CHAPTER IV

METHODOLOGY

THE PILOT WORK

In the light of the objectives mentioned earlier (Chapter: Productivity - Research and Concept) a pilot work was undertaken to know:

(1) What conditions are referred by the textile personnel as related to production activity in general and labour productivity in particular.

(2) What method yields better data so as the data to be valid. (It is thought that the method in turn will decide the approach of analysis and presentation of data).

Also the objective requirements for the main study (incorporated also in pilot work) were:

(1) Knowledgibility of the respondents to be tested through expression of experiences.

(2) Freedom to respondents to bring out maximum facts which are not known to the researcher.
(3) Emphasis on qualitative aspect of information to obtain depth in 'self-report.'

For the above objectives selection of a method for survey research presents obvious limitations. The usually available methods for survey research are:

(1) Records and already collected cases;
(2) Observation;
(3) Questionnaire;
(4) Interview:
   (a) structured-completely;
   (b) semi-structured;
   (c) open end.

CONSIDERATION OF THE METHOD FOR TESTING SUITABILITY

For the kind of research survey, such as this, there are no data available from case collections or from records, to know about the perception of people engaged in productive activities. The method of Records and Case Collection available is thus out from consideration.

The observation method relies heavily on short incidences or snap studies. It rarely provides an opportunity for deeper analysis of behaviour, especially when what is
observed by an observer does not provide all the details about the reactions. Unless the observer has complete understanding about the plant and interpersonal relations etc. of the people, the data is likely to be misunderstood and misinterpreted. When we are dealing with perception of people, going roundabout way from observed reactions to what way 'it might have been perceived' will be less realistic than asking the individual himself.

If the only way open is to ask the individual himself, then the choice becomes between questionnaire and interview methods alone.

Both, questionnaire and interview, approaches place heavy reliance upon subject's or respondent's verbal report for information about stimuli or experiences. The necessary condition is, naturally, that the subject should be (or should have been) exposed to these stimuli or experiences; and also the supplementary condition that he should be aware of his reactions or behaviour so that he is able to report or narrate the experiences or reactions to these experiences.

Moreover, these approaches can obtain only such information or material as the subject is willing and able to report. Despite these limitations of self-report it is
frequently both possible and useful, to get an individual's own account of his feelings toward a psychological object, his image of the object, his views of appropriate behaviour towards it etc.

Even though both these methods assume the validity of the verbal report, there are important differences. In questionnaire the information obtained is limited to the written responses of the subject to a set of pre-arranged questions. Interview has the advantage that the interviewer and the person interviewed are both present as the questions are asked and answered. Besides there is opportunity for mere flexibility in eliciting information. In addition, the interviewer has the opportunity to observe both the subject and the total situation to which he is responding.

With considerations of advantages and disadvantages of questionnaire and interview methods the following conditions, typical in a textile mill, favoured the selection of interview method.

(1) The language - People working talk different languages - A questionnaire preparation in 4 languages is time consuming and difficult job though not impossible.
(2) Necessity of getting the information, given, to be backed by expressions of experiences.

(3) Illiteracy at operative levels.

Thus the ultimate choice was to use either semi-structured interview or open end interview. Structured interview was also thought to be less useful for similar difficulties as questionnaire method.

SAMPLE FOR PILOT WORK

About 20 people from four mills were selected for pilot work. The selection of the four mills was on the basis of a classification of mills as A, B, C - taking balance sheet as a main criterion. The logic, behind is that better equipment, better material and better management will bring more profits. The textile mills can be categorized as A, B, C in the order of overall efficiency and profits.

In taking the four mills from these categories we have further divided B category into B₁ and B₂ on the impressions of the textile personnel. The textile personnel does make a difference showing higher placing of one mill than other in the limits of B. (Something
like higher middle class and lower middle-class categories).

The 20 individuals selected were entirely on their willingness to participate in the interview process. The distribution of these 20 individuals, millwise, was:

- Category A - 5
- Category B1 - 5
- Category B2 - 5
- Category C - 5

THE PILOT WORK AND THE RESULTS

The data that is required is the awareness (through perception) of the various conditions in a work situation. In addition to this the importance of the conditions for improvement in production are to be obtained. This necessitates the testing of questionnaire and interview methods.

