

### Chapter - III

#### M E T H O D O L O G Y

The main purpose of the present research was to try out the job characteristic model in both Public and Private Sector organizations. The job characteristic model as described earlier emphasizes the relationships among the core job dimensions, critical psychological states, and Personal and work outcomes. The core job dimensions are linked up with Critical Psychological states, as well as personal and work outcomes. The three core job dimensions determining meaningfulness in the job are skill variety, task identity and task significance. Another core dimension, viz., autonomy is related with experienced responsibility and similarly feed back dimension is related with knowledge of results. These Psychological States are assumed to produce personal and work outcomes like internal work motivation, high quality work performance, satisfaction with the work etc. Another variable which can act as moderator variable is growth need strength. The felt need of a person to grow and develop within the organization, which is labelled as growth need strength, can act as a moderator variable. The five core job dimensions provide the key to objectively measuring jobs and to changing these so that they have high potential for motivating people who do them. It is reasonable to assume that individuals who are

concerned about their personal growth and development will respond maximally to such changes. Those whose growth need is low will not be affected and will respond poorly to such changes. Six different hypotheses have been formulated based on postulated interrelationships among the variables.

HYPOTHESES :

1. Task identity, skill variety and Task significance are expected to be differentially related to meaningfulness in the job.
2. The experienced responsibility is assumed to be positively and strongly correlated with autonomy in the job.
3. The relationships between the five core job dimensions and on-the-job outcomes are expected to be positive.
4. The relationships of job motivation with outcome variables will be moderated by a moderator variable of growth need strength.
5. Supervisors working in private sector are expected to differ from those working in Public sector in respect of internal motivation. They are also expected to differ in respect of their growth need.
6. Supervisors working in production and maintenance

departments are not expected to differ in respect of internal motivation and growth need.

PROCEDURE FOR TESTING HYPOTHESES :

The first hypothesis states that the task identity, skill variety and task significance are expected to be differentially related to meaningfulness in the job. To test this relationship, experienced meaningfulness of the job will be assessed by means of a set of questions designed for the purpose. The score on the three job characteristics will also be obtained by means of a questionnaire, designed for the purpose. Contribution of each of the three factors to experienced meaningfulness on the job will then be examined by computing partial correlation coefficients. This type of analysis will be made separately for supervisors working in Public and Private sectors.

The second hypothesis states that autonomy is expected to generate a feeling of experienced responsibility on the job. To test this linkage, autonomy which is one of the core job dimensions, will be correlated with experienced responsibility. Both autonomy and experienced responsibility will be measured directly by means of a questionnaire.

States  
The third hypothesis that the core dimensions will be positively correlated with outcome variables. The five

core job dimensions namely skill variety, task identity, task significance, autonomy and feedback on the job will be measured using a questionnaire by asking the respondents to report the extent to which they find these characteristics in their job. The outcome variables namely satisfaction variables and motivation variables will also be measured using a questionnaire designed for the purpose. The hypothesis will be tested by computing the correlations between two sets of variables.

The fourth hypothesis is pertaining to the effect of growth need strength on the relationship between job motivation and outcome variables. It is hypothesized that the outcome variables will show strong positive relationships with job motivation in case of supervisors with high growth need strength in comparison to those with low growth need strength. To test this hypothesis job motivation scores will have to be correlated with outcome variables separately in case of two groups based on growth need strength. For this purpose the total respondents in each of the two types of organizational set-ups will be divided as having high or low growth need strength using the cut off point at mean. The job motivation score will be obtained by <sup>using</sup> the formula :

$$JMP = \frac{(SV + TI + TS)}{3} \times AU \times Fec.$$

where JMP = Job Motivating Potential#

SV = Skill Variety

TI = Task Identity

TS = Task Significance

AU = Autonomy

Fec = Feedback from the job itself

<sup>skill</sup>  
~~Task~~ Variety, task significance, task identity, autonomy, and feedback are all objectively assessable characteristics of the job. It is assumed here that these objective characteristics when combined in the manner described above, will give a score which could be labelled as job motivation score. This score is assumed to be related with outcome variables sufficiently more strongly and positively in case of those supervisors who are greatly concerned about their growth and development.

