

C H A P T E R - I V  
R E S E A R C H M E T H O D O L O G Y

SAMPLING : One hundred and seventy male executives (85 in each organisation) drawn from the middle levels of management from two organisations ( $O_1$  and  $O_2$ ) participated in the study. Mainly two strategies were adopted in drawing the sample for this study.

- (i) The sample range covered almost all the departments in both the organisations, randomly depending upon the strength of the department.
- (ii) Only middle level managers were considered for the study.

IDENTIFICATION OF MIDDLE LEVEL MANAGEMENT :

In general, Senior grades are divided into 8 executive grades (as indicated in the organisational chart). Out of them, this study has covered from Grade-II to Grade IV, respectively, consisting of Senior Engineer to Senior Manager. Their qualification may range from B.Es/B.Techs to M.E/M.Tech or a professional qualification with minimum 5 to 20 years of work experience. This segment is categorised as middle level in the study after considering the position, authority and responsibility level, span of experience etc. This above mentioned method of classification was also combined with the opinion of the management of the two organisations itself.

The departments like technical services, production, process, project, personnel and administration, accounts, store were taken into consideration for the research. As both organisations are fertilizer companies, the production departments covered two main sections, namely, Urea and Ammonia. In O<sub>1</sub> production department consists of four sections, i.e: Urea I and Urea II, Ammonia I and Ammonia II. No formal principle in drawing the sample was concentrate for the data collection. Mostly experienced and interested persons were taken into account to fill the Questionnaires. Less number of Managers were taken from departments like, store, bagging, Fire and Safety, etc. as these departments generally do not directly deal with the organisations objectives.

The managers atleast 6 years of experience in their respective organisations only were considered as the research subjects.

The size and the nature of the sample are given in Tables 1 to 4.

Table 1 :

Frequency distribution of subjects according to their work experience (in years) in the organisation J ,

Experience in the Organisation (Yrs)	Frequency	Percentage (%)
5	7	8
8	78	92
TOTAL	85	100

The above data shows that majority of the respondents belonged to the range of 8-10 yrs of experience in the same organisation. (As it can be noted that the 1st requirement of Organisation -1 was in the year 1982. Again Major recruitment held in the year 1983-84. So majority of subjects fall under the frequency range of 8 - 10 yrs. of experience in the organisation).

TABLE 2 :

Frequency distribution of the subjects according to their age groups of Organisation 1.

AGE	FREQUENCY	PERCENTAGE
30 - 35	6	7.0
36 - 40	25	29.0
41 - 45	32	38.0
46 - 50	12	14.0
51 - 55	10	12.0
TOTAL	85	100.0

The above table shows that though the subjects belonged to several age groups, the majority of them belonged to the age range of 36 - 45 years.

TABLE : 3

Frequency distribution of subjects according to their work experience (in yrs) in Organisation-2.

Experience in the Organisation (Yrs.)	Frequency	Percentage (%)
5 - 7	6	7
8 - 10	13	15
11 - 13	16	19
14 - 16	5	6
17 - 19	42	49
20 - 22	3	4
<b>TOTAL</b>	<b>85</b>	<b>100</b>

The above table shows that though the subjects belonged to several age groups, the majority of them belonged to the age range of 17-19 yrs. of experience in the same organisation.

TABLE : 4

Frequency distribution of the subjects according to their age groups of organisation 2.

AGE	FREQUENCY	PERCENTAGE
30 - 35	--	0
36 - 40	27	32
41 - 45	28	33
46 - 50	21	25
51 - 55	9	10
<b>TOTAL</b>	<b>85</b>	<b>100</b>

The table shows that though the subjects belonged to several age groups, the majority of them belonged to the age range of 36 - 45 years.

### PROCEDURE OF DATA COLLECTION

Before starting the regular process of data collection the researcher approached the Chief (General Manager) of the Personnel and Administration Departments in each Company through the head of the HRD (Human Resources Department) to seek their permission to conduct the research. After the requisite permission was obtained, the regular work started.

The head of the HRD department issued a circular to all the departmental heads requesting them to participate in the research. A Copy of the same circular was attached with each of the questionnaire bunch before circulating.

Having completed these formalities, the researcher then distributed the questionnaires among the middle level managers/executives (From Senior Engineer to Senior Manager and Plant Engineer to Additional Chief Executives in almost all the departments in the organisations. These officers were approached personally during the usual working hours within the respective organisations. The researcher made every attempt to convince them about the purpose of the study and the questionnaire in detail.

Then meeting with individual manager was arranged according to their convenience. Before giving the questionnaire to them, the researcher again assured them about the confidentiality of their responses indicating that the responses will be treated only globally not individually and the purpose was wholly academic. At that stage, any difficulty for example, words, sentences etc. were individually clarified. They were requested to fill the questionnaire within a reasonable time. Normally, the participants took around 3 to 4 days in filling the questionnaire at their desire. They were allowed to take the questionnaire home.

The same procedure was adopted in both the organisations. Then, the researcher collected questionnaires back from the respondents individually and profusely thanked them. A lot of cooperation was given to the researcher by the respondents in both the organisations.