The sample, from which the data is to be obtained, comes from various provinces speaking different languages. This means a questionnaire to be used successfully should be in as many as four languages.
This task is time consuming and cumbersome. Again it puts doubts about the validity of the data - as sincerity in taking a questionnaire is always doubtful.

Thus the only recourse was to interview methods:

The schedule for structured interview was prepared with the help of a list given by Switermeiser (1963). This list of questions was in no way thought to be all inclusive and efforts were made to revise and edit the questions to suit Indian conditions. The pilot study helped to determine which method will give clean, sufficient data in reasonable time. The findings are:

(1) Structured interview becomes another case of questionnaire - more or less 'bringing the similar difficulties as that in questionnaire administering.

(2) Free and interview gives much more 'undesirable' latitude to the respondent and it creates many more difficulties in handling the interview situation. It consumes more time as well creates difficulties in proper recording of the data.
(3) Semi-structured interview proved to be a better method than the other two.

This further pinpointed the method of analysis of a qualitative material and that is "Content Analysis Method."

THE PROTOCOL PREPARATION AND ANALYSIS

The data recording was done on the spot in short notes with the permission of the respondent. The data later was written in long form in sufficient details by expanding the short notes to get the final protocol.

In analyzing the protocol a list of all conditions mentioned in pilot study was prepared. (Appendix IV A1).

All these conditions then were grouped in 22 categories (Appendix IV B). The statements of respondents were categorized in four ways under these 22 categories. The ways were:

(1) Condition mentioned as present in the environment;
(2) Condition mentioned as absent in the environment;
(3) Condition mentioned as needing improvement or modification;
(4) Condition not mentioned at all.
THE RESULTS

The pilot work revealed the following points:

(1) People from these four mills (all 20 respondents) bring out, more or less, the same conditions; what differs in the emphasis given by individual respondent per condition.

(2) Whenever a condition is mentioned as present respondents do not give much emphasis on that condition; probably because nothing more is thought in that direction. (This helps further in accepting the values of 'present' and 'absent' categories in the analysis).

(3) The mills gave a picture similar in pattern. The rank order correlations (Rhos) were as follows:

<table>
<thead>
<tr>
<th>Mills</th>
<th>Rank Order Correlation</th>
</tr>
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<tbody>
<tr>
<td>A - B1</td>
<td>.47</td>
</tr>
<tr>
<td>A - B2</td>
<td>.53</td>
</tr>
<tr>
<td>A - C</td>
<td>.39</td>
</tr>
<tr>
<td>B1 - B2</td>
<td>.76</td>
</tr>
<tr>
<td>B1 - C</td>
<td>.48</td>
</tr>
<tr>
<td>B2 - C</td>
<td>.50</td>
</tr>
</tbody>
</table>

* All the correlations computed are Rank Order Correlations: and for facility the Rank Order Correlations will be simply mentioned as 'correlations.' Unless otherwise mentioned 'correlations' mean Rank Order Correlation.
(4) Language preference left entirely to the choice of the respondent facilitates better communication and rapport.

(5) The guide-lines for semi-structured interview should drop certain references because if these are mentioned much of the discussion centers around these points (e.g. salary, promotion etc.)

After the findings of the pilot study, the following material preparations were made. The pilot study experiences necessitated these:

(1) Introduction of the topic in respondents preferred language (mother tongue);
(2) Analysis sheet;
(3) Grouping of conditions in broad categories.

The list of conditions mentioned by the 20 respondents is given in Appendix A\textsubscript{1} to this chapter.

The list of conditions grouped in broad categories is given in Appendix B to this chapter.

Appendix C\textsubscript{1} - shows appointment seeking interview form; and Appendix C\textsubscript{2} shows introduction of the topic in final interview situation.
The pilot work undertaken thus cleared out many of the difficulties. The preparation for all the final work was clearly defined by it and no modifications were necessary during the data collection or analysis stage.

