

CHAPTER 4

METHODOLOGY

4.1 Economic and Accounting Profile of India

Before going for specific methods applied in this study it is very much relevant to give a brief sketch of economic and accounting profile of India in which the study has been conducted. Economic environment relates to accounting as a prelude to understanding and appreciation of the relevant accounting and employee issues.

There are a number of ways of describing the environment of accounting in a country. Such descriptions could include those typical or indigenous factors which influences the nature of accounting in a country, that is those relating to issues within the country in terms of legal and regulatory framework, the stage of economic development, political structure and ideology, economic systems and the historical origins of accounting systems. They could also relate to the external environmental variables in terms of the impact of transnational enterprises, international accounting firms, international accounting standards as well as regional bodies or the accounting system of a country (Malgwi, 1993: p.71). The accounting profile of a country could be said to be the set of institutions, mechanisms and establishments connected with accounting education, training principles and practices; disclosure as well as regulations. Though the main focus of this research is financial accounting and other information to employees in India, it can not be separated from other dimensions which may become relevant concerning the origin, growth and systems of financial disclosure regulation and practices in the country.

4.1.1 Economic Overview

India is a large Asian country with a population of 932 million and a growth rate of 1.75 (1996). It got independence on 15 August 1947 from British rule. During post independence periods its economy was state controlled to some extent. Which is liberalised from 1991.

In this country, literacy rate is 52% (1991 census), population density 273 per square kilo meter, total work force 37.5% of total population of which 52% male and 22% female. Employment in 1993-94 was (in million) male 244.12, female 87.88, total 332.0 with a growth rate of 2.11, 2.06 and 2.10. Unemployment rates are male 5.91, female 6.33 and total 6.03 of total work force (Labour Statistics, 1997). Some other economic data, stock market indicators and India's ranking in the world are presented in the following tables:

Table - 1

Economic Data: India's Ranking in the World

| Items | World | India | India's Rank |
|--------------------------------------|--------|-------|--------------|
| General | | | |
| Areas (Mn km ²) | 135.5 | 3.3 | 7 |
| Population (Mn) | 5,601 | 900 | 2 |
| GDP (US \$ bn) | 25,223 | 294 | 16 |
| Value added in agri (US \$ bn) | n.a. | 70.7 | 4 |
| Value added in mfg. (US \$ bn) | n.a. | 41.6 | 19 |
| Electricity generation (bn kwh) | 12,028 | 301 | 8 |
| Exports (US \$ bn) | 6,276 | 35 | 30 |
| Agriculture & Allied | | | |
| Arable land (Mn hectares) | 1,448 | 170 | 2 |
| Irrigated areas " | 248 | 48 | 2 |
| Tractors in use(Mn) | 25.7 | 1.2 | 7 |
| Fertilizer consumption (Mn tons) | 72.8 | 8.8 | 3 |
| Cattle population (Mn) | 1,288 | 193 | 1 |
| Production | | | |
| Rice (Mn tons) | 535 | 118 | 2 |
| Wheat " | 528 | 59 | 3 |
| Cotton " | 18.4 | 2.3 | 3 |
| Tobacco " | 6.5 | .5 | 3 |
| Tea " | 2.6 | .7 | 1 |
| Potato " | 265 | 15 | 6 |
| Milk " | 506.8 | 61.2 | 2 |
| Butter and Ghee " | 6.7 | 1.2 | 1 |
| Eggs " | 39.4 | 1.5 | 5 |
| Sugar " | 110 | 10.6 | 2 |
| Cement " | 1,148 | 50 | 5 |
| Iron ore " | 1039 | 62.5 | 6 |
| Transport & Communication | | | |
| Rly passenger km (bn) | n.a. | 300 | 3 |
| Rly freight ton (bn) | n.a. | 275 | 4 |
| Social Statistics | | | |
| Pupils at first level edu. (Mn) | 622.1 | 108.2 | 2 |
| Scienti. & tech. manpower (Mn) | 111 | 3.1 | 10 |
| Radio receiver (Mn) | 1,940 | 72 | 4 |
| TV receiver (Mn) | 855 | 36.5 | 6 |
| Long films production. (no.) | 4,615 | 838 | 1 |
| Cinema houses ('000) | 252 | 13.3 | 3 |

Source: Statistical Profile of Indian Economy, The Stock Exchange Official Directory, 1997, 6/4210, p.161.

