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3.0 INTRODUCTION

This chapter explains the methods and techniques adopted to carry out the investigation and describe how the entire study has been organized and reported. This chapter includes the details regarding the objectives of the study, hypotheses of the study, sampling procedures, variables of the study, sampling technique adopted, research tools, development of tools, pilot study and statistical tools used for the present study.

3.1 TITLE OF THE RESEARCH PROBLEM

This study is related to the “Study on Human Resource Development Practices among the Workers of Dalmia Cements of Tiruchirappalli District, Tamil Nadu”.

3.2 STATEMENT OF THE PROBLEM

The industrial and commercial organizations have realized that human resources are the most important element in the field of success and failure of an organization. The human resource, the most crucial constituent within an organization is constantly being challenged by the changing process of human resource development enabling to discover and exploit the inner potential of human force, to develop the organizational culture to establish a close but cordial rapport between the bosses and the subordinates for an easy interaction to motivate the whole human force of organization. The need for having right number of workers of relevant categories and utilizing them efficiently assumes special significances. In this regard, an organization can’t afford either to be overstaffed or understaffed. Overstaffing entails an additional labour costs while understaffing affects the quality of work and production. Hence, human resource development is most needed in a country like India not only for development of industrial and commercial sectors but also in service sectors.
To know about the systems, goals and strategies adopted by the management while practicing human resource development, the types of activities taken up by downsizing the structure, the human resource development competencies needed for every employee to reform his/her role efficiently and effectively. The researcher felt that there should be a serious and proper enquiry in the human resource development practices adopted by the industry. Many studies have made regarding human resource development but since very few studies have been made earlier insisting on different human resource development practices persisting in the factory, the researcher got interested to take up a descriptive study. This study is made in a view to prepare a profile of human resource development practices at Dalmia Cements Ltd, Tiruchirappalli by way of analyzing the socio-demographic and organizational factors, which would influence the human resource development practices in Dalmia Cements Ltd.

3.3 OBJECTIVES OF THE STUDY

- To study the various human resource development practices through which various human resource development activities are being performed in Dalmia Cements Ltd., Tiruchirappalli.
- To find out the effectiveness of the human resource development climate of the organization in the study area.
- To find out the human resource development training effectiveness of the organization in the study area.
- To study the human resource development performance appraisal of the organization in the study area.

3.4 HYPOTHESES OF THE STUDY

3.4.1 Hypotheses Related to HRD Climate

Hypothesis - 1
There will be no significant variation among the personal variables like age, caste, educational background, nature of the labour, seniority and monthly income and HRD climate of the selected respondents in the study area.
Hypothesis - 2
There will be no significant difference between personal variables like rural/urban background and type of family and the HRD climate of the selected respondents in the study area.

Hypothesis - 3
There will be no significant relationship between personal variables like age, educational background, nature of the labour, seniority and monthly income and HRD climate of the selected respondents in the study area.

Hypothesis - 4
There will be no significant association between personal variables like rural/urban background and type of family and the HRD climate of the respondents in the study area.

3.4.2 Hypotheses Related to HRD Training

Hypothesis - 5
There will be no significant variation among the personal variables like age, educational background, nature of the labour, seniority and monthly income and HRD training of the selected respondents in the study area.

Hypothesis - 6
There will be no significant difference between personal variables like rural/urban background and type of family and the HRD training effectiveness of the selected respondents in the study area.

Hypothesis - 7
There will be no significant relationship between personal variables like age, educational background, nature of the labour, seniority and monthly income and HRD training effectiveness of the selected respondents in the study area.
Hypothesis – 8
There will be no significant association between personal variables like rural/urban background and type of family and the HRD training effectiveness of the respondents in the study area.

3.4.3 Hypotheses Related to HRD Performance Appraisal

Hypothesis - 9
There will be no significant variation among the personal variables like age, caste, educational background, nature of the labour, seniority and monthly income and HRD performance appraisal of the selected respondents in the study area.