Both their HRD departments took keen interest in completion of the project. About 6 months time was spent on Data Collection.

The present chapter describes the research methods for the analysis of the study. This study has been carried out in two of the organisations. The research site is narrated first which followed the description of the organisation sites.

#### RESEARCH SITE

The study was conducted in two different organisations located , (i) in the State of Gujarat and (ii) in the State of Orissa, India successively. The two of the organisations are of public sector-undertaking Fertilizer Producing Industries. A brief description of both the organisations :

(i) Organisation: I, Gujarat

(ii) Organisation: II, Orissa, is presented below:

The Indian Farmers Fertilizer Co-operative Limited (IFFCO), the one and the only co-operative in the Fertilizer Industry has developed Organisation-I, to the man the gaint plant in the Gujarat State.

#### THE PLANT FEATURES

Organisation in the two phases produces a total of 1.45 million tonnes Urea per annum. The main plant consists of two Ammonia Plants, each of 1350 MTD capacity and four Urea Plants each of 1100 MTD capacity.

## THE PLANT AT A GLANCE

- i. Installed Capacity : Urea 14,52,000 MT/Year  
(Plant Nutrient, 6,67,920 MT of Nitrogen/year).
- ii. Plant Capacity : Ammonia - 2 x 1350 T/day  
Urea - 2 x 1100 T/day
- Consultants : M/s KELLOG (U.S.A) and  
M/s FEDO (INDIA)
- iii. Power & Off Sites : M/s D.C.P.L., (INDIA)
- a. 3 Boilers (one standby) with capacity of 275 MT of steam/boiler/hr. by M/s Foster Wheeler,  
UNITED KINGDOM,
- b. 2 TG Sets with capacity of 15 MW each by M/s B.H.E.L,  
INDIA
- iv. Total Cost :
- |                  |                |
|------------------|----------------|
| Foreign Currency | 503.70 Crores  |
| Indian Currency  | 401.30 Crores  |
| Total =          | 905.00 Crores. |
- v. Total annual turnover Rs. 460/- crores
- vi. Retention Price Rs. 3,235/- tone
- vii. Foreign Exchange Saving Rs. 156/- crores
- viii. Help to increase Country's food grain production : 6 million/year

MILE STONES OF O<sub>1</sub>

a.	Project Completion	:	31.05.1985
b.	Plant Completion	:	26.11.1985
c.	Commercial Production	:	01.03.1986
d.	High Production achieved upto December 1989	:	Urea (Phase I and II) 5270/27.05.89  Ammonia (Phase I and II) 3108/10.05.98)
x.	Men in position	:	Officers        600 Workers        1900 ----- TOTAL           2500

The above informations may considered to be the mile stones of the organisation. Besides it may be noted that the Organisation has established new monthly production records in the year 1989-90 i.e. by producing Ammonia, 10,01,195 MT and Urea, 16,67,040 MT. As a result of its smooth performance this organisation is considered to be the best fertilizer Industry in India. Its aim is not to sail only but to train farmers by educating them to modern farming technology and use of it for optimum output.

The supporting facilities include Raw Water Storage, Water Pretreatment, DM Water Plant, Steam and Power Generation Plant, Instrument Air, Plant Air and Inert Gas Plant, Effluent Treatment Plant, Urea Storage, and Product Handling. The plants while on full production consume everyday 3.0 million cubic metres of Natural Gas, 25 million gallons of water and 6 MVA external power to produce 4400 MT of Urea.

Besides that this Organisation has set up a good Fire and Safety section with all modern equipments.