As stated in earlier chapter no generalization was to be attempted. This was necessitated by the very experiences of earlier studies regarding the productivity correlates. The questions, "Is generalization really possible? Does it mean anything with many 'ifs' in the present state of social sciences?" were bit difficult to answer. A study of an organization is specific in itself and puts limitations of its own. Further, pooling the data from many organizations may not necessarily mean more valid conclusions. Possibly it will be misleading. Again, from the mill conditions in India as stated in chapter on "Indian Scene," one will understand the difficulties which creep-in in getting the cooperation from the mill management in such type of surveys. Secondly, it was felt that an intensive study of one textile unit will be of much value than extensive study involving all textile mills (sampling, of course) at this stage of development of social sciences in India.
The present study is thus restricted to only one textile mill which will satisfy certain conditions. The conditions for selection of a mill were:

(1) Availability of about 150 people from various levels distribution of them to be:
   (a) 20 Departmental Heads and Senior Assistant-Departmental Heads.
   (b) 100 Supervisors including Jobbers (as firstline supervisors).
   (c) 30 Union Representatives or operatives' leaders.

(2) Cooperative management - to ensure smooth working during the interview periods, and willingness in participation even by the Managing Agent.

(3) Easy accessibility to all levels in the mill.

(4) Facilities for interview sessions.

Also of importance were the economic consideration of available time and resources of the researcher and the facilities provided by ATIRA where the researcher is an employee.

With these in mind one mill which satisfied all above requirements was selected. This mill is categorized
as a type on the criteria of production, profit, machine modernization etc. and is generally considered to be progressive. This mill satisfied all the requirements mentioned earlier.

THE SAMPLE

A sample of 150 people drawn from the employees of the mill was selected. This included all the department heads of production and non production lines, and also two managing agents. All supervisors were taken. The jobbers (first line supervisors) and the labour representatives needed sampling. Fifty per cent jobbers and representatives from each department were selected. This was done from list provided by the mill management - selecting every alternate person from jobbers and union representatives. (The jobbers from spinning department showed their inability to participate). Again at the end of the interviews two jobbers and one pratinidhi (union representative) requested to drop themselves. Thus the total sample available was:

- Managing Agents: 2
- Departmental Heads (staff): 6
- Departmental Heads (line): 8

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THE DATA COLLECTION

Approaching the Respondent

In order to safeguard against all kinds of unforeseeable difficulties from mill policies and the respondents themselves, following procedure was followed in taking appointments:

(1) Sanction was sought from the managing agent and he was requested to introduce the researcher to the department heads.
(2) Managing agent was interviewed.
(3) The department heads were interviewed one by one and further requested to introduce the sr. assistant/s to the researcher.
(4) Sr. assistants were interviewed.
Help from sr. assistant was sought to check the available lists of supervisors, jobbers and pratinidhis so as to see no body is left out from the list. He introduced the researcher to all the selected respondents.

Each one of the remaining respondent was contacted later and explained the nature of help or cooperation needed and the topic for discussion, explaining the researchers interest and management sanction. Appointment for interview was taken from each one; and this appointment schedule was given to sr. assistant and requested for his sanction about the suitability of relieving these persons for an hour at those times. He was further requested to remind the person concerned about the appointment on behalf of researcher.

It was made very clear to every individual contacted that he is free to say "No," if he is not willing to get interviewed. The person was also assured that the information given by him will be treated as a strict confidential matter. In case he has later thoughts or doubts about researcher's sincerity, he was told that he is
free to drop out at any time - preferably by prior intimation.

Interviews Proper

The interviews were conducted in a room provided by the management for such purposes. The room was comfortable and free from any disturbances.

The respondent was welcomed and after he settled down was explained the nature of interview again in details. The nature of information to be sought and assurance for confidentiality were emphasized.

At this stage only, his permission was taken for taking down notes.

All the respondents gave such a permission.

The respondent then was introduced to the topic in the way given in Appendix C2 to this chapter. (This was used as a basic outline. It was modified very slightly depending on respondent's language preference).

The respondent was requested to seek clarification, explanation etc. if there are any doubts or if he has not understood the instruction. In case there are difficulties about understanding they were solved at
this time by repetition, or explanations of the instruction. Sufficient care was taken as not to lead the respondent.

The Note Taking

Rapport establishment was not a problem except in two cases - (the interviews of them had to be abandoned at their request). The respondents generally chose to air their grievances at the very start, but once a couple of points from these grievances were brought home with the help of few questions; the respondents became more straightforward and started explaining in clearer terms. There was an occasional shift to grievance airing especially in the jobbers and pratinidhis.

Once the respondent touched an area, or condition-group every effort was made to see that he covered all the elements in that area.