Hypothesis – 10
There will be no significant difference between personal variables like rural/urban background and type of family and the HRD performance appraisal effectiveness of the selected respondents in the study area.

Hypothesis -11
There will be no significant relationship between personal variables like age, educational background, nature of the labour, seniority and monthly income and HRD performance appraisal of the selected respondents in the study area.

Hypothesis – 12
There will be no significant association between personal variables like rural/urban background and type of family and the HRD performance appraisal of the selected respondents in the study area.

3.4.4 Hypothesis Related to HRD Practices

Hypothesis – 13
There will be no significant relationship between the HRD practices like HRD climate, HRD training and HRD performance appraisal scores of the selected respondents in the study area.
3.5 OPERATIONAL DEFINITIONS OF THE KEY TERMS USED

3.5.1 Human
According to *Word Reference of English Dictionary, (2006)*, human is relating to a person and a characteristic of humanity. In the present study, ‘human’ is related to the employees working in Dalmia Cements of Tiruchirappalli District in Tamil Nadu.

3.5.2 Resource
According to *Word Reference of English Dictionary, (2006)*, resource is a source of aid or support that may be drawn upon when needed or available source of wealth; a new or reserve supply that can be drawn upon when needed. In the present study, ‘resource’ is the human resource available and working in Dalmia Cements of Tiruchirappalli District in Tamil Nadu.

3.5.3 Human Resource
Susan M. Heathfield, (2007), defines human resources as: “The people that staff and operate an organization as contrasted with the financial and material resources of an organization. It represents the organizational function that deals with the people. In the present study, human resources are the workers working in the Dalmia Cements of Tiruchirappalli District of Tamil Nadu.

3.5.4 Development
Shashi Kapur, (1999), development means a progressive series of changes in an orderly way. It is an enfolding of ones capabilities and skills. It is not merely change in physical form or adding ability to ability. It is a complex process of integrating many functions. In the present study, ‘development’ is meant by the development of human resources in Dalmia Cements of Tiruchirappalli District in Tamil Nadu.

3.5.5 Human Resource Development
Susan M. Heathfield, (2007), defined human resource development as the framework for helping employees develop their personal and organizational skills, knowledge and abilities. Human resource development includes such opportunities as employee
training, employee career development, performance management and development, coaching, succession planning, key employee identification, tuition assistance, and organization development. In the present study, human resource development is the development of workers through various practices in the Dalmia Cements of Tiruchirappalli.

3.5.6 Practices
According to Word Reference of English Dictionary, (2006), practice is a customary way of operation or behaviour or translating an idea into action. In the present study ‘practice’ is meant by the human resource development practices followed in Dalmia Cements of Tiruchirappalli.

3.5.7 Workers
According to Word Reference of English Dictionary, (2006), a worker is a person who works at a specific occupation or persons engaged in any gainful activity are considered ‘workers’ (or employed). Gainful activity (of work) is the activity pursued for pay, profit or family gain or in the other words, the activity that adds to the ‘national product’. In the present study ‘workers’ are the employees working in Dalmia Cement factory of Tiruchirappalli District in Tamil Nadu.

3.6 RESEARCH DESIGN

The term ‘design’ means “drawing an outline” or planning or arranging details. It is a process of making decisions before the situation arises in which the decision has to be carried out. William Zikmund, (1988) has described research design as “a master plan specifying the methods and procedures for collecting and analyzing the needed information”. Research design is thus a plan of how the goals or research will be achieved.

The descriptive research design enables the researchers to describe or present a picture of a phenomenon or phenomena under investigation. The methodology involved in such designs is mostly qualitative in nature producing descriptive data i.e., people’s own written or spoken words and observable behaviour.
3.7 PROFILE OF THE STUDY AREA

Tiruchirappalli District in an area of 4403.83 Sq. Km stretching between 10 and 11.30 of the Northern Latitude and 74.858 of the Eastern Longitude. Tiruchirappalli district is centrally located in the State of Tamil Nadu. It covers 5 Revenue Taluks, which comprise of twenty Community Development Blocks. It is blessed with the perennial irrigation potential from the river Cauvery. More than 76 percent of its population lives in rural areas. According to 2001 census it has the total population of about 23,88,831. The literate population is about 16,89,780 in the district. From this district Dalmia Cements Pvt. Ltd., Dalmiapuram, especially from the Pulambadi Panchayat Union and Kallakudi Village is chosen by the researcher for the present study.