The fifth hypothesis states that supervisors in public sector will differ from those in private sector in

respect of internal motivation and growth need strength. It is expected that supervisors working in public sector will be more highly internally motivated than those working in private sector. Similarly it is also expected that supervisors in public sector will be more growth and development oriented than supervisors in private sector. These differences are expected due to the very nature of organizations within which they are working. Internal work motivation will be obtained by means of a questionnaire. Growth need strength score will also be obtained using a questionnaire. The difference between public and private sectors supervisors will then be tested using 'f' test.

The sixth hypothesis deals with comparison of supervisors working in production and maintenance departments in respect of internal work motivation and growth need strength. The scores of both these variables will be obtained using a questionnaire. The two groups of supervisors will then be compared in respect of internal work motivation and growth need strength using 'f' test.

#### SAMPLING

The sample consisted of Supervisory cadre personnel working in different departments of Public and Private Sector Organizations.

In case of Public Sector organizations, in all four big companies were selected for drawing a sample under study. Among these Companies one was fertilizers Company manufacturing fertilizers for agricultural use, second was a Petrochemical company manufacturing wide range of Petroleum products, third one was an Oil Refinery Company, and the fourth organization was a Polymer Company associated with fertilizer company for allied products.

Among the Private Sector organizations, in all five big companies were selected for the sample under study. Out of these five companies, four companies were Pharmaceutical companies manufacturing wide range of medicines, bulk drugs, Vitamin products and other Pharmaceutical products, the fifth company was engineering firm having production of wide varieties of electrical motors, motor pumps, switch gears, machine spare parts and so on. Since around Baroda city many well advanced Pharmaceutical companies are situated having well advanced modern technology, it was thought proper to draw a sample from these companies. The engineering firm which was selected is also a big company having modern technology for production.

In all, 700 Supervisors were selected from both Public and Private Sector organizations. They were drawn from two different departments namely production department

and maintenance. Equal number of respondents were selected completely at random from the Supervisory Cadre Personnel working in the two departments of the respective organizations. The main job of the Supervisors was to supervise workers, machine operators, fitters, Junior Foreman, Lineman, Wireman, etc. working under them, and to pass necessary instructions so as to put a constant check on the quality and quantity of the products. They were also responsible for the maintenance of discipline among the workers, and other employees employed under them at shop floor level. They were answerable to higher management for production and overall efficiency of their sections. In a way their position was like a link between workers and management.

Out of an original sample of 700 Supervisory personnel, quite a good number of supervisors were excluded due to incomplete information. The number of non-respondents was also quite high. Finally a sample of  $N = 400$  was retained for the study.

The sampling breakup was as under :

|                   | Supervisors<br>working in<br>Production<br>Department | Supervisors<br>working in<br>Maintenance<br>Department | Total   |
|-------------------|---|--|---------|
| A. Public Sector  | 100   | 100  | 200     |
| B. Private Sector | 100   | 100  | 200     |
|                   |   |  | <hr/>   |
|                   |   |  | N = 400 |
|                   |   |  | =====   |



The Supervisors working in Production Department includes Chemical Engineers, Production Engineers, Production in-Charge, Production Technicians, Chemists, etc.

The Supervisors working in Maintenance Department includes Mechanical Engineers, Electrical Engineers, Civil Engineers, etc.

In public sector organization, the 200 Supervisors, constituting the sample had working experience ranging from 2 to 23 years. In Private Sector Organization the 200 Supervisors constituting the present sample had working experience ranging from 3 to 20 years. In both Public and Private Sector organizations the Supervisors constituting the sample were educated ranging from SSC to graduate level. No major difference was found in both the groups of supervisors as regards education.

The details regarding demographic variables of Supervisors working in both public and Private sector organizations are shown in the following table :

**Table : I**  
SHOWING DEMOGRAPHIC DETAILS OF THE SAMPLE

|                | Average<br>age in years | Average<br>experience<br>in years | Average Salary |
|----------------|-------------------------|-----------------------------------|----------------|
| Public Sector  | 36.00                   | 11.4                              | Rs. 2,939-14   |
| Private Sector | 38.5                    | 14.2                              | Rs. 2,208-03   |

As can be seen from table I the 200 Supervisors constituting the sample from Public Sector Organization had an average age of 36.0 years, and an average working experience of 11.4 years, the average salary per month was Rs.2,939-14 Naya Paisa.

