Chapter - 3

RESEARCH METHODOLOGY
3.1 What is Research?

“Research in Common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific-topic. In fact research is an art of scientific investigation. (Kothari, C.R., 1990)”

According to Advance Learner’s Dictionary of current English the meaning of research is “Research is a careful investigation or inquiry especially through search for new facts in any branch of knowledge”.

According to Redman and Mory research is a systematic endeavour to gain new knowledge

3.2 Objectives of Research

The main objective of research is to explore answers to questions posed with the help of application of scientific methods. The main purpose of research is to find out what is hidden behind and yet not been discovered.

Although every research has its own objectives but every research has some common objectives and these common objectives are as follows -

1. To get familiar with new happenings or to attain new findings in to it.
2. To exactly represent the properties of a specific individual, circumstances of group.
3. To know about the frequency with which anything occurs and with which it is connected with something else.
4. TO test the hypothesis to know the cause and effect relationship between two or more variables.

3.3 Types of Research

Research can be categorized in to many different ways based on the methods of doing research and the problem on which research is done etc..

3.3.1 Basic research

The research which is done for upgrading the knowledge only and which has no instant commercial value. The research which is done for human wellbeing and its interests, animal wellbeing and its interests and plant welfare is called basic or fundamental research. The main objective of this type of research is to expand one’s knowledge only and not to create or invent or explore something new. There is no clear commercial potential to the discoveries that is outcome of basic research.

3.3.2 Applied Research

Applied research is designed to solve practical problem of the modern world, rather than to acquire knowledge for knowledge sake.

Applied research is designed to get solutions for real world problems rather than to get knowledge to improve human or animal or plant conditions. This type of research’s main focus is to analyze and solve social and real life problems. These types of researches are conducted on large scale and are very expensive. Generally theses types of researches are funded by agencies like Government, public corporations, UNICEF, IMF, World Bank, University Grants Commissions etc.

According to Hunt, “applied research is an investigation for ways of using scientific knowledge to solve practical problems (Hunt). E.g. improve agriculture crop production, treat or cure a specific disease, improve the energy efficiency homes, offices, how can communication among workers in large companies be improved? Applied research can be further categorized in to two types one is
problem oriented applied research and second one is problem solving type of applied research.

### 3.3.3 Quantitative Research

Quantitative research means research that is based on numerical values, figures or numbers which are results of measurement of something.

In this type of researched the measured quantity or amount is compared with past records and tries to predict future values. In social sciences, quantitative research means the systematic pragmatic exploration of quantitative characteristics and phenomena and its relationships”. The purpose of quantitative type of research is to generate and make mathematical models, theories or hypothesis applying to a phenomenon.

The main this in quantitative research is to measure something because it gives basic link between numerical observation and mathematical explanation of quantitative relationship. In quantitative type of research the statistics is the major part of mathematics, is used. The heavy use of statistical methods is done in fields like economics, commerce etc.

In quantitative type of research structured questions, where the response options are already determined and very big number of respondents are involved. For example total sales of soap industry in terms of rupees cores and or quantity in terms of lakhs tones for particular year.

### 3.3.4 Qualitative Research

Qualitative type of research means research which is non-quantitative. The analysis involved in this type of research is also non-quantitative type or qualitative type. Qualitative research means collecting, analyzing and interpreting data by taking observation of what people do and say. These observations are obtained through well designed questionnaires or interview schedules etc. Qualitative research means definitions, properties, symbols, and description and metaphor of things. This type of research is much more subjective and uses very different methods of collecting information; the main
entity is individual, in-depth interviews and focus groups. Small number of people is interviewed in depth and or a relatively small number of focus groups are conducted. The nature of this type of research is exploratory and open ended.

The present research work falls in the category of “Descriptive Research” type.

3.4 Need of the Study

Human Resources (HR) are the energies, skills, talents and knowledge of people which are, or which potentially can be applied to the production of goods or rendering useful services. HRA is the process of identifying and measuring data about human resources and communicating this information to interested parties. Human Resource disclosure is the process of identifying and reporting the Investments made in the Human Resources of an Organization that are presently not accounted for in the conventional accounting practices. In simple terms, it is an extension of the Accounting Principles of matching the costs and revenues and of organizing data to communicate relevant information. The Quantification of the value of Human Resources helps the management to cope up with the changes in its quantum and quality so that equilibrium can be achieved in between the required resources and the proves Human Resource Accounting provides useful information to the management, financial analysts and employees. The advantages of HRA are – Human Resource Accounting helps the management in Employment and utilization of Human Resources. It helps in deciding transfers, promotion, training and retrenchment of human resources. HRA provides a basis for the planning of physical assets vis-a-vis human resources. It helps in evaluating the expenditure incurred for imparting further education and training of employees in terms of the benefits derived by the firm. It helps to identify the causes of high labour turnover at various levels and taking preventive measures to contain it.

HRA helps in locating the real cause for low return on investment, like improper or under-utilization of physical assets or human resources or both.
HRA also helps in understanding and assessing the inner strength of an organization and helps the management to steer the company well through the most averse and unfavourable circumstances.

Human Resource accounting provides valuable information for persons interested in making long term investments in the firm. It helps the employees in improving their performance and bargaining power. It makes each employee understand his contribution towards the betterment of the firm vis-a-vis the expenditure incurred by the firm on him.

Hence, seeing the significant importance of the topic the researcher decided to study the present subject. During the review of literature on the HRA it was found that not many studies are done so extensively on the said topic comparing disclosure practices of human resource variables by public sector and private sector companies that is why present topic is selected by the researcher to do research on.