Table – 3.1 Census – 2001 Population Statistics

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Parameters</th>
<th>Total Persons</th>
<th>Male</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>India</td>
<td>1,027,015,247</td>
<td>531,277,078</td>
<td>495,738,169</td>
</tr>
<tr>
<td>2.</td>
<td>Tamil Nadu</td>
<td>62,110,839</td>
<td>31,268,654</td>
<td>30,842,185</td>
</tr>
<tr>
<td>3.</td>
<td>Tiruchirappalli</td>
<td>2418366</td>
<td>1208534</td>
<td>1209832</td>
</tr>
<tr>
<td>4.</td>
<td>Pullambadi</td>
<td>100821</td>
<td>49832</td>
<td>50989</td>
</tr>
</tbody>
</table>

Table – 3.2 Profile of Tiruchirappalli District

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Tiruchirappalli District</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Taluks</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>Blocks</td>
<td>14</td>
</tr>
<tr>
<td>3.</td>
<td>Corporation and Municipalities</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Town Panchayats</td>
<td>17</td>
</tr>
<tr>
<td>5.</td>
<td>Revenue Villages</td>
<td>507</td>
</tr>
<tr>
<td>6.</td>
<td>Panchayat Villages</td>
<td>408</td>
</tr>
</tbody>
</table>

107
Table - 3.3 Blocks in Tiruchirappalli District

<table>
<thead>
<tr>
<th>Block</th>
<th>Panchayat Villages</th>
<th>Block</th>
<th>Panchayat Villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andanallur</td>
<td>25</td>
<td>Lalgudi</td>
<td>45</td>
</tr>
<tr>
<td>Manachanellur</td>
<td>35</td>
<td>Manapparai</td>
<td>21</td>
</tr>
<tr>
<td>Manikandam</td>
<td>22</td>
<td>Marungapuri</td>
<td>49</td>
</tr>
<tr>
<td>Musiri</td>
<td>33</td>
<td>Pullambadi</td>
<td>33</td>
</tr>
<tr>
<td>Tattayyangarpettai</td>
<td>25</td>
<td>Thiruverambur</td>
<td>24</td>
</tr>
<tr>
<td>Thottiam</td>
<td>26</td>
<td>Turaiyur</td>
<td>34</td>
</tr>
<tr>
<td>Uppiliapuram</td>
<td>18</td>
<td>Vaiyampatti</td>
<td>18</td>
</tr>
</tbody>
</table>

Table - 3.4 Panchayat Villages in Pullambadi Block

<table>
<thead>
<tr>
<th>Pullambadi Block</th>
<th>Number of Panchayat Villages</th>
<th>33</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alambadi</td>
<td>Alambakkam</td>
<td>E. Vellanur</td>
</tr>
<tr>
<td>Garudamangalam</td>
<td>Kallagam</td>
<td>Kanakiliyanallur</td>
</tr>
<tr>
<td><strong>Kallakudi, (Dalmia Cements)</strong></td>
<td>Keela Arasur</td>
<td>Kovandakurichi</td>
</tr>
<tr>
<td>Kumulur</td>
<td>Malvai</td>
<td>Mela Arasur</td>
</tr>
<tr>
<td>M.kannanur</td>
<td>Muduvathur</td>
<td>Nammbukurichi</td>
</tr>
<tr>
<td>Neikulam</td>
<td>N. Sangendi</td>
<td>Ootathur</td>
</tr>
<tr>
<td>Orathur</td>
<td>Peruvalapur</td>
<td>P. K. Agaram</td>
</tr>
<tr>
<td>P. Sangendi</td>
<td>Pudurpalayam</td>
<td>Reddymangudi</td>
</tr>
<tr>
<td>Saradamangalam</td>
<td>Sirukalapur</td>
<td>Thappai</td>
</tr>
<tr>
<td>Thinnakulam</td>
<td>Thiranipalayam</td>
<td>Vandalaiakudalur</td>
</tr>
<tr>
<td>Varakuppai</td>
<td>Venkatachalapuram</td>
<td>Viragalur</td>
</tr>
</tbody>
</table>
Map 3.1: Study Area