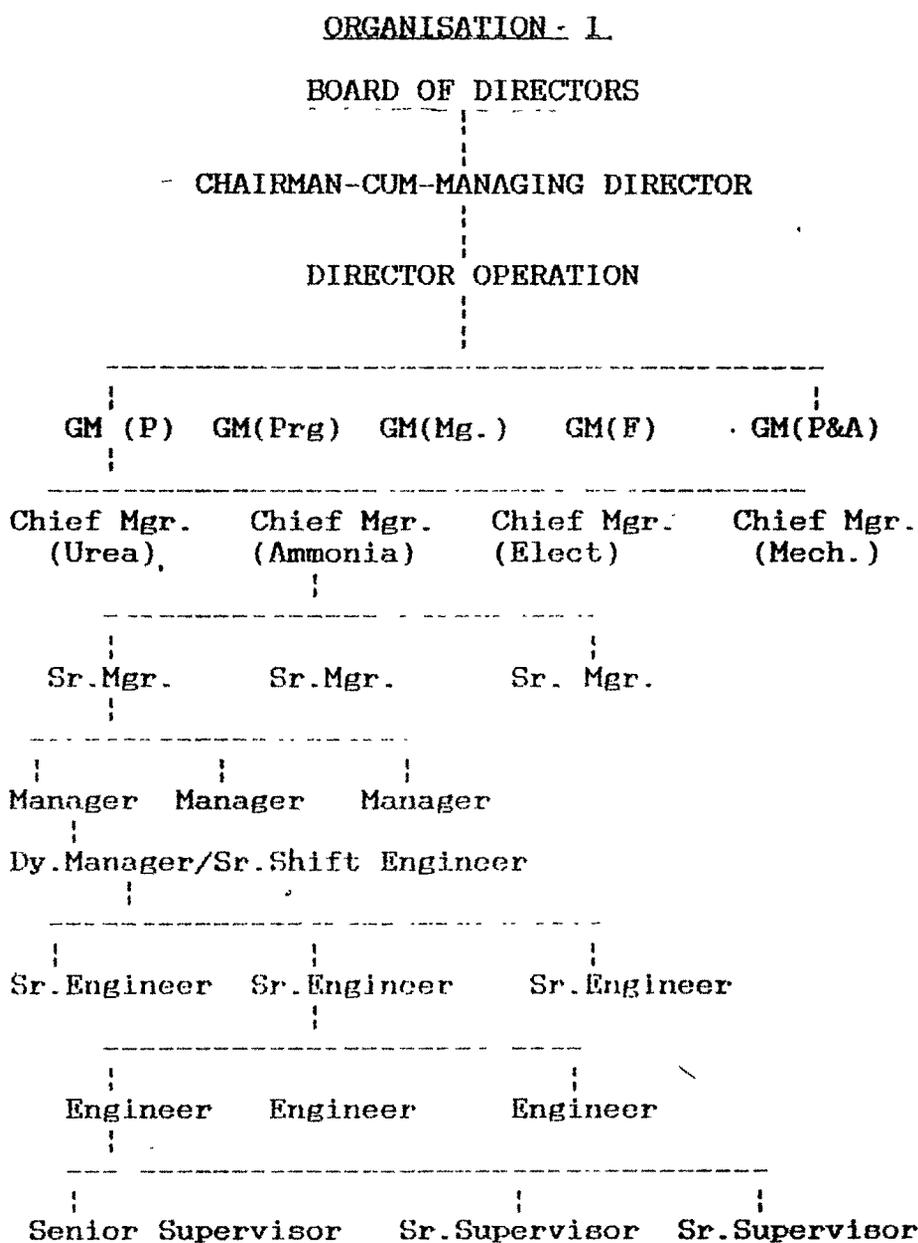
Keeping social obligation of environmental protection as one of the prime objectives, Organisation -I, envisaged a multi-approach for better environmental protection with total investment of Rs. 11/- crores. It includes Pollution Control Measures at sources, Effective Monitoring of Environment within complex and Forestry etc.

Other facilities : To provide technical and management training, a training centre has been setup which in the long run shall look after human resource development of O<sub>1</sub>. Other facilities include subsidised canteen, firstaid and full fledged security system inside the factory.

The organisation lives in the strength of cooperation between all functions. Besides the four phases of Production department, Power-Plant, Bagging Plant, Personnel and Administration department, Finance department, Purchase and Stores, Planning and Development, departments play their vital role in supporting and managing the resources of O<sub>1</sub> to achieve its objectives. The plant as a whole is headed by the Managing Director. This plant at Hazira is directed by the Operation Director as head. Besides that there are six (6) General Managers heading each departments.

Below GM's there are Chief and General Managers to manage the departmental functions. Then the middle level managers effectively functioning in the factory. The union activities are also well planned and constructive in the factory.

A pyramidal structure of employees is presented below for reference :



\*Same Organisation structure to be repeated in case of all Chief Managers.

To satisfy the basic needs of all its employees, it has constructed a self contained and modern township adjacent to factory with all facilities. The township contains Schools, Hospital, Guest House, Club, Post-Office, Marketing Complex, etc. Above all excellent facilities of communication is being provided in the township for employees to go to the nearby city.

As a whole all the above described factors leads O<sub>1</sub> as one of the best functioning and most successful fertilizer Industry in India. This study is conducted in the middle level management cadre of all most all the department.

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ORGANISATION- 2 (O<sub>2</sub>)

The Government of India started restructuring another biggest fertilizer complex in ORISSA in the year 1978. It is the largest Government of India Undertaking, Coal based fertilizer company in the eastern region. Its production started in the year 1980.

THE PLANT AT A GLANCE

1. Product : Urea 495,000 T/Year  
(Equivalent to 2,28,000 T Nitrogen).
2. Plant Capacity : 1500 T/day of Urea with  
900 T/day of Ammonia
3. Raw Materials :
  - Coal : 3000 T/day
  - For Process : 1700 T/day
  - For steam Generation : 1300 T/day
  - Water : 15 million gallons per day
  - Power (Including Captive Power 30 MW : 55 MW
  - Lime Stone : 52 t/day
4. Factory Area Including Colony Area : 902 Acres
5. Project Cost (Including Foreign exchange of 47 crores) : 223 Crores.
6. Foreign Collaborators :-
  - Gassification Plant : M/s Koppers, WG
  - Ractisol Plant : M/s Lurgi ,WG
  - Ammonia Synthesis Plant : M/s Technoexpert, Czechoslovakia
  - Urea Plant : M/s Technimont, Italy