The respondents report was taken down in short notes and points. Whenever there was a fear that the point is not distinctly made clear, or where more than one points were put together in a confusive way, it was noted down in a few lines (more elaborately). Typical comments were noted down verbatim as far as possible.
Unless a condition was stated clearly and substantiated by experiences it was not put down in notes. Wherever the respondent pointed out example but could not clearly mention the condition or point, he was helped in naming the condition. The points which were confusive or put together, if not elaborated by the individual in the course of narration, were taken up again at the end to know what exactly the respondent wanted to say.

Except the general areas mentioned and occasional help to clarify the points, there were no suggestions given directly or indirectly. Every effort was made that respondent covers all the areas and as many elements possible in that area.

At the end of the interview session, the interviewer summarized pointwise what had been said and understood and asked the respondent whether the understanding was correct, and/or whether he would like to correct, modify or suggest new points.

Protocol Preparation

Immediately after each interview the interviewer wrote down in details the narration from short notes. This was to serve as the protocol for content analysis later.
Maximum gap between an interview and the protocol preparation was 10 hours (for only two cases). Average time, excluding these two cases, was 25 to 30 minutes between interview and protocol preparation.

The protocols were written in the same way as it emerged from the notes without any attempt to organize or restructure it. This was felt necessary in order to note which conditions were mentioned immediately at the start of interview and which ones at the end. Except in cases where the respondents chose to be very systematic in their narration, covering area by area in order introduced, this reporting "as it came" was an important part as "generally the more intensely felt or experienced items are recollected first."

The protocols then were subjected to analysis.

THE ANALYSIS

To analyze the protocols obtained, a list of conditions suggested by Suitermeiser (1963) Appendix A2 is used with the list of conditions mentioned by 20 respondents in pilot survey. These conditions were grouped in 22 areas, or categories. These 22 categories for classification were defined and listed giving all the details
to be included in each category. (Appendix B).

The data classification was done on following points:

(1) Condition mentioned - not mention/- a dichotomy. Once the condition falls under category mentioned it was further examined whether it is mentioned as "present" in the organization or "absent" in the organization. This separation was not tallied at this stage, but helped in showing the intensity felt in further classification.

(2) Under "present" it is further classified as
   (a) present and helps in production - (one tally);
   (b) present but needs further modification or improvement (one tally).

(3) Under "absent" it is further classified as -
   (a) needs introduction - less emphasis (one tally);
   (b) must be introduced - its absence is much affecting the production (one tally).
The total picture then looks like -

Condition

Mentioned Not Mentioned

Present Absent

a b a b

(4) In both a & b categories additional tally marks were given as 1 or 2 to show intensity. The words "must," "impossible," "best" etc. were interpreted in the light of the general tempo of narration. Habitual usage of these terms was treated on par with normal type of responses of first category getting only initial tally mark.

(5) Additional tally mark was given to every condition mentioned during first 1/5 of the total respondent's reporting time (5 to 10 minutes). As mentioned earlier this was in
accordance with "more intensely a condition felt, more readily or early it will find expression in a narration."

(6) In cases where respondents chose to be very systematic this additional tallys were not used.

(7) The final coded data thus emerges in terms of frequencies of condition mentioned by the respondent.

(Appendix D gives the analysis sheet).

BACKGROUND TO THE HYPOTHESES

Suitermeiser (1963) in showing the various conditions affecting performance of an individual or an organization has pointed to two broad aspects:

(1) Technological aspects; and
(2) The motivational aspects.

The technology aspect about the machinery sophistication and the methods of work suggested by them for better operation are clearly out of the field of this study. The impact of technological development on the personnel, however, is taken care of. All other
details that follow in Suitermeiser's writings form the motivational aspects. All productivity studies, no doubt, will have to lie in these two areas, but this study falls mainly under the area of motivation.

Motivation is dependent on the internal or the organismic factors as well as the external or environmental factors. Behaviour is the outcome of these two factors. But as Skinner (1967) puts it "It is not what is done but how it is done and why it is done is more important." That brings us to the affective qualities of the environmental elements in respect to the individual. How he perceives the situation and how and why he reacts to it. The total environment carries many elements which may or may not have motivating qualities. It is the social situation, the socialization and social development of the individual that will determine to a large extent the motivational value of the environmental element. Thus, it is the perception of an environmental element in the total individual's cognitive frame that gives or attaches the motivational characteristics to the elements. It may be then positive value or a negative value characteristic.
In industrial situations the basic physiological needs do not present any major problems as the payment (means to satisfy the needs) is assured after work; but the peripheral factors, cold-water, fresh-air, rest etc. may bring some difficulties. Herzberg (1959) points out the importance of these elements by saying "if absent they hamper the production, but if present they do not necessarily help in productive efforts or work as motivators." This he prefers to call as hygiene factors.

