PROCEDURE

The procedure followed in this study may be described under two sections — one dealing with the pilot study and the other with final study.

I. The Pilot Study

As mentioned in Chapter III, the pilot study was undertaken with three specific purposes. Fifty middle managers selected in equal numbers from one high producing and one low producing organization formed the sample for this study. In respect of sample characteristics all the 50 Ss selected for the pilot study were similar to those selected subsequently for the main investigation.

(a) The Questionnaire:

For the present study two questionnaires were used.

The first questionnaire was developed by the present investigator from Likert's Profile of Organizational Characteristics (1957) to measure the S's 'Perception of Organizational Climate'. The second questionnaire was concerned with the measurement of the 'Perception of need satisfaction' of the employees in the sample. Each questionnaire carried a separate instruction sheet.

adapted from Porter's Need Satisfaction Questionnaire (1960).
The first questionnaire included 68 items. Each item presented four different conditions ranging from extremely favourable to extremely unfavourable condition. For presentation to the Ss these conditions were arranged randomly to avoid the possibilities of any bias on the part of the Ss in selecting the responses (Likert, 1967). The Ss were required to respond to each item by putting a cross mark (X) on the left hand side of one of the four stated conditions which, in their opinion, best described the prevalent conditions in their respective organizations (for details see Appendix I).

The scores for each item ranged from 1 to 4 where a score of '1' meant an 'extremely unfavourable' condition and '4' represented 'extremely favourable' condition. Scores 2 and 3 stood for 'rather unfavourable' and 'rather favourable' conditions respectively. Therefore, the total score for this part of the questionnaire ranged from 68 to 272.

The second questionnaire was meant for the measurement of degrees of satisfaction of the Ss with respect to five need areas and was adapted from Porter's Need Satisfaction Questionnaire (NSQ). Porter (1961) developed this questionnaire to measure satisfaction and importance of five need areas, (viz. Security, Social, Esteem, Autonomy and Self-actualization) which, according to his first report (1961), were selected mainly from
those discussed by Maslow (1954). The total number of items selected and used by Porter was thirteen. Two other additional items, which he used in his questionnaire was not taken for consideration.

In his questionnaire Porter asked his Ss to indicate (by means of ratings) the following three kinds of judgement for each item:

a) How much of the characteristics is there now connected with your management position?

b) How much of the characteristics do you think should be connected with your management position?

c) How important is this position to you?

For each of the items the Ss were asked to answer the above three questions by circling a particular number on a 7-point scale where "low numbers represent low or minimum amounts, and high numbers represent high or maximum amounts". His assumptions for the construction of his questionnaire were that

1) job satisfaction was a function of the "extent to which rewards actually received meet or exceed the perceived equitable level of rewards". The more the discrepancy, the greater is the dissatisfaction.
2) operationally, the 9WS.Q taps 'rewards actually received' by asking the respondent to rate on a 7-point scale how much opportunity there is for prestige, personal growth, and the like. The score is taken to represent need fulfillment. It refers to the desirable state of affairs, outcomes, or return a person acquires from either his own thinking or the action of others (Porter and Lawler, 1968).

The "perceived equitable level of rewards" is evaluated by requiring the Ss to rate on a 7-point scale how much of an opportunity for personal growth, for example, there should be in his job. Although Porter consistently refers to this element of the questionnaire as a measure of the perceived or expected equitable level of rewards, there may be some confusion as to what it actually measures.

According to Porter and Lawler (1968), it indicates what an individual feels he should receive as a result of a given level of performance or what he feels should be attached to a particular position or job in the organization. It is possible, however, that the response to the question "How much should there be?" reflects the perceived possibilities of actually obtaining the satisfaction desired. That is, the response may be
an index of more pragmatic assessment of what can reasonably be expected from 
the job and not, as intended, an evaluation of what is a fair reward for the 
job.

3) the degrees of satisfaction may be assessed from the discrepancy 
between the rewards received and the rewards expected. Since 
the response values to the question "should be" are usually 
numerically larger than responses to the question "is there", 
the P.W.S.Q. data are presented in terms of a dissatisfaction 
score. Thus, the larger the difference or discrepancy the 
greater is the dissatisfaction.

4) Porter's questionnaire assesses the importance of different 
needs by asking Ss to rate on a 7-point scale, how important 
each need is. Presumably, therefore, when this rating is not 
considered no evaluation of importance is made.

As the present researcher did not, in any way, intend to study the 
importance of needs in his work, he did not consider the rating on 'import-
ance' of need factor in his questionnaire. So, in place of three questions 
attached to each item, only two were used in the present case.

In one study with this questionnaire Porter and Lawler (1968) defined 
need satisfaction without any reference to the importance of needs rating,
Consequently, in omitting the question related to the perceived importance of the need, there was no substantial change in the stimulus value of the questionnaire.