Table - 2

Selected Stock Market Indicators

| Countries | Listed Companies | | Market Capitalisation | | Price Earning | Dividend |
|-------------------------|------------------|--------|-----------------------|-------|---------------|----------|
| | | | US \$ bn | | Ratio | Yield |
| | 1994 | 1983 | 1994 | 1983 | 1994 | 1993 |
| Developed Market | | | | | | |
| USA | 7,770 | 7,722 | 5,082 | 1,898 | 17 | 2.9 |
| Japan | 2,205 | 1,789 | 3,720 | 565 | 97 | 0.7 |
| UK | 2,070 | 2,217 | 1,210 | 226 | 15 | 4.2 |
| France | 459 | 518 | 451 | 38 | 16 | 3.5 |
| Germany | 417 | 442 | 470 | 83 | 14 | 3.9 |
| Emerging Market | | | | | | |
| India | 7,000 | 3,118 | 127 | 7 | 27 | 1.0 |
| Pakistan | 724 | 327 | 12 | 1 | 23 | 1.6 |
| Korea | 699 | 328 | 192 | 4 | 34 | 4.0 |
| Brazil | 544 | 505 | 189 | 15 | 13 | 0.7 |
| Malaysia | 478 | 204 | 199 | 23 | 29 | 1.9 |
| Thailand | 389 | 88 | 131 | 1 | 21 | 2.0 |
| Mexico | 206 | 163 | 130 | 3 | 17 | 1.8 |
| Philippines | 189 | 208 | 55 | 1 | 31 | 0.4 |
| World total | 36,176 | 23,782 | 15,186 | 3,384 | 23 | 2.4 |

Source: Statistical Profile of Indian Economy, The Stock Exchange Official Directory, 1997, p. 164

4.1.2 Accounting Information Disclosure: Indian Perspective

In India corporate financial reporting practices can be traced from the middle of the 18th century. After East India company chartered by Queen Elizabeth in 1760 (Pradhan, 1992 in Gupta, 1995), the Accounting profession was fully influenced by the British. The development of corporate reporting can be seen from two stages such as pre-independence period and post independence period. During the last 40 years, a great deal of improvement has taken place in the content, style and quality of the corporate reporting largely due to legal and regulatory measures introduced by the Government of India and influenced by global development, by the professional bodies like ICA, ICWAI and also due to voluntary disclosure practices by Indian companies. Various amendments have been brought in the companies Act, each with a view to strengthen reporting and procedural aspects of the law.

The pre-independence period saw some major development in the accounting field. In 1844, the British Joint Stock Companies Act was passed to regulate and monitor the corporate accounting System and this Act was replaced by Indian Companies Act 1866, and was further amended in 1882. Subsequently, Companies Act 1913 was framed and it replaced the Companies Act 1882 and the amendment of the Act in 1887, 1900 and 1910. The Indian Companies Act 1913 broadly emphasized the need for company to keep proper books of accounts, to prepare the balance sheet at least once a year and an interval of not more than 15 months, provided for audit of the accounts, required the arrangement of the balance sheet in a particular order and required the auditor to report as to whether the balance sheet exhibited a true and fair view of the state of the company's affairs as at the year end.

In post-independence period, significant events took place in the history of the corporate reporting system. The first such development was the establishment of the Institute of Chartered Accountants of India, by passing Chartered Accountants Act 1949. Since then the ICAI played a vital role in designing and regulating the complete accounting system of corporate entities in India. The ICAI has promulgated various accounting standards which have been made mandatory for the corporate entities and have assumed the premier role of maintaining and regulation of audit profession amongst its members. A significant

development in the corporate history came in 1956, when the previous companies Act, 1913, was replaced by Indian Companies Act 1956 (Gower, 1969; in Gupta, 1995).