Without going to the humanistic approach of Rolley May (1967) one can say that an acceptance of job brings in certain conditions which an employer and employee have to accept. With the service contract, there is also something as "Psychological Contract" which determines giving of something from both the sides to help production. One of such condition, a major one at that, and eventhough intangible, is the "climate" of the organization or industry. The word "climate" is used in the way it is used in industrial psychology. The correlates of this climate will affect the "giving" process and thus hamper the production.

Also there is the point of attitudes which emerge as a
result of this climate. The nature of this climate will determine the direction of the attitudes. Also of importance is the perception of this climate by the employees' information of the attitudes. The 'healthy perception,' if one can use such a phrase, will thus highlight the whole process of climate creation and its effect. By healthy perception is meant unbiased perception, i.e. seeing what exists and interpreting it properly so as to avoid any misunderstandings. The attitudes in turn will affect the perception and will come in the picture while interpreting the factors as affecting or helping the production. Examining the conditions mentioned as perceived in frame of the experiences narrated will probably help in reducing the attitude impact. With these biasing factors taken in proper perspective the following hypotheses are put to test in this study.

THE HYPOTHESES

(1) The perception of the conditions which should have companywide influencing character will differ significantly from groups to groups having criteria in grouping as (i) different educational level (ii) difference in years of
experience, (iii) differences in hierarchical position, and (iv) department to department.

(2) The perception of condition which are having only departmentwise influencing character will not differ significantly (a) from department to department and (b) from groups to groups having criteria of groupings as (i) educational differences (ii) differences in experience, and (iii) differences in hierarchical position.

(3) The perception of all the conditions taken together will differ from department to department.

(4) The perception of the conditions will differ from one level to another in hierarchy of the organization. This difference will be more in any two levels which are away from each other than the levels nearer to each other i.e. more the distance between the levels, lesser will be the similarity in rank ordering.

(5) The perception of the conditions will be different from highly educated group to less educated group.
(6) The perception of the conditions will be different for more experienced and less experienced groups and the difference will be significant.

(7) The education and experience combined to form groups will give significant differences in their perceptions. (Educated but less experienced; educated and more experienced).

(8) Conditions which are more tangible in nature will show no difference in perception between levels.

(9) There will be more and more perceptual differences between the levels as the intangibility of conditions increases.
APPENDIX A1

CONDITIONS MENTIONED BY THE 20 RESPONDENTS IN PILOT SURVEY

1. Illiteracy.
2. Caste and community.
3. Religion.
4. Job training.
5. Sense of duty and responsibility.
6. Cooperative working methods.
8. Economic backwardness.
10. Self confidence of supervisors.
11. Planning skills of supervisors.
12. Supervisors supervision techniques.
13. Supervisor's aspirations.
15. Supervisor's personality (Physical features).
17. Open hearted supervisors.
18. Technical knowledge of department head.
19 to 26. Same as 10 to 17 referring to department head.
27. Organization - job clarity.
28. Proper wages and promotion opportunities.
29. Grievance system.
30. Reward system.
31. Proper material procurement - stores.
32. Proper production measurement system.
33. Merit rating.
34. Training facilities for workers and supervisors.
35. Managing agents attitude towards the subordinates.
36. Managing agent's education of the personnel management methods.
37. Clarity in ways in achieving goals and encouragement and guidance from above.
38. Climate of freedom and mutual faith and respect.
39. Sales policy - standardization of product.
40. Instructions system and records keeping system.
41. Pratinidhi's (Union representatives) education and interest in labour problem.
42. Labour pratinidhi's knowledge of labour union.
43. Labour union's interest in labour problems.
44. Management and union relationship.
45. Government rules and regulations.
46. Coordination of activities - production and sales.
47. Double talk and dealings by upper levels.
48. Ignorance of company policies of supervisors and department heads.
49. Responsibilities and authorities of supervisors and department heads.