Scores are usually summed over the items for each need and are typically presented individually as need dissatisfaction scores. Authors have also computed total scores obtained by summing the scores for all items regardless of need category. The average calculated from this sum is employed as a measure of general need satisfaction connected with the job (Porter and Lawler, 1967; Porter and Mitchell, 1967; Rinehart, Barrell, DeWolfe, Griffin & Spanner, 1969).

The questionnaire has been used in an extensive series of reports examining the effects of job levels, staff vs. line job, company size, and organizational structure, etc. on job satisfaction. The major part of this research has been reviewed by Cummings and El Saudi (1968).

The P.N.S.Q. asks the respondent to record his satisfaction over a set of needs. Thus, when data are collected relevant to the satisfaction of prestige, for example, the inputs represent satisfaction from a variety of job aspects.
Porter (1968) has suggested that his test is distinguishable from those of others because of its emphasis on the intrinsic aspect of the job rather than the extrinsic aspect (i.e., job conditions).

**Administration:**

Two questionnaires — (1) The questionnaire for measuring organizational climate and (2) Porter's Need Satisfaction Questionnaire were administered on the Ss separately in two sessions with a time gap of 15 minutes. The questionnaire for measuring organizational climate was administered first.

For the purpose of administering the questionnaires, Ss were called in a group and were apprised of the purpose of the study without disclosing the nature of their belongingness to either high-producing organizations or low-producing organizations.

Then they were requested to go through the instructions printed on the cover page of each questionnaire. After ascertaining that the Ss had clearly understood what to do, they were asked to respond to the items of the questionnaire in the prescribed manner.
No time limit was imposed since none of the questionnaires was a power test. All Ss were allowed to take their own time to fill in the questionnaire. However, they were all through encouraged to complete the task quickly without leaving any item unanswered. The questionnaires thus properly filled in, were then collected from the Ss and the responses were scored and subjected to necessary statistical analysis.

On the basis of the scores thus obtained in the two questionnaires their reliabilities were calculated by the split-half method (odd-even). The correlations were determined and the reliability of the questionnaire for measuring organizational climate was found to be .94 and that for P.W.S.Q. was .98 by applying Spearman-Brown Prophecy formula (79).

With reference to the purposes specified in the earlier chapter it was noted that:

(a) most of the Ss included in the pilot study had some difficulties in recording their judgments on a 7-point rating scale. Failure to discriminate between 1 and 2 at the lower end and between 6 and 7 at the higher end was the chief difficulty reported by the Ss. So, the two extreme points at both the ends were merged and this resulted in a 5-point rating scale to be used for the final sample of Ss.
(b) the question of relative importance of the different needs, being unconnected with the present work, was excluded. This reduced the number of the questions tagged with each need-area to two (in place of three in the original version).

(c) the reliabilities of the two questionnaires were found to be sufficiently high thus ensuring that the judgement received from the Ss were quite dependable.

(d) as regards the instruction, framing of the questions, and their contents no change had to be made because none of the Ss reported any difficulty with respect to these aspects of the questionnaire.

After the pilot study, the questionnaires were administered on the final sample.

II. The Final Study

In the final study, two questionnaires were used. The first one was used to measure the perception of the Ss towards organizational climate and the second one was concerned with the measurement of the perception of need satisfaction of the Ss.

The detail of the first questionnaire was mentioned under pilot study.
The second questionnaire, measuring the perception of need satisfaction of middle managers, Porter's need satisfaction questionnaire was used after a few modifications, i.e. (1) the 5-point scale was used against each item in lieu of 7-point scale, (2) the number of questions tagged with each need-area was two in place of three as it was used by Porter (1961) as reported above.

The Sample

The sample of Ss for the final study was selected from the categorized list of industrial organizations maintained by Directorates of Industries, Government of West Bengal. Organizations in the list were found to be divided into five groups ranging in order from high to low and labelled as 'A', 'B', 'C', 'D' and 'E' (where category 'A' represented organizations having very high rates of production and a very congenial organizational climate, category 'E' included organizations with low output and an uncongenial organization climate).

Organizations from the two extreme categories, i.e. 'A' and 'E', were included in the present study, because these extreme groups were more likely to present clear differences on those aspects with which the present study was concerned. The following factors were also considered in the selection of the organizations:-

a) The organizations must complete at least (ten) years of business,

b) Organizations should be located within Calcutta and its Metropolitan area.

From the two aforementioned categories ten organizations were selected for the purpose of the present study.
These organizations were contacted through written communication for permission to collect data. Seven out of the ten organizations agreed to co-operate. These seven organizations were requested to invite all the middle managers to participate in this research programme. In most of the cases, 50% to 60% of the middle managers participated in the programme. The total number of participants in this programme was 250. The age and experience (in terms of years of service) of each of these participants and the organization they respectively belong to are presented in the table below.