The Companies Act 1956, very elaborately laid down the legislation in respect of promotion, formation, control and management, accounts and audit and winding up of the company. In 1977, the accounting standards board was set up by ICAI to harmonize the diverse accounting policies and practices in India on the basis of the applicable laws, customs, usage and environment. In 1978, the Government of India appointed Sachar Committee to report on Companies Act and MRTP Act (Ministry of Law, 1978). The committee recommended some measures on social reporting and disclosure of accounting information. Along with the Companies Act, various other Acts like Income Tax Act 1961, Securities Exchange Act, 1913, as well as setting up of SEBI etc. were also formulated to regulate and monitor corporate reporting and performance achievement of the company (Gupta, 1995).

4.2 Variables Studied

To attain the objectives of the study, following variables have been examined during the investigation.

4.2.1 Independent variables

- a. Types of organisations: private and public;
- b. Levels of employees: workers, trade union leaders and managers;
- c. Demographic variables: age, experience, education, sex and status;
- d. Employee reports: receiver and non-receiver, producer and non-producer; and
- e. Size of company: small and large (in terms of number of employees).

4.2.2 Dependent variables

- a. Employee job satisfaction;
- b. Industrial disputes;
- c. Employee turnover;
- d. Productivity;
- e. Profitability;
- f. Growth rate; and
- g. Labour costs.

In some cases same variable is considered as dependent and independent variable in different situations.

4.3 Sampling

The study has been conducted among employees and companies in India. Therefore, samples are selected from both employees and companies. For the employee samples, total 210 employees are randomly selected from 50 companies located at different regions of India and from different industry categories. The samples of employees cover 100 workers, 50 trade leaders and 60 managers obtained from private and public sector and small and large companies.

Similarly, for the company samples, 60 companies are selected from private and public sectors covering different regions and industry categories. Here also small and large companies are included.

Both purposive and random sampling techniques were applied in collecting data. It may be mentioned here that the selected samples were termed as '*subjects*' through out the entire presentation.

Details of sample distributions are given below:

Figure - 1:
Distribution of Employees by Levels

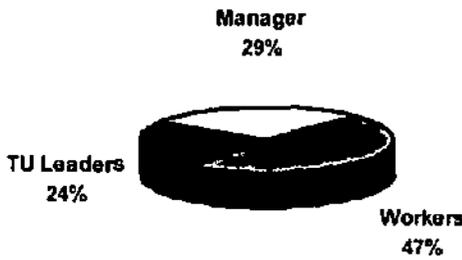


Table - 3
Employee Sample Distribution According to Type of Organisation and Levels

| Levels of employees | Types of organisations | | Total (%) |
|---------------------|------------------------|------------|------------|
| | Private (%) | Public (%) | |
| Workers | 56 (56.0) | 44 (44.0) | 100 (47.6) |
| Trade union leaders | 34 (68.0) | 16 (32.0) | 50 (23.8) |
| Managers | 39 (65.0) | 21 (35.0) | 60 (28.6) |
| Total | 129 (61.4) | 81 (38.6) | 210(100.0) |

From the figure - 1 and table - 3 it is evident that among the sample employees, 47% workers, 24% trade union leaders and 29% managers are included.

Table-4

Distribution of Employees According to Sex

| Sex | Private sector(%) | Public sector(%) | Total (%) |
|--------|-------------------|------------------|-------------|
| Male | 120 (93.0) | 77 (95.1) | 197(93.8) |
| Female | 9 (7.0) | 4 (4.9) | 13(6.2) |
| Total | 129 (61.4) | 81 (38.6) | 210 (100.0) |

Among the respondents: private sector employees 93% male and 7% female. Similarly among public sector employees 95.1% male and 4.9% female. Among the workers 89% male and 11% female, and among managers only 3.3% female. No female trade union leader was found to take interview or fill in questionnaire. It is also notable that female employees in Indian companies are very small in number and they are very much reluctant to pay interview or fill in questionnaire.

Table - 5

Distribution of Educational Levels of the Subjects

| Levels of Education | Levels of employees | | | Total (%) |
|---------------------|---------------------|----------------|-------------|-------------|
| | Workers (%) | TU Leaders (%) | Managers(%) | |
| Low - Secondary | 37 (64.9) | 20 (35.1) | 0 (0.0) | 57 (27.1) |
| Hi-Secondary | 26 (66.6) | 11 (28.2) | 2 (5.1) | 39 (18.6) |
| Graduates | 35 (37.6) | 17 (18.3) | 41 (44.1) | 93 (44.3) |
| Masters | 2 (9.5) | 2 (9.5) | 17 (81.0) | 21 (10.0) |
| Total | 100 (47.6) | 50 (23.8) | 60 (28.6) | 210 (100.0) |

It may be observed from the table that educational level is higher among managers (81% master degree holder) and lower among workers (65% up to secondary education). Among all the employees, majority is graduate (44.3%).