50. Partiality by superiors.

51. Technical development and job improvements.

52. Rationalization of labour force.

53. Indisciplined labour - and management's failure to settle this problem.

54. Hygiene factors - physical conditions - rest rooms, lunch rooms, cold water, etc.
APPENDIX A2

LIST OF MAJOR FACTORS AFFECTING EMPLOYEES' JOB PERFORMANCE AND PRODUCTIVITY AS GIVEN BY SUTERMEISTER

A Technological Development

(1) Raw Material;
(2) Job Layout;
(3) Methods with Machine Maintenance, Supply of Accessories, Maintenance of Accessories and Supply of Consumable goods.

B Ability - Knowledge  

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Education;</td>
<td>(1) Aptitude;</td>
</tr>
<tr>
<td>(2) Experience;</td>
<td>(2) Personality.</td>
</tr>
<tr>
<td>(3) Training;</td>
<td></td>
</tr>
<tr>
<td>(4) Interest.</td>
<td></td>
</tr>
</tbody>
</table>

C Motivation

Physiological Conditions:
Lightening, temperature, ventilation, rest-periods, safety and music.

Individual Needs:
Physiological, social and egoistic.
Besides these - general economic condition, individual personal position, on-the-job and off-the-job activities, perception of the situation, level of aspiration, reference group, male-female, cultural background, education and experience.

D Motivation

Social Condition:
Organization structure, leadership climate,
Organizational efficiency, Personnel policies - (Job-content, selection, placement, introduction to job, standards, wage-salary level, incentives, job-evaluation, performance rating, and training).
Informal organization - Groups and Leaders.

E Communication

F Specific Environment of Company Plant-time
Size, cohesiveness, goals.

G Supervision
Relationship, Leadership - types of leadership.

H Union

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APPENDIX B

CATEGORIES USED FOR CLASSIFICATION

From Sutkermeier's (1963) list and the list obtained from the pilot survey these categories of conditions are formed. These various conditions are looked from the following aspects and separated from each other to make them mutually exclusive. The reference points are:

(1) Personal characteristics;
(2) Organizational characteristics;
(3) Combination of these two; and
(4) Characteristics from outside source.

From the 1st preference point characteristics are further differentiated as tangible and less tangible. Thus condition 'A' is differentiated as tangible - Education, training, experience etc. The less tangible characteristics such as interest, attitude, aptitude etc. referred as condition 'B'.

Conditions 'D' and 'E' fall under the 3rd reference point. These conditions have an impact from both 1 and 2.
Conditions 'F', 'G', 'H', 'I', 'J' and 'K' are taken from the 2nd reference points as organizational characteristics with its climate creation patancy.

Condition 'L' is similar to Condition B but has been separated from the viewpoint of 4th reference point.

Regarding the Condition 'C' a little more elaboration will be necessary. This condition is not listed in Suitermeiser's list but has come out in the pilot study results. Unesco (1958) report on this socio-cultural conditions affecting the individual productivity makes it necessary to include this condition. This is mainly to test whether the people in textile mill under study perceive this as a factor in productivity. Inclusion of this condition at three levels - operative, supervisor and department head levels - is to further test the perception of lower levels by higher levels and vice versa around this condition. This will give the leader-follower aspect as well on the same level it will give the social distance and thus cohesivity of the group around this condition.

The twenty two conditions (categories) used from classification are given below with needed details to understand the area it covers.
Worker's or Operative's Ability

This area includes all the statements made which will point to the factors which are learned and which by practice are mastered. This will thus include, literacy, training for job, practice aspect i.e. experience which will help in modifying and emphasizing a particular order of work etc.

(These things were included here to differentiate it from other area - area B. These are learned things and become part and parcel of the individual later and they are essential for obtaining a job and for maintaining it).

Worker's aptitude, interest, etc.

This area is differentiated from the first by emphasizing only those qualities which are inherent or a part and parcel of the personality that is to say which for ordinary usage are not counted as the facts in ability one. This area refers to the things which are inferred through experience rather than known (felt Vs facts).
Worker's caste, province, community and religion
This emphasizes the background factors or so to say socio-cultural and economic factors. This variable is added as to find out whether these cultural and caste setting affect the production efforts.

After the operative level the next level taken is that of the supervisors:

A2 Same as A - instead of literacy education is implied-technical training, a degree, certificate in textile technology.

B2 Same as B.

C2 Same as C.