In case of Private Sector Organization, the supervisors had an average age of 38.5 years and an average experience of 14.2 years. The average earning was Rs.2208 and 03 Paisa. The two groups are thus quite comparable in respect of age, experience and income.

Table : II

Showing the family pattern of supervisors in both Public and Private Sector organizations

|                | Joint family | Nuclear family |
|----------------|--------------|----------------|
| Public Sector  | 32%          | 68%            |
| Private Sector | 44%          | 56%            |

As can be seen from table No.II, out of 200 supervisors constituting the sample from public sector organizations, 32% came from joint families, while 68% of them came from nuclear family background. In case of private sector organizations, 44% of the supervisors belonged to joint families, and 56% of them belonged to nuclear

families. The family background of the two groups is thus quite comparable.

TOOL :

The job motivating potential score (MPS), growth need strength, experienced psychological states, affective outcomes and other concepts described earlier were measured by using 'Job Diagnostic Survey Instrument' originally developed by J. Richard Hackman and Greg Oldham (1980). The necessary changes were made in the original instrument so as to make it more appropriate and suitable in Indian context. The item preparation and selection was made strictly within the frame work of the definition of the underlying concept. The items were judged very carefully for their suitability and relevance using standard procedure.

The motivating potential (MPs) score is based on the five core job dimensions described earlier. The following formula was used to compute: the MPs of an employee :

$$\text{MPs} = \frac{(\text{Skill variety} + \text{Task Identity} + \text{Task Significance})}{3} \times \text{Autonomy} \times \text{Feedback}$$

The questionnaire which is known as the job diagnostic survey questionnaire was designed to know the reactions of employees towards their job. The questionnaire was divided into seven section. The first section consisted of seven

questions in the interrogative form. The respondents were instructed to describe their job as accurately and as objectively as possible.

The first section of the questionnaire seeks information about the objective characteristics of the job as perceived by the respondents.

Seven point scale is used to get the answer from the respondents. Seven points ranging from "least" to "most", or "not at all" to "always" was provided for each question. The respondents were required to indicate any one of the seven points to indicate the degree of job characteristic which they think was present in their jobs. These seven points show the increasing magnitude of their responses. The score is simply the point marked by the respondent on the scale.

The second section consists of fourteen statements, also describing the characteristics of the job. The respondent was required to state the extent to which each statement is an accurate or an inaccurate description of his job. Here also the respondent has to be as objective as he can be in describing his job. Seven points were provided for describing his job, ranging from "very inaccurate" to "very accurate". The score is simply the point marked by the respondent to indicate the degree to

which the statement is an accurate or inaccurate description of his job. A score 1 denoted very inaccurate description of job and a score 7 denoted very accurate description of a job. The total score was calculated by adding the score as per the details given in the scoring schedule, given herewith.

The third section comprises of fifteen statements. These statements depicted personal feelings of a job holder about his job. This section depicts the affective aspects of the job. In this section seven point scale is provided to show their positive or negative feelings towards their job. The seven points ranging from "disagree strongly" to "agree strongly" is provided for each question. The score is simply the point marked by the respondent for each statement. A score of 1 denoted disagree strongly, and a score of 7 denoted agree strongly. Total score was calculated as per the details given in the scoring schedule.

The fourth section comprises of fourteen statements which mainly measure the job satisfaction of an employee. The statements related to the items (things) like job security, compensation (pay), fringe benefits, personal growth and development, degree of respect, amount of challenge, quality of supervision, freedom, feeling of worthwhile accomplishment, etc. Seven point scale was used to get the answer from the

respondents, ranging from "extremely dissatisfied" to "extremely satisfied". The score is simply the point marked by the respondent on this scale.

Section five consisted of ten statements, asking the respondents to indicate how other employees felt about the same job. Often different persons feel quite differently about the same job. These ten statements were provided to the respondents with instructions to indicate how other employees felt about job which is same as their own or most similar to their own job. Each statement was to be rated on a seven point scale ranging from "disagree strongly" to "agree strongly". The score was simply the point marked by the respondent on a seven point scale.