Table - 6

Educational Levels of Employees According to Types of Organisations

| Educational level | Private (%) | Public (%) | Total (%) |
|-------------------|-------------|------------|-------------|
| Up to Secondary | 44 (34.1) | 13 (16.1) | 57 (27.1) |
| Hi-Secondary | 27 (20.9) | 12 (12.8) | 39 (18.6) |
| Graduates | 41 (31.8) | 52 (64.2) | 93 (44.3) |
| Masters | 17 (13.2) | 4 (4.9) | 21 (10.0) |
| Total | 129 (61.4) | 81 (38.6) | 210 (100.0) |

Table - 7

Mean, Median, S.D. and Range of Age and Experience of the Respondents by Their Levels

| Levels of employees | Statistics | Age (in years) | Experience(in years) |
|---------------------|------------|----------------|----------------------|
| Workers | Range | 21-58 | 1-37 |
| | Mean | 40.63 | 16.64 |
| | Median | 40.00 | 16.00 |
| | S.D. | 9.80 | 10.32 |
| Trade Union Leader | Range | 30-58 | 6-36 |
| | Mean | 44.40 | 20.32 |
| | Median | 44.00 | 18.0 |
| | S.D. | 7.57 | 8.87 |
| Managers | Range | 23-59 | 1-37 |
| | Mean | 43.25 | 15.10 |
| | Median | 43.50 | 13.0 |
| | S.D. | 9.82 | 10.84 |
| Total | Range | 21-59 | 1-37 |
| | Mean | 42.28 | 17.08 |
| | Median | 42.00 | 17.00 |
| | S.D. | 9.42 | 10.29 |

It is observed from the above table that workers are younger in age and experience, trade union leaders are comparatively older.

Distribution of sample companies.

Table-8

Number of Employees of Sample Companies by Types of Organisations

| Class interval | Private (%) | Public (%) | Total (%) |
|----------------|-------------|------------|------------|
| Up to 500 | 10 (100.0) | 0 (0.0) | 10 (16.7) |
| 501 - 5000 | 19 (63.3) | 11 (36.7) | 30 (50.0) |
| 5001 - 10000 | 9 (90.0) | 1 (10.0) | 10 (16.7) |
| 10001 - Above | 2 (20.0) | 8 (80.0) | 10 (16.7) |
| Total | 40 (66.7) | 20 (33.3) | 60 (100.0) |

From the table it is evident that 67% companies are selected from private sector and 33% companies selected from public sectors. Half of the selected companies have employee size 501 - 5000.

Figure - 2 :

Location of Sample Companies

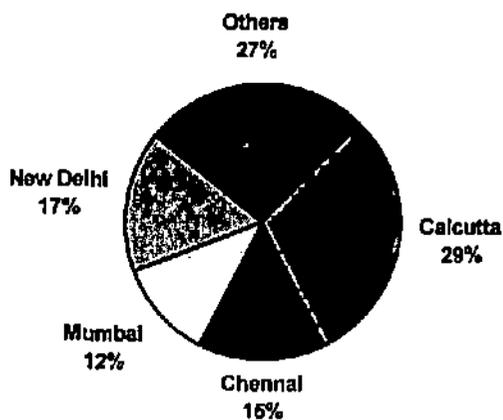


Table - 9

Location of Sample Companies by Types of Organisations

| Location | Private (%) | Public (%) | Total (%) |
|-----------|-------------|------------|-----------|
| Calcutta | 17 (94.4) | 1 (5.7) | 18 (30.0) |
| Chennai | 8 (88.9) | 1 (11.1) | 9 (15.0) |
| Mumbai | 5 (71.4) | 2 (28.6) | 7 (11.7) |
| New Delhi | 1 (10.0) | 9 (90.0) | 10 (16.7) |
| Others* | 9 (56.3) | 7 (43.8) | 16 (26.7) |
| Total | 40 (66.7) | 20 (33.3) | 60 (100) |

* Others include: Bangalore, Durgapur, Siliguri, Guwahati, Lucknow, Secundrabad, Gujrat and Bhubaneswar.