D1 Supervisor's work methods
In this area the aspect of planning of the work, proper distribution of work, and proper supervision and execution of work is included. Also it includes the ways the supervisor handles the subordinate staff, and deals with the superior staff.
Understanding of the company, one's role in the company with responsibility and authorities (Supervisor's)

In any company the supervisor has to know about the details to carry out the duties assigned to him. In certain cases it is the company who takes the initiative in introducing him to these procedures and policies, in other cases he learns and assumes certain things through interaction with colleagues and other experiences. Whatever may its role, this knowledge and utilization of it is known to be necessary for better execution of the duties.

After the supervisory level the next level is taken into account namely that of department head and senior assistants:

A₃ Same as D.
B₃ Same as B.
C₃ Same as C.
D₂ Same as G.
E₂ Same as H.

After this the next level comes into the picture i.e. the managing agent.
Managing agent's attitude toward subordinates.
This condition includes the top man's attitude toward the subordinates, and labour force.
This will include his work-methods of execution of the decision, participative leadership, etc.

General policies of the company
This includes all the policies except the personnel policies; i.e. it includes, the goals, procurement and sales policies, standardization, modernization or rationalization policies etc.

The next area is differentiated from the area F. In area F the policies are of material nature such as procurement, sales, etc. and affect the personnel only indirectly.

Area Q will include policies which will directly affect the personnel such as selection and training systems, promotion policies, grievance procedure, merit rating system etc.

Personnel policies of the company
The policies which are of direct interest to
the personnel or having direct affective value are included. Training, induction, promotion, increments, grievance systems, retrenchments, etc.

**H Communication**

This area includes all communication in the industry. This area is separated from F and G for the reason to put the areas mentioned which will require the channelized instructions, information plans, etc. There can be formal and informal communication, with very many channels. This is neither classifiable under F or G, as this variable is of coordinating type, and thus will affect in its own right the production. A very clearer discretion is to be placed about the nature and extent of communication. Even though all this is not to be gone into it is thought necessary to treat this area separately for obvious reason - the conditions may be present but might not have been communicated making it difficult to judge the absence or presence of the condition.
I Technological development plans and labour rationalization

The emphasis is purely in Indian situation or more so on situation in Ahmedabad textiles - where family management system is in vogue and thus quicker modernization is done to reduce labour cost looking to the advantages of the machines and processes; irrespective of the training facilities or other provision to get the maximum benefits of new machinery.

In the pilot data it was clear, that this kind response is to be treated separately, even though union and management jointly agree with rationalization the actual difficult comes for the labour and supervisory force. The working conditions needed for this are not provided, and in addition the labour is short because of retrenchment, thus making it difficult for the people to work.

J Physical conditions

Here the emphasis is on the facilities provided to the work force as better lunch-rooms, cold-water, rest-rooms, etc. The similarity with hygiene factors of Herzberg should be obvious.
K Working conditions

These refer to the humidity, air circulation, machine maintenance and such other necessities for production - the emphasis is on its indirect effect on worker - in sense that even though the conditions by themselves are going to affect the production, it also is going to increase the workload and uneasiness of workers.

L Union and its relationship with management and attitude toward labour problem

This includes the union work of the welfare and justice type for the labour force. It's efficiency and cooperation will help the labour force as well as the management and thus the production.
APPENDIX C

APPOINTMENT SEEKING INTERVIEW

I am Mr. and I am working for Ph.D. research work. I have already talked with Mr. and obtained his permission to request you to spare some time - say about 45 minutes to an hour at your convenience. I will like to meet you in room which is at the main office building.

As I am talking to everybody to know his views about the conditions which help or affect production as you see them in this mill, I want to get some time from you also to talk on the same. When I mean everybody, it is pratinidhis, jobbers, supervisors and department heads and managing agents.

Do you think you can get time for me. Any time whichever is suitable to you. I will explain the details about what I want to know when we will meet, but be sure that this is regarding production and also that this will be treated as strict confidential. (You are free to refuse to cooperate if you feel like it; but your help will be of great value for my work). (Get the appointment time: if necessary clear any doubts).
APPENDIX C

INTERVIEW PROPER - INTRODUCTION

I have explained to you that day generally that I am interested in knowing from you about conditions which help or affect production. Let me give you some more details about it.