Section six consisted of eleven statements describing characteristics of a job which could be present in any job. The respondents were required to indicate the degree to which these characteristics should be present in their jobs. The characteristics of job included in the section were job security, friendly co-workers, opportunity to learn new things, due respect and fair treatment, stimulating and challenging work, high salary and good fringe benefits, opportunity to be creative and imaginative, quick promotions, opportunity for personal growth, sense of worthwhile accomplishment, etc. This section required the respondents

to state how much they personally like to have each characteristic present in their job. A seven point scale was used to obtain the score of employees ranging from disagree strongly to agree strongly.

The seventh section consisted of twelve items, each item described the characteristics of "Job A" and "Job B". Job A and job B were to be rated on five point scale to show the preference. The items which were included in this section measure the growth need of employees. This section deals with the kinds of jobs the person would like to hold. The questions in this section ask an employee to indicate just what it is about a job that is most important <sup>to</sup> him. For each question two different kinds of jobs were briefly described. The respondent was required to indicate which of the jobs he personally would prefer if he had to make a choice between them, all other things being equal. A five point scale was used for this purpose which ranged from strongly prefer "A" to strongly prefer "B". A score 1, indicate strongly prefer "A", score 2 denote slightly prefer 'A', score 3 denote neutral position, score 4 indicate slightly prefer 'B' and score 5 indicate strongly prefer 'B'.

An illustration of such job choice (format) is given below :

| <u>Job A</u>   |                   |         | <u>Job B</u>                                      |                  |
|--|-------------------|---------|---|------------------|
| A job requiring you to expose yourself to considerable physical danger |                   |         | A job located 200 miles from your home and family |                  |
| 1  | 2                 | 3       | 4   | 5                |
| Strongly Prefer A  | Slightly Prefer A | Neutral | Slightly Prefer B                                 | Stongly Prefer B |

The respondents were required to mark the appropriate point on the scale to show their preferrence for job A or job B. The score is simply the point marked by the respondent on a five point scale. After obtaining such a score, it was converted into seven point scale as per the formula given below. Since the present researcher had used seven point scale in section six it was required to convert five point scale into seven point scale so as to obtain a combined score of growth need strength. The score obtained by using a wouldlike format i.e. given in section six and job choice format i.e. indicated in section seven were combined together so as to obtain a final summary score. To transfer the job choice summary score from a 5 point scale to a 7 point scale the following formula was used :

$$Y = 1.5 X - .5$$



### METHOD OF DATA COLLECTION :

The list of supervisory staff working under production and maintenance departments of the public and private sector organizations, was obtained from the personnel department. In all 700 forms were distributed and collected back from the respondents. Out of these 700 forms only 400 (two hundred from each of the two types of organisations) were retained. The 300 forms were rejected because they were incomplete. The forms were distributed to the respondents individually with a request to fill up the bio-data information and to answer each item as indicated in the form. Any clarification sought by the respondents were supplied to them. They were asked to answer each statement carefully keeping in mind real facts. They were assured of complete secrecy of their responses.

### SCORING

#### I Job characteristics :

##### A. Skill variety. Average the following items :

|             |   |  |
|-------------|---|--|
| Section One | : | 4  |
| Section Two | : | 1  |
| Section Two | : | 5 (reversed scoring i.e.,<br>subtract the number<br>entered by the respondent<br>from 8) |

B. Task identity. Average the following items :

Section One : 3  
Section Two : 11  
Section Two : 3 (reversed scoring)

C. Task significance. Average the following items :

Section One : 5  
Section Two : 8  
Section Two : 14 (reversed scoring)

D. Autonomy. Average the following items :

Section One : 2  
Section Two : 13  
Section Two : 9 (reversed scoring)

E. Feedback from the job itself. Average the the following items :

Section One : 7  
Section Two : 4  
Section Two : 12 (reversed scoring)

F. Feedback from agents. Average the following items :

Section One : 6  
Section Two : 10  
Section Two : 7 (reversed scoring)

G. Dealing with other. Average the following items :

Section One : 1  
Section Two : 2  
Section Two : 6 (reversed scoring)

II. Experienced Psychological States. Each of the three constructs are measured both directly (Section Three) and indirectly, via projective-type items (Section Five).

