected to the 16 PF questionnaire, and value orientation scale, respectively. Their Commander being the Commandant DOG Wing, he was requested to rate these 10 officers with respect to their morale on the Army officers morale scale. Finally, the 10 non-commissioned para-military officers selected from the 4 MP BN NCC, Bhopal, were visited and subjected to the 16 PF Questionnaire and the value orientation scale, respectively. Lt.Col. being the O.C. of these 10 officers, he was requested to rate them pertaining to their morale on the Army morale Scale. Thus, the data collection pertaining to 16 PF, 6 value orientation and rated morale of the 30 non-commissioned para-military
Further, the protocols obtained on 16 PF questionnaire, value orientation scale and the Army officers Morale Scale of the 120 military officers were subjected to systematic scoring. First of all, the scoring of the answer sheets of the 16 PF questionnaire was done in accordance with the instructions given in the manual by Chauhan et al. (1981) for the value orientation scale. In this way, for each military officer 6 value orientation scores were worked out. Then the scoring of the ratings given by the officer-in-command of his subordinates pertaining to their morale was done in accordance with the scoring scheme provided in the manual by the authors of the Army officers Morale Scale and thereby, a raw score indicative of the rated morale was worked out for each military officer included in the sample.
In this way, for each member of a sample of 120 military officers, 16 PF scores, 6 value-orientation scores and one rated morale score were obtained and the same were treated statistically for the sake of verification of the hypothesis mentioned in Chapter II. The results of the statistical operations along with their interpretations are reported in the next Chapter.