STUDY AREA - DALMIA CEMENTS, DALMIAPURAM

PULLAMBADI BLOCK

DALMIA CEMENTS

Scale

TIRUCHIRAPALLI DISTRICT

PULLAMBADI BLOCK

INDIA

TAMIL NADU

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3.8 PROFILE OF DALMIA CEMENTS OF TIRUCHIRAPPALLI DISTRICT

Only in the year 1914, India has entered the field of Cement manufacturing. Now there are many Cement factories spreaded all over India except West Bengal, Assam and Kashmir. Shri Ram Krishna Dalmia, a daring and foresighted pioneer in the industrialization of India planned to establish many Cement factories in different parts of the country and act upon it by establishing Cement plants at Dalmia Nagar in Bihar, Karachi, Dalmia Dadri, Dondal in Punjab, Sawai Madhopur in Rajasthan and Dalmiapuram in Tamil Nadu. Dalmia Cement (Bharat), Ltd., (DCBL), is one of the largest and leading Cement manufacturing companies in Tamil Nadu. It is located in the Trichy-Madras chord line and it is 45 km north east of Trichy town. DCBL, commenced its production in the year 1939, with and installed capacity of 250 tonnes of clinker per day produced from the Polsius Lepol Kiln, a semi-dry process technology. In 1949 the second wet process UNAX KILN was installed. These two plants were added to raise the installed capacity to 1250 tonnes per day. Dalmia Cements (Bharat) Pvt. Ltd., Dalmiapuram of the Pulambadi Panchayat Union and Kallakudi Village of Tiruchirappalli district of Tamil Nadu is chosen by the researcher for the present study. Today, Dalmia Cement is a reputed name in Cements. The mission of Dalmia Cement is focused on creating special Cements for special applications. Types of Cements produced in this factory are Ordinary Portland Cement, Portland Pozzolana Cement, Grey Portland High Strength Special Cement, Oil Well Cement, Portland Slag Cement and Sulphate Resistance Cement. Main objectives of the Dalmia Cement factory are:

- To the share holders-fair return
- To the workers - fair dealings
- To the customers - quality products
- To the society - contribution for growth

It is clear that DCBL has been playing a vital role in building a modern India hope, which would continue the same in future.
3.9 PROFILE OF THE WORKERS

There are totally 15 departments with 60 sub-divisions in the Dalmia Cements of Tiruchirappalli district, out of which there are 469 Workers, 193 Supervisors and 152 Executives with different grades from A to E. The types of workers which are taken for the present study are Operator, Driller, Attender, Operative, Fitter, Driver and Crane Driver, Machinery Attender, Mazdoor, Miller, Khalasy “B”, Fitter Cum Welder, Diesel Mechanic, Electrical / Welder Men, Instrumentation Mechanic, Testing Boy, Lab Boy, Packer Cum Operator, Security, Attendant, Temporary Apprentice, Driver, Mate and Issue-Boy. The number of workers in each department and the sample size is given in Table - 3.5.