It is observed from figure-2 and table-9 that highest 30% companies are selected from Calcutta and lowest 12% from Mumbai. Among public sector companies, highest number selected from New Delhi.

Table - 10

Distribution of Industry Category of the Sample Company

| Industry Category | Frequency | Percentage |
|------------------------------|-----------|------------|
| Agrobased | 2 | 3.3 |
| Financial Institution | 4 | 6.7 |
| Chemical and Pharmaceutical | 6 | 10.0 |
| Consultancy and Construction | 3 | 5.0 |
| Consumer Goods | 4 | 6.7 |
| Engineering | 11 | 18.3 |
| Fertilizer | 1 | 1.7 |
| Gems and jewellery | 1 | 1.7 |
| Jute | 1 | 1.7 |
| Others | 13 | 21.7 |
| Power | 3 | 5.0 |
| Steel | 5 | 8.3 |
| Tea | 2 | 3.3 |
| Textile | 1 | 1.7 |
| Transport and tourism | 3 | 5.0 |
| Total | 60 | 100.0 |

It is seen from the table that maximum number of companies have been taken from others category and then Engineering, and lowest number from jute, textile, jewellery and fertilizer.

Table - 11

Mean, Median, S.D. and Range of Some Variables (N=60)

| Variables | Mean | Median | S.D. | Min. | Max. |
|---------------------|-------|--------|-------|--------|--------|
| Industrial Disputes | .84 | .00 | 1.49 | .00 | 6.00 |
| Employee Turnover | 1.90 | 1.25 | 2.15 | .00 | 8.00 |
| Productivity | 3.08 | 2.40 | 2.55 | -1.10 | 16.40 |
| Profitability | 11.08 | 12.31 | 14.19 | -59.14 | 40.94 |
| Growth Rate | 15.05 | 12.46 | 26.07 | -57.26 | 130.61 |
| Labour cost | 9.93 | 9.53 | 5.40 | .70 | 23.91 |

4.4 Measuring Instruments

The information collected for the study can be grouped into the following categories:

- (1) Demographic variables of the respondents such as age, experience, education, sex and levels.
- (2) Company characteristics such as number of employees, type of organisation, location and industry category.
- (3) Attitude of employee and company respondents on information disclosure, types of information, method of reporting, impact of employee reporting on employee motivation, industrial relations, productivity, employee commitment, job satisfaction and cost consciousness, turnover, absenteeism, grievance, resistance to change and industrial disputes.
- (4) Employees' and companies' opinion on legal provision for employee reporting, copy of annual report to employees and reasons of issuing and non-issuing of employee reports.
- (5) Employees' job satisfaction.
- (6) Company performance: productivity, profitability, growth rate and labour cost.

(7) Industrial disputes and rate of turnover.

Instruments Used:

On the basis of literature review and objectives of the study questionnaire were designed and modified according to comments and suggestions obtained from local and foreign experts in this field before conducting field survey. In order to collect primary data four sets of structured questionnaires having both open and close ended questions were prepared (Appendices - A, B, C and D). Three questionnaires were for employees: one for workers, a second for Trade union leaders and the third for managers. The other questionnaire was for company secretary. In the context of India, for companies' views on employee reporting, company secretary was considered proper person as he is responsible for producing annual reports for shareholders, though in some cases company secretary referred to general manager - personnel or similar ranked executives.

Employees' job satisfaction

To measure employees job satisfaction five points Likert type scale is used. A question was asked relating to individual's feeling towards his job as a whole. Subjects could reply by checking any one of the five possible answers such as 'Highly satisfied', 'Satisfied', 'Indifferent,' 'Dissatisfied' and 'Highly dissatisfied.' Point 5 is given for highly satisfied, 4 for satisfied, 3 for indifferent, 2 for dissatisfied and 1 for highly dissatisfied.