3.5 Objectives of the Study
1. To examined the human resource disclosure practices followed by selected public sector and private sector companies of India.
2. To make a comparative study of human resource disclosure practices in selected public and private sector companies

3.6 Hypothesis of the Study
1. $H_{01}$: The rate of disclosure of human resource variables is non-significantly different among private sector companies.
2. $H_{02}$: The rate of disclosure of human resource variables is non-significantly different among public sector companies.
3. $H_{03}$: The rate of disclosure of human resource variables is non-significantly different among Public sector and Private sector companies.
3.7 Research Design

3.7.1 Sample Selection

To study the present topic of human resource disclosure variables five leading companies from private sector and five leading companies from public sector were selected. These companies were selected randomly from list of leading companies in each sector.

The companies which were selected from private sector were –

1. ACC Ltd.
2. Bajaj Auto
3. HCL Technologies
4. Hindalco Industries, and
5. Infosys

And the companies which were selected from public sector were –

1. GAIL India
2. Steel Authority of India Ltd. (SAIL)
3. Bharat Heavy Electricals Ltd. (BHEL)
4. Oil and natural Gas Commission (ONGC), and
5. National Thermal Power Corporation Ltd. (NTPC)
Fig. 3.1: Sample Selection

Sample

Private Sector Companies

- ACC Ltd.
- Bajaj Auto
- HCL Technologies
- Hindalco Industries
- Infosys

Public Sector Companies

- GAIL India
- SAIL
- BHEL
- ONGC
- NTPC
3.8 Data Collection

The present study is based on the data collected from annual reports available on the net.

3.9 Research Methodology

The methodology adopted for the present research work is as follows –

Twenty four human resources variables were selected to study disclosure practices by the selected companies. These twenty four variables were selected on the basis of literature reviewed for the present research work.

The disclosure of the variables was observed from the annual reports of the selected companies which were available on the net. After noting the disclosure of selected variables from the annual reports of the selected companies, the observations were tabulated and further analysis was done on the tabulated data.

3.9.1 Time period of the study

The time period of the study was five years from 2009 to 2013, as this period was latest when research was started.
3.9.2 Research Tools Used

The research tools used in the present study are described in the following sections –

**Percentage Method**

Percentage method is used to compare different entities. In this method the value is calculated on the base of one hundred. Values of all the different entities are bring on the same scale so that comparison becomes easy. In the present research work percentage method is used to calculate rate of disclosure.

**Mean**

Measure of central tendency (or statistical averages) tells us about the central point about which items have a propensity to cluster. Such a measure is considered as the most representative figure for the entire mass of data. Measure of central tendency is also known as statistical average. Mean mode, median are the most popular statistics. Mean also known as arithmetic average is the most commonly used measure of central tendency and it is calculated as sum of the all individual items of the series and this sum is divided by total number of items in that series. It can be worked out as –

\[
\bar{X} = \frac{\sum X}{N}
\]

**Standard Deviation**

Standard deviation is the measure of dispersion of a series which is most widely used and is generally denoted by the symbol ‘\(\sigma\)’. Standard deviation is calculated as the square root of the mean of squares of deviations and such deviations are calculated and difference between individual items in a series and arithmetic mean of the series. The formula for calculating as standard deviation is as follows –
\[ SD = \sqrt{\frac{\sum (X - \bar{X})^2}{N - 1}} \]

Z-test

Z-test is based on normal probability distribution and is used for judging the significance of several statistical measures, particularly the means. The relevant statistics “Z” is worked out and compared with its probable value at a specific level of significance for judging the significance of measure concerned.

Z-test is generally used for judging the significance of difference between means of two independent sample in case of large sample of when population variance is known.

To test the significance of difference between the two sample means, the difference is expressed in terms of standard normal variate (Z) by dividing the difference by standard error.

\[ Z = \frac{|\bar{X}_1 - \bar{X}_2|}{SE} \]

Where \( \bar{X}_1 \) = Mean of first series
\( \bar{X}_2 \) = Mean of second series
SE = Standard error

\[ SE = \sqrt{\frac{\sigma_1^2}{N_1} + \frac{\sigma_2^2}{N_2}} \]

Technique of Analysis of Variance

The ANOVA can one–way, two-way, three-way or N-way. In one-way classification the data are classified according to only one criterion. It is customary to summarize calculations for sums of squares, together with their number of degrees of freedom and mean squares in a table called the analysis of variance table, generally abbreviated ANOVA. The sample of ANOVA results table is given below:
### Analysis of variance (ANOVA) table: One–way classification model

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS (Sum of squares)</th>
<th>$\nu$ (degrees of freedom)</th>
<th>MS (Mean square)</th>
<th>Variance Ratio of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between samples</td>
<td>SSC</td>
<td>$\nu_1$</td>
<td>MSC</td>
<td>$F$</td>
</tr>
<tr>
<td>Within samples</td>
<td>SSE</td>
<td>$\nu_2$</td>
<td>MSE</td>
<td></td>
</tr>
</tbody>
</table>

Where,

- SST = Total sum of squares of variations.
- SSC = Sum of squares between samples
- SSE = Sum of squares within samples
- MSC = Mean sum of squares between samples
- MSE = Mean sum of squares within samples

### 3.10 Limitations of the Study

1. The present research work is based on only ten companies, five companies from each public and private sectors due to limited time period and length of the study.

2. The time period for the present study was also five year only. Again the reason for this is same that time was limited and the length of the study.