## 7. Major Equipment Suppliers : (India Made Only)

M/s B.H.E.L., (Trichy)	:	Steam Generation Boilers
M/s B.H.P.V., (Vizag)	:	Pressure Vessels
M/s Mc Nally Bharat Engineering	:	Coal Preparation Plant
M/s Dynacraft Limited	:	Conveying Equipment
M/s Paharpur Cooling Tower	:	Cooling Towers

8. Men in Position	:	Technical	-	1167		
		Plus	:	Commercial	-	299
				TOTAL		1466

9. Officers	:	246
Workers	:	1220
TOTAL	:	1466

There is also a Heavy Water Plant setup by BARC within the same complex having production capacity of 62 tonnes of heavy water per year based on Synthesis Gas from Ammonia Plant. Besides that a material handling plant consists of two sub-sections. (i) The raw material handling i.e. Coal and Lime Stone handling, (ii) The product handling i.e. the Urea handling. This has been described separately in a chapter "Bagging Plant".

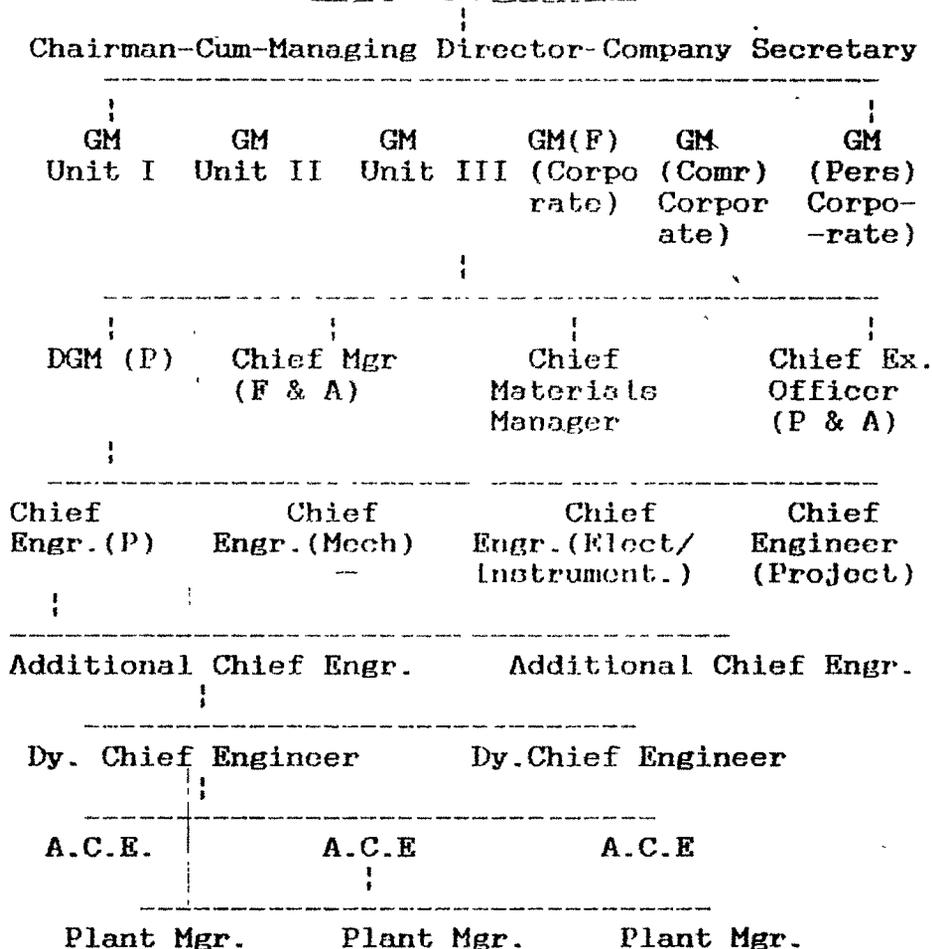
The South Eastern Coal Fields Limited (SECL) which is operating a number of coal reserves i.e. 800 million tonnes of uniform high quality non-cooking coal and the 'South Balanda Mines' has estimated 35 million tonnes are the source of coal for this plant.

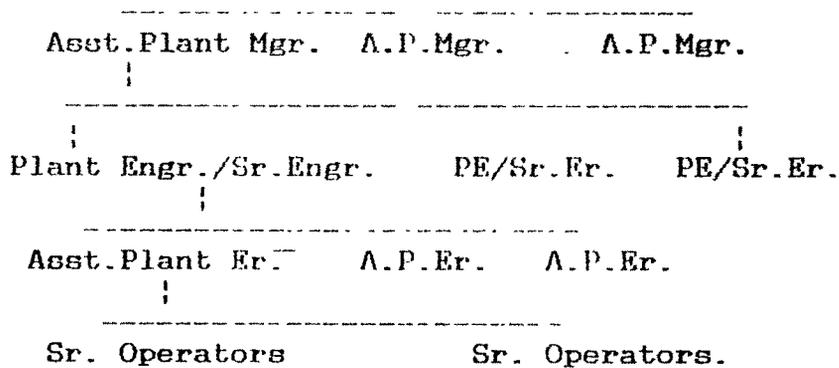
The famous River Brahmani is 11 KM away from the plant, which is the main source of water for the plant and the township. Power requirement of 55MW is met by ORRISA STATE ELECTRICITY BOARD from distribution grid of TALCHER THERMAL POWER STATION, which is near the Fertilizer Plant. The plant is well connected by broad gauge railway line to the Madras-Howrah trunk route and by an all weather road to the National Highway, (NH 05).