Questions of 'Yes' or 'No' Answer

To assess the views of employees and employers on information disclosure to employees, impact of employee reporting on: employee motivation, industrial relations, productivity, employee commitment, job satisfaction, cost consciousness, turnover, absenteeism, grievance, resistance to change and industrial disputes; legal provision's requirement for employee reporting; copy of annual report; and some other questions are included in the questionnaires. The respondents would indicate their opinions by checking either 'yes' or 'no' response. No checking of either of the responses is considered as 'undecided'.

Multiple Choice Questions

To ascertain some aspects like suitable method of reporting, reasons of producing and non-producing of employee reports, types of report, system of distribution, etc. are covered by some multiple response questions. Subjects would check appropriate box to indicate their choices. In some questions more than one answer was allowed.

Company Performance

Productivity: In some studies productivity is measured dividing total value added by number of employees (Morishima, 1991a; Malgwi, 1993). But for this study exact number of employees could not be collected, therefore, total value added is divided by total labour costs to calculate productivity. That is, productivity per Rs. labour cost is calculated and taken into consideration for analysis.

Profitability: For convenience in computation and interpretation, profitability is measured by return on net worth, which is calculated as follows:

$$\text{Profitability} = \frac{\text{Net profit after tax}}{\text{Net worth (Share capital+Reserves+Undistributed profits)}} \times 100$$

Necessary figures are collected from annual reports (1995-96) of the sample companies.

Growth rate: To see the average profitability of the sample companies relating to past 10 years, growth rate is calculated. Growth rate is calculated by using the following formula:

$$P = A(1+r)^n$$

Where, P = Profit after tax of the current year, i.e. PAT of 1996

A = Profit after tax of the base year, i.e. PAT of 1987

r = Growth rate; and

n = Number of years, i.e. 10

In most of the cases 10 years profit after tax is considered but in a few cases 5 years and in a very few cases 2 years profit after tax is used, being related figures could not be collected.

Labour Cost: Labour cost figures are collected from annual report of the sample companies. For this study total labour cost is taken in percentage of total costs and calculated as follows:

$$\text{Labour cost} = \frac{\text{Total labour costs}}{\text{Total Costs}} \times 100$$

Open Ended Questions

In the questionnaires, some open ended questions are included. In this case, subjects were requested to mention: five items of information to be disclosed to employees, last year's figure of industrial disputes, rate of employee turnover, other alternative in some multiple choice questions and comments and suggestions on employee reporting.

4.5 Pilot Survey

After designing questionnaires and taking local and foreign scholars' comments and suggestions on those, pilot survey was conducted to ascertain the workability and face validity of the questionnaires. Specific purposes of pilot survey were:

- a. to determine whether the subjects understand instructions and questions in the questionnaires;
- b. to determine whether they could respond properly and correctly; and
- c. to make necessary modification, based on the pilot survey, so that respondents could answer in the right way to each and every item of the questionnaires without much difficulty.

To achieve the above objectives, 24 questionnaires for employees of three levels and 8 for company secretary were mailed. But unfortunately no responses received. Then the questionnaires were filled in through personal visit to 8 companies.

The completed questionnaires were found satisfactory as far as the subjects' comprehension of the question was concerned. However, the pilot survey called for the following modifications in the questionnaires:

- (1) The term 'employee report' appeared unknown to the most of the respondents. A statement of clarification of the term is sought by the respondents.
- (2) In some questions few words appeared to be ambiguous and confusing to the lower level employee respondents.
- (3) In the questionnaires for company secretaries, in case of number of employees, details (such as manager, clerk, supervisor and worker) were considered difficult to produce. Some of the subjects suggested to limit the question to total number of employees only.
- (4) In some cases, mainly illiterate and poor literate workers expressed language problem as the questionnaire was in English. They demanded interpretation in local languages.

To overcome the above problems, a statement defining employee report was attached at the top of the questionnaires. Necessary changes in words also made to make the questionnaires simple and easy to understand. Questions like details of employees discarded. In case of language problem company officials' assistance were requested in few cases. The modified questionnaires were then administered for the final survey.

4.6 Data Collection Procedure

To collect primary data for the study questionnaires were mailed to the selected subjects. For employees six questionnaires (for workers, TU leaders and managers) were mailed to each of 100 companies. The other questionnaire was sent to 500 companies randomly selected from Stock Exchange enlisted companies in India and a request letter was also attached to fill in the questionnaire and to return with a copy of annual report of the year 1995-96. But the responses were disappointing. Only one of 100 companies returned 6 filled in questionnaires

for employees; no reminder was given to these companies. From other 500, only 10 completed questionnaires and 30 annual report were received.