Table - 3.5 Sample Universe and Sample Size

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Departments</th>
<th>No. of Workers</th>
<th>Workers Chosen for the Pilot Study</th>
<th>Workers Chosen for the Main Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Quarry / Mines</td>
<td>48</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>2.</td>
<td>Production</td>
<td>130</td>
<td>8</td>
<td>65</td>
</tr>
<tr>
<td>3.</td>
<td>Mechanical</td>
<td>130</td>
<td>8</td>
<td>65</td>
</tr>
<tr>
<td>4.</td>
<td>Electrical</td>
<td>27</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>5.</td>
<td>Instrumentation</td>
<td>12</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>6.</td>
<td>Civil</td>
<td>25</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>7.</td>
<td>Laboratory</td>
<td>32</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>8.</td>
<td>Packing House</td>
<td>4</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Personnel</td>
<td>47</td>
<td>3</td>
<td>24</td>
</tr>
<tr>
<td>10.</td>
<td>Administrative Service</td>
<td>3</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td>Accounts</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Sales</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Technical Services</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14.</td>
<td>Stores</td>
<td>7</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>Projects</td>
<td>2</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>469</strong></td>
<td><strong>30</strong></td>
<td><strong>235</strong></td>
</tr>
</tbody>
</table>
3.10 CRITERIA FOR THE SELECTION OF THE STUDY AREA

The location of the study area is Tiruchirappalli district, which is one of the oldest districts of Tamil Nadu state. Most of the people in Tiruchirappalli district are engaged in industrial activities. Since this is a descriptive research, one of the industries i.e., Dalmia Cements of Tiruchirappalli district is selected purposively for the present study. From this Cement factory, out of 469 workers (30 of them are taken for pilot study are excluded for the pilot study) 235 respondents were selected which consists of 53.5% of the universe. Some of the criteria which are taken into account for the selection of the study area were:

- The researcher belongs to the Tiruchirappalli District and Dalmia Cements is one of the widely known Cement factories under private sector and it is also the oldest factory in Tiruchirappalli district of Tamil Nadu.

- The researcher identified Dalmia Cements as one of the main industries in Tiruchirappalli district where the HRD practices are being performed.

- The concepts which the researcher has taken are Training, Performance Appraisal and HRD Climate and these are being practised in Dalmia Cements.

- The workers of this area mostly belong to the rural background which made the researcher to take into account the Dalmia Cements for studying the influence of HRD practices amongst the workers.

3.11 SAMPLING FRAME – DATA BASE

Sampling is simply the process of learning about population on the basis of a sample drawn from it. Under this method a small group of the universe is taken as the representative of the whole mass and the results are drawn. It is a method to make social investigation practicable and easy. “A statistical sample is a miniature picture or a cross-section of the entire group or aggregate from which the sample is taken”, Young, P.V., (1995). A sample is the reflection of the universe and bears all the characteristics of the universe. It is divided into probability and non-probability sampling techniques.
Simple Random sample is one where each item in the universe has an equal or known opportunity of being selected. In the words of Harper, W.M., (1995), "a random sample is a sample selected in such a way that every item in the population has an equal chance of being included. Random sampling is more suitable in more homogenous and comparatively larger groups. This method has the advantage that all the elements have equal chance to be included, which is the simplest and the easiest method to conduct and the degree of sampling error is low. Therefore, keeping all this in view the researcher adopted simple random sampling technique to study the human resource development practices amongst the workers of Dalmia Cements of Tiruchirappalli district, Tamil Nadu. The population of Dalmia Cements consists mainly of 469 Workers, 193 Supervisors and 152 Executives. 469 workers are serving in the Dalmia Cements, but the researcher adopted simple random sampling method by which 53.5% i.e., 235 respondents (30 workers who were considered for pilot study were excluded from the sample universe) were selected from various departments randomly in order to cover all the departments. The primary data is collected from the selected respondents in the study area through an interview method by using standardized interview schedule in the regional language (Tamil) which is specially designed for the purpose of this study with the help of simple random sampling technique.

3.12 SELECTION OF THREE CONCEPTS FOR THE STUDY

Primarily the researcher studied the review of literatures from various books, journals, research reports, periodicals and some of the conference papers. The exact literature was found in journals from IIM, Bangalore and Ahmedabad, books, reports and internet websites. The researcher, in order to develop more ideas regarding the HRD practices discussed with the research guide, experts from IIM and IRMA, Anand, Gujarat. After this, the researcher obtained the exact idea of present problem in the industry which in turn leads to researcher to select three concepts for the present study. The three concepts of the present study are HRD climate, HRD training and HRD performance appraisal. These concepts are widely practised in Indian industries.
3.13 VARIABLES OF THE STUDY

The variables are a characteristic that takes on two or more values. It is something that varies. It is a characteristic that is common to a number of individuals, groups, events, objects etc., the individual cases differ to the extent in which they possess the characteristic. Thus age, income, caste, education, occupation etc., are all variables.