(A chart showing the administrative cadre of the plant attached here.)

### ORGANISATION - 2

#### BOARD OF DIRECTORS





\*Same organisation structure to be repeated in case of all Chief Engineers.

The O<sub>2</sub> lives on the strength of cooperation between all function. Personnel and Administration, Finance, Industrial Engineering, Purchase, Store, Planning and Development, over and above production departments play their vital role in supporting and managing the resources of O<sub>2</sub> to achieve its objectives.

To provide technical and management training, a full fledged training centre has been set up which in long run shall take up human resources development of O<sub>2</sub>. Other facilities include a subsidised canteen, first aid and full fledged fire and safety, security system inside the factory.

To satisfy the basic needs of all its employees it has constructed a self contained and modern township adjacent to factory with all facilities. The township contains schools, hospital, guest house, club, post office, marketing complex etc.

Besides all these above facilities, a lot of interference is being pressed from the workers' union. Even the Union heads sometimes threatens to some of the organisational heads to support their workers illegally. As a result, the factory with all resources is not running well. A lot of dissatisfaction lies between the middle level cadre in which this study is being done. So since 20 years (from its starting period) it is running in loss.

The below current-data can give a clear cut picture of the plant success and failure at a glance up to the year 01.02.1991.

#### PRODUCTION

	For the Month of February, 1991		For the year April '90 to Feb. '91	
	Ministry Target	Actual	Ministry	Actual
Urea	17,500/T	21,947/T	175,000/T	137,454/T
Ammo- -nia	10,700/T	13,486/T	106,700/T	841,543/T

## THE INSTRUMENTS/TOOLS

The following instruments were taken in order to ascertain the proposed variables enumerated in the objectives of the study. The Questionnaire booklet consisted of five different questionnaires. Questionnaire - 1 (Qr.1) consisted of items related to measures of the behavioural patterns of the respondents which is named as 'the Behavioural Fitness Inventory' (BFI). Questionnaire - 2 (Qr.2) consisted of items related to the organisational climate and named as 'Organisational Effectiveness Questionnaire' (OEQ). Questionnaire - 3 (Qr.3) is named as Managerial Behaviour Questionnaire (MBQ) which measures the leadership styles of the respondents. Questionnaire - 4 (Qr.4) is named as 'The Organisational Communication Questionnaire' (OCQ) which studies the communication systems in the organisation. Questionnaire - 5 (Qr.5) is named as 'The Communication Profile Questionnaire' (CPQ) which measures communication profiles in the organisation. The selection of the items from each of the Questionnaire was done by doing a 'Pilot-Study' in two of the similar natured consultancy firms in public sector. A total of 42 subjects were taken for the first phase of the study varying from Senior Engineers onwards in respect of the gradation.  $\chi^2$  - chi-square tests were conducted for the analysis of data.

On the basis of the findings, the items were selected for the final phase of the study. Items selection for the main study was taken into account in the case of each of the Questionnaire. The details about the Questionnaires are described serially.

#### I BEHAVIOURAL FITNESS INVENTORY :

This Questionnaire is named as 'The Behavioural Fitness Inventory' and was developed by Wayne Pace (1985). This is a sum total of 21 items measuring 6 dimensions to determine behavioural fitness of the respondent. Respondents are asked to rate each of the items on a '6' point scale, varying from 'A' as 'Strongly agree' (1 point) to 'F' as 'Strongly disagree' (6 point). The middle points are 'B' as 'moderately agree', C as 'slightly agree', 'D' as 'slightly disagree' and 'E' as 'moderately disagree'.

Behavioural fitness can be viewed as a measure of a person's ability to interact with people with vigour and pleasure and without undue arrogance, or extreme humility or self-depreciation.

Basic to good behavioural fitness -  
-are six variables :

1. RESPONSIBILITY OR APPRECIATIVE SELF DETERMINATION :

In behavioural terms this represents taking personal control of one's own reactions, being free from blaming own selves of others for the consequences in lives. Behaviourally fit individuals own their decisions and avoid defensive reactions. Item nos. 6, 16, and 18 are included under this dimension.

2. STRENGTH OR PURPOSEFUL DETERMINATION :

In behavioural terms this second dimension represents the ability to concentrate energy so as to avoid irrelevances and distractions. Item nos. 10, 14, 19 and 21 are included to measure strength characteristic.

3. FLEXIBILITY OR OPENESS TO NEW INFORMATION :

In behavioural terms, this dimension represents the ability to be versatile in interaction. A behaviourally fit person is able to give and take in interaction and to integrate a wide variety of new ideas all the time. This characteristic is measured in terms of four items, numbers 3, 5, 7 and 11.

## 4. IMAGE OR POSITIVE EGOCENTRISM :

In behavioural terms, a proper image in the proper actualization. We all need a regular programme of seeking and maintaining a balance between self-depreciation and extreme arrogance in order to be behaviourally fit. Item nos. 1, 4, and 8 are included in this dimension.