As you know in a mill like this there are many things which come in the picture when the person is working on the job. These things may be government restrictions or labour union demands or such other things, which can be called extra-management factors. Similarly, there are things which come from outside like raw material, spare-parts etc., but with a difference - i.e. the way of procurement which is in the hands of management.

There are also certain things which are companywise as the selection, increments on one hand, also other policies of the company as to the production of certain varieties, consumption rules for some materials. There can be things which may come from other departments as back process or help from engineering department.
Also in the work there are certain factors in the department itself - the department head, supervisors, jobbers pratinidhis etc. and their ways of behaviour and working.

I will like you to tell from your own experiences which of all these problems - and there may be many more - or factors that affect or help production as far as your department is concerned. Please feel free to talk anything. As I told earlier this will be entirely between you and me, but avoid any references to persons if you can, because I might not have met those people and it will be difficult for me to understand the reference. You can ask any questions to me preferably at the beginning or end of the interview about my work.

I will like to take down notes so as not to forget what is talked. I am not interested in who talked but what is talked. I hope you won’t mind my note taking.

Area of Enquiry
- Labour and labour union.
- Supervisor and department head work methods etc.
- Company policies, general and personnel.
- Working conditions and physical conditions.
APPENDIX IV(D)

ANALYSIS SHEET
CODE NO. OF THE RESPONDENT

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Condition</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mentioned as Present in Organization</td>
</tr>
<tr>
<td>1.</td>
<td>Worker's literacy, training and experience</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Worker's interest, aptitude</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Worker's caste, religion and province</td>
<td></td>
</tr>
</tbody>
</table>

etc.
RELIABILITY AND VALIDITY CONSIDERATIONS

Adequacy of a technique for collecting data is ordinarily judged in terms of criteria of reliability and validity. Reliability requires that repeated measurements yield results which are identical or fall within narrow and predictable limits of variability; and the criterion of validity demands that the measurement be meaningfully related to the research objectives; that is it measures what it purports to measure. Important thing is that both these criteria apply not only to the data-collection but also to the technique and procedure specified for using the instrument.

The interview procedure detailed out in methodology chapter takes sufficient care about the two aspects in one sense. We can put in simple form that the interview preparation and the conduct of the interview have taken these two aspects well into account. The main points which helped in achieving this are:

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(1) Voluntary participation of the people in the sample.

(2) The interviewee was instructed to talk and discuss about the conditions around him in work situation - of which he had definite understanding.

(3) The respondent was to back his comments by his first hand experiences citing examples.

These conditions taken into account, our task here is to report the reliability of the categorization or analysis of protocol. Two techniques were used for knowing the reliability of this:

(1) Inter-coder reliability;
(2) Intra-coder reliability - the same rater rating the protocol at different times.

The second method was used to strengthen the results of the first. For the first method three psychologists were requested to help in categorizing the protocol. They were given the list of categories with sufficient details about the limits and the contents that were to be included in the category. They were further
briefed in the use by a few examples. 10 randomly selected cases, separating every sentence of the protocol, were given to them for categorizing. The arrangement of the protocol in the way it is narrated by the respondents was an important factor (already elaborated in this chapter). The coders were told that either each sentence may be representing the idea clearly or a group sentences may do it. So before starting categorization it was necessary to read the whole protocol completely.

The second method was that the researcher himself categorized the 10 protocols again after a break of 6 and 12 months in the same fashion as was expected of the other coders.

INTER-CODERS RELIABILITY

One of the three coders did return the protocols properly categorized. The results show correlation of .73 with researcher's analysis of the protocols.

Due to failure of getting more than one other rater, the researcher did the analysis two times more, having a time gap of about 9 months between the first and
the second analysis and about 8 months between the second and the third analysis. The correlations between the I, II and III analysis are as below:

I and II analysis : 0.92
II and III analysis : 0.89
I and III analysis : 0.89

The per cent agreement on each category and on total categories in the 10 cases taken for analysis was also calculated. Table I shows both the inter rater and intra rater per cent agreement on each category and on total categories.
TABLE I
INTER RATER AND INTRA RATER PER CENT AGREEMENT
ON EACH CATEGORY AND ON TOTAL CATEGORIES

<table>
<thead>
<tr>
<th>Category No.</th>
<th>Coding I</th>
<th>Coding II</th>
<th>Coding III</th>
<th>Coding Second Coder</th>
<th>% Agreement Between First &amp; Second Coder</th>
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<tr>
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