A. Experienced meaningfulness of the work. Average the following items :

|               |   |                      |
|---------------|---|----------------------|
| Section Three | : | 7                    |
| Section Three | : | 4 (reversed scoring) |
| Section Five  | : | 6                    |
| Section Five  | : | 3 (reversed scoring) |

B. Experienced responsibility for the work. Average the following items :

|               |   |                      |
|---------------|---|----------------------|
| Section Three | : | 8, 12, 15            |
| Section Three | : | 1 (reversed scoring) |
| Section Five  | : | 4, 7                 |

C. Knowledge of results. Average the following items :

|               |   |                       |
|---------------|---|-----------------------|
| Section Three | : | 5                     |
| Section Three | : | 11 (reversed scoring) |
| Section Five  | : | 5                     |
| Section Five  | : | 10 (reversed scoring) |

III Affective Outcomes. The first two construct (general satisfaction and internal work motivation) are measured both directly (Section Three) and indirectly (Section Five) : growth satisfaction is measured only directly (Section Four).

- A. General satisfaction. Average the following items :

Section Three : 3, 13  
Section Three : 9 (reversed scoring)  
Section Five : 2  
Section Five : 8 (reversed scoring)

- B. Internal work motivation. Average the following items :

Section Three : 2, 6, 10  
Section Three : 14 (reversed scoring)  
Section Five : 1, 9

- C. Growth satisfaction. Average the following items :

Section Four : 3, 6, 10, 13

IV. Context satisfactions. Each of these short scales uses items from Section Four only.

- A. Satisfaction with job security. Average items 1 and 11 of Section Four.
- B. Satisfaction with compensation (pay). Average items 2 and 9 of Section Four.
- C. Satisfaction with co-workers. Average items 4, 7 and 12 of Section Four.
- D. Satisfaction with supervision. Average items 5, 8 and 14 of Section Four.

V Individual Growth Need Strength. The questionnaire yields two separate measures of growth need strength, one from Section Six (the "would like" format) and one from Section Seven (the "job choice" format).

A. "Would like" format (Section Six). Average the six items from Section Six listed below. The items are : 2, 3, 6, 8, 10, 11.

B. "Job choice" format (Section Seven). Each item in Section Seven yields a number from 1-5 (i.e., "Strongly prefer A" is scored 1; "Neutral" is scored 3; and "Strongly prefer B" is scored 5). Compute the need strength measure by averaging the twelve items as follows :

1, 5, 7, 10, 11, 12 (direct scoring)

2, 3, 4, 6, 8, 9 (reversed scoring i.e., subtract the respondent's score from 6)

Note : To transform the job choice summary score from a 5 point scale to a 7 point scale, use this formula :

$$Y = 1.5 X - .5.$$

C. Combined growth need strength score : To obtain an overall estimate of growth need strength based on both "would like" and "job choice" data, first transform the "job choice" summary score to a 7 point scale (using the formula given above), and then average the "would like" and the transformed "job choice" summary scores.

# VI Motivating Potential Score

$$\begin{array}{rcl} \text{Motivating} & & \text{Skill} \quad \text{Task} \quad \text{Task signi-} \\ \text{Potential} & = & \text{Variety} + \text{Identity} + \text{ficance} \\ \text{Score (MPS)} & & \quad \quad \quad 3 \\ & & \text{X Autonomy} \quad \text{X} \quad \text{Feedback} \\ & & \quad \quad \quad \text{from the} \\ & & \quad \quad \quad \text{job} \end{array}$$

## ANALYSIS OF THE DATA :

Data were analyzed using different statistical techniques to derive various relationships and differences as stated earlier in this chapter.

A correlation matrix was used to derive various relationships, between the core characteristics of the job and critical Psychological states and work outcomes.

The relationship between public and private sector organizations in connection with JMP was obtained by using 'F' test.

"F" analysis was done to find out the effect of the two departments in both Public and Private sector organisations.

"F" - test and correlational analysis were computed with the help of the programmes of the packages.

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