## 5. ENDURANCE OR INDEPENDENT PERSISTANCE :

In behavioural terms, this represents a commitment to pursue a steady course toward well-defined goals to hang in which things get tough. Three items i.e., 13, 15, and 17 are included to measure Endurance Characteristic.

## 6. RELAXATION OR CONFIDENT ACCEPTANCE :

This dimension represents the ability to return to a state of calmness after experiencing high levels of emotional strain or experiences of total inactivity or depression. Behaviourally fit people can maintain calmness in the face of extreme reactions of all types. Item nos. 2, 9, 12, and 20 are included in this dimension. A copy of the Questionnaire is attached in 367...

Out of 21 (twenty one) statements 6 are rated in terms of reverse scoring as these reveals negative qualities of the respondent.

These items are Nos. 18, which comes under dimension 1 i.e; 'Responsibility', No. 10, 14, 19 and 21 which comes under total items of strength (dimension) and No. 17 which comes under Endurance (D5). The rest of the items are given positive scoring.

## II. THE ORGANISATIONAL EFFECTIVENESS

### QUESTIONNAIRE : (O.E.Q)

The scale was developed by Daftuar in the year 1985. This scale measures nine (9) dimensions of organisational effectiveness. All these dimensions are those criteria of organisational effectiveness which has been referred to as 'Soft-Criteria by Smith (1978). i.e., they measure socio-psychological dimensions of effectiveness. This scale can be administered at any level of organisational sample if language is not a problem. Since Cronbach's Alpha (L) co-efficient reliability indices have been worked out independently for all individual dimensions (separately), researchers can use all or any number of dimensions of their choice. Cluster analysis has yielded a cluster of 5 dimensions, so, the mean (or total) value for all these five dimensions can be used as an index of effectiveness.

The dimensions' item number and alpha (L) values are as under :

Dimensions	Item Nos	Alpha (L) Values
1. Consensus	1 to 3	.56
2. Legitimation	4 to 7	.98
3. Need for Independence	8 to 10	.50
4. Self Control	11 to 12	.69
5. Job Involvement	13 to 17	.99
6. Innovation	18 to 19	.93
7. Organisational Commitment	20 to 23	.51
8. Organisational Attachment	24 to 27	.93
9. Job Satisfaction	28 to 44	.95

The cluster of five dimensions include consensus, legitimation, self control, organisational commitment and organisational attachment.

The 5 point scores ranging from 1 to 5 (always) was used in all sub-scales.

### III. MANAGERIAL BEHAVIOUR QUESTIONNAIRE (MBQ)

This scale was developed by Daftuar in the year 1985. This is considered to be an effective tool for measuring major leadership styles in the organisation. It is a sum total of 32 items measuring 6 (six dimensions) to determine leadership qualities of the respondents.

The respondents are asked to read each of the statements carefully and judge how true or false the statement is for their immediate superior. The selection of the choice of the items are rated on a 5 point scale, varying from 5 for 'Quite true' to 1 for Quite false. Again, respondents are asked to put the mark (1 to 5) on the small block line given on the left side of each item. The total 32 items are easy to understand statements related to work environment. Managerial behaviour can be viewed as a measure of person's leadership ability to interact with the subordinates effectively. The six leadership styles and the concerned numbers of items of each of the dimensions are as follows :

1. ECLECTIC STYLE : This style represents a combination of Authoritative, Bureaucratic, A, p+N and Nurturant task styles of leadership. This in other words can be known as mixed style or A, p+N style. The Eclectic leader keeps the final authority with himself and also shows warm behaviour towards subordinates to bring up their ability for work. Item nos. 2, 5, 6, 13, 14, 16, 24, 29, and 32 are included under this leadership style.

2. INTER-ACTION ORIENTED STYLE : This leader is a friend type, caring and receptive type who believes that Organisational prosperity depends upon good friendly support and persuasion toward subordinates.

Item nos. 11 and 19 of the Questionnaire included under this style.

3. AUTHORITATIVE-NURTURANT STYLE : As the name denotes, the leader gives importance to power, prestige, appreciates loyalty and gratefulness on the part of subordinates. He gives less importance to work. Item no. 12 is included under this style.
4. BUREAUCRATIC STYLE : The leader enhances bureaucratic relationship towards subordinates and believes that interpersonal troubles are the root cause of having relationship with the subordinates, Item nos. 22 and 18 are included for measuring bureaucratic leadership criteria.
5. BUREAUCRATIC-TASK ORIENTED STYLE : The bureaucratic - task oriented leader takes special care towards work by following standard rules and regulations in the Organisational matters. Item nos. 1 and 27 are included for measuring this leadership criteria.
6. TASK-ORIENTED STYLE : As the name denotes the task oriented leader always keeps track towards work progress and appreciates hard working persons only. The utmost attitudes towards work of the leader is measured in terms of one item only i.e; No. 8.

Above all, the statements are easy to understand type as a result the respondents gave 100% response to their instruments in the Questionnaire bunch. A copy of the Questionnaire is given in page no. 372.....