A second request letter was given to 300 companies out of those 500 to fill in questionnaire and return with a copy of annual report of the year 1995-96. From these 300 only 5 completed questionnaires and 40 annual reports were received. A third request letter was also given to 100 companies out of those 300, and again 5 completed questionnaires and 20 annual reports were received. The annual reports do not accompany completed questionnaires were not included in the analysis. Then through visiting the companies personally, the researcher got the questionnaires filled in by 210 employees and 60 companies (including those received from mailed survey) from different industry category and geographic locations in India.

The duration of data collection was from November 1996 to June 1997. Data were collected from person to person interview basis from the subject by the researcher himself (except those collected from mailed survey). Respondents were told about the objectives of the study. They were also taken to confidence and convinced that their responses would be kept confidential including the name of the company.

Several problems were faced during the collection of data. Most of the respondents were reluctant to disclose any information. Some of them were afraid if any thing might happen to their job. Some subjects changed appointment again and again and some directly denied to fill in questionnaire or give any information. The bitter result of mailed survey is also experienced.

After collection of data, all the answer sheets were checked one by one and incomplete, illegible and ambiguous answer sheets were excluded from the study.

4.7 Data Processing

The data collected for the study were processed through micro computer using Statistical Package for Social Sciences (SPSS). Before feeding the data into computer, a code plan was prepared and all the data were converted into numerical codes according to that code plan and the coded data were recorded in separate code sheets. Then the data were fed into the computer and used for analysis.

The data were grouped into different categories according to type of organisation (private and public), age (high and low), education (up to H.S. = low and above H.S. = high), level of employee (workers, trade union leaders and managers), experience (up to 15 years low and above 15 years high), size of the company (up to 5000 employees = small and above 5000 employees = large) and employee report (receiver and non-receiver, and producer and non-producer).

4.8 Statistical Tools Used

All data were processed through micro computer using Statistical Package for Social Sciences (SPSS) developed by Nie et al. (1975) (Latest available version: SPSS for Windows, Release 6.0 was used for the analysis of the present study).

To analyse the data for the study following statistical tools were used:

(1) Chi-square test

Chi-square test was used to see the significance of the association or difference between the responses of the subjects according to their personal attributes such as age, experience, education, sex, ranks, type of organisation, size of company and employee report.

(2) t-test

t-ratios were computed to determine whether there is significant difference between:

a. mean job satisfaction score of the employee respondents according to the type of organisation (private and public), employee report (receiver and non-receive), age (low and high), experience (low and high), education (low and high).

b. Productivity, profitability, growth rate, labour cost, industrial dispute and rate of employee turnover of the respondent companies according to type of organisation, size of company and employee reporting.

(3) Two-way ANOVA

Two-way ANOVA was computed to find out the main effect and interactions, if any, of independent variables like age, education, experience, type of organisation, employee reporting and size of company on dependent variable such as job satisfaction, company performance, industrial disputes and employee turnover.

(4) Correlation

Pearson's product moment correlation coefficients were computed to measure the relationship between some major variables such as age, experience, education, job satisfaction, employee reporting, type and size of company, productivity, profitability, growth rate, labour cost, industrial disputes and employee turnover.

(5) Stepwise Multiple Regression

To see the relative contributions of different independent variables to dependent variables stepwise multiple regression was computed. Specific applications were as follows:

a. the relative contribution of age, experience, education, type of organisation and employee report to employees' job satisfaction.

b. the relative contributions of number of employees, type of organisation, and employee reporting to industrial disputes, employee turnover, productivity, profitability, growth rate and labour cost.

(6) Rank and Rank Correlation

Ranks and rank orders were computed to examine the relative importance of some factors such as methods of communication and reasons of producing and non-producing of employee reports, and Spearman's rank order coefficient of correlation was computed to find out the relationship between the ratings of those aspects by different groups of respondents.

(7) Simple Statistics

In addition to the above, simple statistics like frequency, percentage, mean, median, S.D. and range also computed for the study.