The two types of variables are independent and dependent variables. The independent is the presumed cause of the dependent variable the presumed effect. The independent variable thus, is one which explains or accounts for variations in the dependent variable. A dependent variable is one which changes in relationship to changes in another variable. Reviewing the available literature and studies in the area of Human Resource Development the researcher identified the following variables for the present study.

3.13.1 Independent Variables

The independent variables are based on the age, sex, marital status, religion, caste, educational background, nature of the labour, seniority, rural/urban background, monthly income/wages, type of family and family size.

3.13.2 Dependent Variables

The dependent variables are based on the HRD practices amongst workers in the Dalmia Cement factory of Tiruchirappalli district and practices such as HRD climate, HRD training and HRD performance appraisal among the workers.
3.14 RESEARCH TOOLS

The present research is based on Survey method. It is necessary to construct a tool for collecting the viable data as this study is based on Survey method. The term ‘survey’ is used for the technique of investigation by a direct observation of a phenomenon or systematic gathering of data from population by applying personal contact and interviews when an adequate information about a certain problem is not available in records, files and other sources. It is currently being used in those investigations also where published data is used. There are few writers who still believe that the term survey can be applicable only when a direct contact is made and does not include any study from the libraries and archives.

Advantages of Survey Method are:

- Direct and close contact between researcher and the respondents
- Greater objectivity
- Testing the validity of theories
- Formulation and testing of hypothesis
- Social surveys are based on actual observation
- Universal application

3.15 DEVELOPMENT OF TOOLS

Since the present study is based on survey research method, it is indispensable to construct a tool of inquiry i.e., interview schedule for gathering the necessary data. For the construction of tools of inquiry the researcher has to undergo different stages. Primarily, the researcher reviewed related studies, visited various universities and libraries in many parts of the country. Research studies/reports in HRD available in the international and national websites, dissertations abstracts, periodicals, relevant documents and books from various libraries, journals gave her idea to approach in HRD research.
Secondly, the researcher held discussions with the scholars related to her field from various universities, different departments such as management, statistics, commerce, human resource management and adult education and also with all the field experts in all these disciplines. By consulting them, the researcher got clarity for constructing and shaping the variables.

In the third step, the researcher has associated herself with the various field experts and eminent professors for discussion related to HRD and its conceptual framework. The researcher also went to some HRD based industries for finding the reality of HRD practices in Indian industries. Based on the following informations collected from various literature sources, discussions with eminent experts, interactions with the workers and HRD staff, the researcher selected the problem for the study and generated variables. As the respondents of the study are mostly the workers, the interview schedule is the most appropriate tool to collect the required data for the present study.

The primary data is collected from the workers of the study area of all levels through a direct inquiry method with pre-tested, structured and standardized interview schedule in regional language (Tamil) and English which has been specifically designed for the purpose of this study by adopting Simple Random Sampling Technique. This standardized tool was developed by Rao, T.V., (1991). Black and Champion, (1976), pointed out the following Advantages of the interview schedule.