#### IV. THE ORGANISATIONAL COMMUNICATION -

##### QUESTIONNAIRE : (OCQ)

The scale was authored by Karlene H. Roberts and Charles A. O'Reilly III (1974). In an extensive study of literature, Roberts and O'Reilly (1974) developed the O.C.Q in response to the realization that there had been no systematic development of instrumentation to measure communication variables in organisations and the Author intended this as the beginning for the creation of a standardised questionnaire that could be used to compare communication across organisations.

Based on a literature review Roberts and O'Reilly created 189 Likert-type items to assess respondents-perceptions of the communication dimensions. Initially the pool were administered to 70 graduate students all of whom had prior work experience and based their responses on such experience.

Items were retained that had high inter co-rrelations with other items measuring the same facets and low inter co-rrelations with the rest of the item pool. A 60 item Questionnaire consisting of 51 communication and 9 non-communication items. This version was administered to 86 mental health workers, at all job levels in a large medical center. Their responses were subjected to a V-type cluster analysis to further reduce the number of 98 questionnaire items and the nine non-communication items were subjected first to a principal components analysis and then varimax rotation from which three separate factors emerged namely, Trust, Perceived influence and Mobility Aspiration. Based on these analysis, the total instrument was reduced to 35 items, consisting of 10 multi item indexes and 6 single questions.

Seven samples, with a total number of more than 1200 respondents were used to develop a 35 item questionnaire measuring 16 dimensions of communication utilizing for the most part, a 7 point scale demographics were included.

The final dimensions (scales) were as follows :

1. Trust
2. Influence
3. Mobility
4. Desire for interaction
5. Directionality upward
6. Directionality downward
7. Directionality lateral
8. Accuracy
9. Summarization
10. Gate Keeping
11. Over load
12. Satisfaction
13. Written Medium
14. Face to Face Medium
15. Telephone Medium
16. Other medium.

Noteworthy is the fact that the author's first included (1) communication purpose (2) communication content (3) Importance and (4) Speed, but later discarded these dimensions due to the difficulty respondents had answering items relevant to that concepts. Also noteworthy is that items were developed to assess these no. communication variables : (1) Trust in superior (2) Perceived influence of the superior and (3) respondent mobility aspiration.

These variables were included on the basis that these elements had been separately shown to influence individual communication in organisations. (Roberts and O'Reilly p.321). The Questionnaire therefore not only secures a report on the nature of communications a process but also as to certain variables which have been shown to influence communication.

Differences among the means and standard deviations across the seven sample ( $n = 1218$ ) revealed that within group variance was less than between group variance, thereby suggesting that it is feasible to discriminate among organisations using the 16 communication dimensions. (Robert and O'Reilly, 1974 p. 322).

Reliability Assessment : Two types of Reliability Assessment support to OCQ instrument :

- (i) Test-retest reliability
- (ii) Cronbach's co-efficient Alpha.

(i) Test-Retest Reliability : The 35 version of the instrument was administered twice to 24 graduate students with previous job experience and to 42 managers. In the student sample, 8 of the 16 dimensions had a test-retest co-rrelation greater than .7; and for the manager sample, 8 of the 16 dimensions had a test-retest co-rrelation greater than .7 with two other dimensions showing .69.

Upward directionality with .84 for students and .87 for managers was the highest correlations, while low test-retest correlations were obtained for summarization for both students (.35) and managers (.37). Face to Face modality for managers (.41), and Telephone Modality for students (.39).

Muchinsky (1977) studied the co-efficient alpha r of the Roberts and O'Reilly questionnaire in respect to the multi item dimensions, and found results similar to that of Roberts and O'Reilly.

In Yeager's (1978) examination of three OCQ scales (trust in superior, supervisory influence, and desire for promotion), he compared the Cronbach alpha's reported in Robert's and O'Reilly's report, Muchinsky's report and his own replication (n = 2700), finding small differences. Yeager used Cronbach Alpha on the Trust scale (3 items), but Pearson correlations on the other two scales (2 items each) stating that "alpha is inappropriate for scales containing fewer than 3 items (p.1322).

#### Validity Assessment :

Roberts and O'Reilly applied the following three types of validity assessment to their instrument : (i) face validity, (ii) construct validity and (iii) Convergent validity.

(1) Face Validity : During the item development period , respondents indicated which questions were confusing or not

differentiable in their minds. As a consequence, questions attempting to measure task versus social information, speed of transmission, and purpose of the commitment were eliminated (Roberts and O'Reilly, 1974, p.324).

- ii. Construct Validity : Roberts and O'Reilly (1974, p. 323) note that evidence for the construct validity of the 10 dimensions with multiple items is provided by the results of a cluster analysis and confirmed the notion that even similar items such as trust, influence can be successfully differentiated from each other, dimensions are also differentiable (p.324). Cluster analysis results show that inter-item correlations among items within any index in the instrument are higher than are the correlations among items forming different indices. This provides some evidence for the construct validity of the ten dimensions with multiple items (Roberts and O'Reilly, 1973, p.14).