**HIGH PRODUCING ORGANIZATIONS (A)**

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Age (30-34)</th>
<th>Age (35-39)</th>
<th>Age (40-44)</th>
<th>Age (45-49)</th>
<th>Age (50-54)</th>
<th>Age (55-60)</th>
<th>Total</th>
<th>Experience in Years</th>
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<tbody>
<tr>
<td>I</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>6</td>
<td>4</td>
<td>1</td>
<td>28</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>II</td>
<td>3</td>
<td>9</td>
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<td>2</td>
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<tr>
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<td>11</td>
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<td></td>
<td>32</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

**LOW PRODUCING ORGANIZATIONS (E)**

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Age (30-34)</th>
<th>Age (35-39)</th>
<th>Age (40-44)</th>
<th>Age (45-49)</th>
<th>Age (50-54)</th>
<th>Age (55-60)</th>
<th>Total</th>
<th>Experience in Years</th>
<th>Experience in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>1</td>
<td>4</td>
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<td>5</td>
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<td>2</td>
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<td>9</td>
<td>7</td>
<td></td>
<td>30</td>
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<td>8</td>
</tr>
</tbody>
</table>

For obvious reasons the names of these organizations have been kept secret.
Collection of Data

A schedule was prepared in consultation with the organizations to meet the middle managers of different organizations. The investigator apprised these managers of the purpose of the research and were instructed on how to fill in the questionnaires. The questionnaires were distributed among the participants and were collected back from them after these had been duly filled in. Questionnaires of 16 Ss were not considered as they were found to be incomplete. Data of remaining 234 Ss were therefore, finally tabulated for statistical treatment.

Statistical Treatment of Data

a) In the pilot study, it has been already stated, the reliabilities of the two measuring instruments were tested.

To estimate the reliabilities of the two questionnaires split-half method (odd half - even half) was used. From the co-efficients of the correlation obtained between the two halves the reliabilities of the full tests were estimated by the Spearman Brown prophecy formula.

The results obtained have been reported in detail in the next chapter.

b) To test the main hypothesis of the present work it was necessary to test the significance of the difference of mean response of middle managers of two different types of organizations.
For this purpose, 't' ratio was computed (for each variable) by dividing the difference between sample means by its standard error. When the size of the sample is large the distribution of the critical ratio is known to be normal around the true difference between the population means. In the present case, the sample size being sufficiently large (N=234), this condition was supposed to hold good, and t-ratios were calculated from normal deviates.

Let us suppose that for the high producing group the mean and the standard deviation for the variable X are \( \mu_1 \) and \( \sigma_1 \) respectively, and the corresponding figures for the same variable are \( \mu_2 \) and \( \sigma_2 \) for the low producing group.

Since the middle managers from the two types of organizations were selected in a random way and drawn independently from each population, the set of observations for the first group was independent of that obtained for the second group. It was therefore a case where the mean-difference test for two independent samples does apply.

In the next step it was necessary to test whether these two groups differed significantly with respect to their mean scores on each of the thirteen variables with which this study was concerned.
Statistically, it is necessary to verify thirteen null hypotheses each of which was set up as

\[ H_0: \mu_1 = \mu_2 \]
\[ H_1: \mu_1 \neq \mu_2 \]

As the sample size was large, (tao) was assumed to be distributed as a normal deviate under \( H_0 \) (Goon et al., 1968).

With the help of this equation the values of T (tao) for the thirteen different variables were computed. In all cases one-tailed tests were used since the direction of the difference was specified in each case. The findings are reported in the chapter on Results.

c) To find out whether the two aspects (perception of organizational climate and perception of need satisfaction) are independent of each other, the correlation between each characteristic of organizational climate and the total need satisfaction score was calculated. Here the need satisfaction score was obtained by summing up all the scores of an individual regardless of 'need' categories. Porter & Lawler (1968) also did the same to get the total 'need' score.

For computing the correlation coefficients Pearson's Product Moment method was used.
d) To arrive at a more meaningful result regarding the difference between the two groups of middle managers, a profile or pattern analysis based on the inter-variable distances within each group (Osgood, et al., 1957) was undertaken.

For this purpose, the raw scores on all the variables were first converted into scaled scores (with 100 as mean and 10 as S.D.), and inter-variable distances measured in terms of the differences between all possible pairs of scores that came under a particular set. Since there were two sets of scores (one for organizational climate and the other for need satisfaction) two profiles or patterns were obtained for each of the two groups of Ss. The eight variables under the organizational climate formed 28 possible pairs; while the five variables under the need-satisfaction formed 10 possible pairs. Thus one profile was made of 28 pairs and the other of 10 pairs.

The differences in the two profiles obtained for the two groups of Ss were tested for significance by using a non-parametric test (Kolmogorov-Smirnov Two Samples Test). Here, too, the hypothesis framed was the null-hypothesis on the difference between two profiles obtained for the two groups on the same set of variables.

The results obtained are reported in the next chapter.