- Personal communication and face to face contact
- Equal status of interviewer and interviewee
- Questions are asked and responses received verbally
- Information is recorded by the interviewer and not the respondent
- The relationship between the interviewer and interviewee, who are strangers to each other, is transitory
- The interview is not necessarily limited to two persons
- There is considerable flexibility in the format of the interview
3.16 PILOT STUDY AND FINALIZATION OF RESEARCH TOOL

The standardized questionnaire was developed by Rao, T.V., and Abraham, E., (1991), for the managers at the XLRI centre for HRD, is widely being used by the researchers in the field of social sciences and HRD. The researcher utilized the same tool for the workers category for the present study. As the categories of workers may vary from illiterates, semi-literates to drop-outs, the researcher converted the same questionnaire which was developed by Rao, T.V. and Abraham, E, into Interview Schedule and translated into Tamil to get the accurate responses from the respondents. In order to get the suitability and validity of the Interview Schedule in Tamil, a pilot study was conducted in the Dalmia Cement Factory, Tiruchirappalli. The pilot study data was collected amongst 30 workers and the Interview Schedule was found reliable and thus used for the main study with slight changes. These 30 workers were excluded from the sample universe for the main study data collection. The final structured Interview Schedule both in Tamil and English is given in the Annexure I and II at the end of the thesis.

3.17 SAMPLE UNIVERSE AND SAMPLE SIZE

The Sample Universe is the workers of the Dalmia Cements of Tiruchirappalli District of Tamil Nadu. There are totally 100 Executives, 200 Supervisors and 469 Workers. Researcher used Simple Random Sampling Technique for finalizing the sample size and amongst the 469 workers, 30 workers are excluded from the sample as it is taken for the pilot study and 439 workers are considered as sample universe. Out of which, 235 respondents (workers) from the study area are selected, which consists of the 53.5% of the total number of workers working in the study area. The sample universe and size is diagrammatically represented in the Fig. 3.1.
3.18 SCALING AND SCORING TECHNIQUE

Based on the pre-test, the repetitions and unknown questions of the respondents from the personnel profile of the respondents were removed from the main study. The main questions from the three concepts of HRD practices, which kept as it is a standardized tool. The drafts were also consulted to some of the experts for discussion and correction. The five point scaling technique was adopted for all the three practices as given below from each of the three practices separately according to their nature. The standard scores developed by them are used for the purpose which was explained as below. Standardized tool which was developed by Rao, T. V. and Abraham, E., (1991), is used as a tool for the data collection and the standard scores mentioned by them has been used for all the three practices for the analysis. The scoring and scaling pattern adopted for the three practices are given below:
A. HRD CLIMATE LEVEL

In order to give the overall opinion of HRD Climate prevailing in Dalmia Cements each question is given under this rating as follows:

0 – Not at all True
1- Rarely True
2 – Sometimes True
3- Mostly True
4- Almost Always True

The scores are added for all 39 questions and classified for HRD Climate is given below.

0 - 39 – Poor
40 -78- Average
79 -117 – Good
118 - 156– Excellent

B. HRD TRAINING EFFECTIVENESS

In order to give the overall opinion of HRD Training Effectiveness prevailing in Dalmia Cements each question is given under this rating as follows:

0- Not at all True
1- A Little True
2- Somewhat True
3- True to a Great Extent
4- Very True

The scores are added for all questions from 40 to 64 and classified for HRD Training is given below.

1- 25 – Poor
26- 50- Average
51-75 – Good
76 -100 – Excellent
C. HRD PERFORMANCE APPRAISAL EFFECTIVENESS

In order to give the overall opinion of HRD Performance Appraisal Effectiveness prevailing in Dalmia Cements each question is given under this rating as follows:

4- Completely True  
3- Mostly True (75% True)  
2- Somewhat True (50% True)  
1- Slightly True or True to a Little (25% True)  
0- Totally False

The scores are added for all questions from 40 to 64 and classified for HRD Performance Appraisal is given below.

1- 33 – Poor  
34- 66- Average  
67-99 – Good  
100 - 132 – Excellent

3.19 RELIABILITY AND VALIDITY

The word reliability means consistency or accuracy i.e., the degree to which the test agrees with itself. A test is said to be reliable when it functions consistently. Therefore, reliability is the substance of the present tool. This method emphasizes the inter correlation of the items in the test and the correlation of the tests with the test as a whole. Validity of a test or evaluation device can be defined as the degree of which the test measures what it is intended to measure. There are several types of validity. In the present study, the content validity is used to review the related literature. Hence, the test has the high intrinsic validity.