The 1974 article in the journal of Applied Psychology (p.323) still with 16 dimensions, 35 items and no demographics, noted that a revision of the Questionnaire includes all items scored on 7 point scales, except for the three dimensions of Directionality Upward, Directionality - Downward and Directionality lateral which use 10 point scale.

But | for this present study 8 dimensions are taken into account and they are as follows with the concerned number of items : (1) Trust : This dimension includes 3 items i.e. no. 1,2, and 3. It deals with how free do you feel to discuss with your superior the problems and difficulties you have in your job without jeopardizing your position (Completely free to very cautious).

(2) Influence (2) items : In general, how much do you feel that your immediate superior can do to further your career in this organisation ? (much to very little).

(3) Mobility (2 items) : How important is it for you to progress upward in your present organisation ? (not important to very important).

4. Desire for interaction (3 items) : How desirable do you feel it is in your organisation to be in contact frequently with others at the same job level ? (very desirable to completely undesirable).

5. Directionality Upward (3 items) : While working what percentage of the time do you spend in contact with the immediate Superior ? (fill in %).

6. Directionality Downward (3 items) : While working what % of the time do you spend with subordinates (fill in %).

7. Directionality Lateral (3 items) : While working, what % of the time do you spend in contact with others at the same level ? (fill in %).

8. Accuracy (3 items) : When receiving information from the sources listed below (superior, subordinates, peers), how accurate would you estimate it usually is ? (Completely accurate to completely inaccurate).

9. Summarization (3 items) : When transmitting information to your immediate superiors, how often do you summarize by emphasizing aspects that are important and minimizing those aspects that are un-important ? (always to never).

10. Gatekeeping (3 items) : Of the total amount of information you receive at work, how much do you pass on to your immediate superior (all to none).

All the aforementioned dimensions measured in a five (5) point -scale. Some items were scrutinised in the main study in the Questionnaire depending on the results of the preliminary study.

The coefficient alpha for the OCQ is the range of .53 to .84. The dissertations by Anderson (1980) and Mier (1979) provided applications of this instrument. Anderson studied the relationship between job design and worker satisfaction performance, giving attention to the moderating effect of work environment including communication accuracy and communication openness.

Above all, this OCQ instrument considered to be the widely popular media to measure Organisational Communication today.

V. COMMUNICATION PROFILE QUESTIONNAIRE (CPQ) :

This scale was authored by Brent D. Peterson and R. Wayne Pace (1985). This instrument was an approach for surveying Instrument was an approach for surveying Organisation wide communication profile variables.

This scale consisted of 60 items in the original version which was used in the preliminary phase of the present study. It possess 7 dimensions to measure total picture of communication profile. Due to item wise difficulty faced by the subjects in the first phase of study, 32 items were deleted from the Original version & 28 items were considered for the final study. The selection of the items are rated on a 5-point scale varying from 5 for 'Quite True' to 1 for 'Quite False'. The subjects were asked to put the mark (1 to 5) on the small blank line given on the right side of each item. The following dimensions were retained :

1. TRUST : The dimension included two items (No.1 and 2). It dealt with the amount of trust the supervisors have in their subordinates and viceversa.
2. SATISFACTION WITH CHANCES OF PROMOTION : It included of three items (No.4, 6 and 7). These items were dealing with the chances of promotion aspects of the supervisors and subordinates in the Organisation.

3. BENEFICIAL ASPECTS : This dimension consisted of two items (No. 5 and 8). How much information all the personnel received in the Organisation that enhanced their abilities toward job ?.
4. LISTENING : As the name denotes, How much importance given by the supervisors towards continuous listening with open minds to suggestions from the subordinates, discussed here in the form of two items (No. 3 and 9).
5. WRITTEN PUBLICATION : Item numbers, 10, 11 and 12 in the instrument dealt with this aspect. The dimension discussed about the company publications that helped the organisation toward further development.
6. AMOUNT OF INFORMATION RECEIVED : A total eight items from No. 13 to 20, were included under this dimension. The statements were dealing with the desirable sources of informations received by the personnel in the Organisation. The subjects were asked to score the items on a 5-point scale, i.e., 'very little' (1 point) to 'very great' (5 points). The middle points were followed as 'little', 'some' and 'Great' points. The sources of informations were expected for the subjects about, their immediate supervisor,

co-workers, the grapevines, the manager of their immediate supervisor, Top management, subordinates (if applicable), Written Communication (News, letters, memos etc.), and Electronic Communications (Mail, Video, Telephone etc.). This variable for each subject was counted basing on the ranking of all these eight sources.

7. AMOUNT OF INFORMATION WANT TO RECEIVE :

As that of the above dimension (No.6), this also included 8 items. (From item No. 21 to 28) in the scale. The eight possible sources of the dimension included "their immediate supervisor, co-workers, colleagues in their own unit, the grapevines, the manager of their immediate supervisor, Top management, Subordinates (if applicable), Written Communications (news, letters, memos, etc.) Electronic Communications (Mail, Video, Telephone etc.). The scoring points were same as that of the dimension 6 (Amount of information received) of the instrument.

Above all, this CPQ questionnaire can be accepted as the popular media to measure Organisation wide communication profiles today.