In the present study, the co-efficient of reliability and validity for HRD practices items have been estimated from the sample of 235 respondents selected from the study area. There are four different methods for estimating the reliability co-efficient. They are: Test-Retest Method, Alternate or Parallel Form, Split-Half Method and Rational Equivalence Method. In the present study Split-Half Method which is more appropriate
in this case is applied. The procedure/method generally used for splitting the test into two halves is the odd-even split technique. For finding, the co-efficient reliability value with the hold of spearman brown formula.

\[
    r_{11} = \frac{2r_{1/2,1/2}}{1 + r_{1/2,1/2}}
\]

\( r_{11} \) - Reliability co-efficient for the whole test
\( r_{1/2,1/2} \) - Reliability co-efficient for the half test

The items of HRD practices, (HRD climate, HRD training and HRD performance appraisal) under pilot and main study were found out to be .905, .893 and .952 respectively. The co-efficient reliability value is nearly one, which is a high value. So, this schedule is the reliable tool for measuring corresponding items of the interview schedule i.e., HRD practices, (HRD climate, HRD training and HRD performance appraisal) among the selected respondents in the study area.

3.20 MAIN STUDY DATA COLLECTION

The main study data was collected amongst the workers of the Dalmia Cements of Tiruchirappalli district of Tamil Nadu. There are totally 100 Executives at top Level, 200 Supervisors and 469 Workers. As the researcher study is limited to workers only, researcher randomly selected 235 respondents excluding 30 workers who were selected for the pilot study which are 53.5% of the total number of workers working in the study area for the present study.

3.21 STATISTICAL TECHNIQUES USED

The collected data was compiled, processed, analyzed and has been converted into standard scores, tabulated with the help of statistical tools such as frequency distribution, using descriptive and inferential statistics, further the data has been
analyzed by using the appropriate statistical techniques such as ‘t’ test, ANOVA, Factor Analysis and Chi-Square Test with the help of statistical package (SPSS), for finding out the Relationship, Association, Variation and the various factors influencing HRD Practices in the study area were also undertaken. The statistical tools have been applied to substantiate the data collected and to test the hypotheses and the presumptions of the researcher which are discussed in the analysis chapter of the study.

3.22 LIMITATIONS OF THE STUDY

- The researchers were allowed to collect data from the limited respondents from the study area and the data collected was limited to 235 respondents chosen at random. Therefore, the results and findings of this study may not reflect the real conditions of industrial atmosphere of all industries in Tamil Nadu as well as in India.

- The study was confined to the period from 2002-2007 only, hence the results may not manifest problems pertaining to the whole lot of labourers. Mostly informations were collected from the secondary sources and the primary sources.

- There might be personal bias in the information and in the opinion of the employees. During the interview few employees hesitated to express their feelings and opinions. This may limit the validity of the facts discussed over here.

- The researcher was allowed to collect data from the limited respondents from the study area.

- The data collected was limited to 235 respondents of the study which is not applicable or generalized for the whole study.
• This study is confined to only one factory that is Dalmia Cements of Tiruchirappalli District. Since this study is based on HRD practices it may vary from one industry to another.

3.23 PROBLEMS ENCOUNTERED

Each field has some problems in collecting primary data from the respondents. The researcher has also encountered few such problems.

🌟 The workers are available after their duty was finished so the researchers have to wait for the availability of workers. Therefore, the researcher interviewed the respondents during their lunch time after they had finished their lunch.

🌟 It is very difficult to ask questions to the workers before duty as they are in hurry to enter in their workplace and after their duty they are in hurry to go to their homes.

🌟 Due to various shifts of the workers and they are not available at one particular time, the researcher has to wait for hours to meet the respondents.

🌟 It was difficult to make understand the questions to few of the respondents who are illiterate and not much educated.

3.24 SUMMARY OF THE CHAPTER

The third chapter presents the blueprint of the research methodology that guides the study. This proceeds with the statement of the problem, research design, profile of the study area, sampling procedure, construction of tools and a reference to statistical tools which are used.