CHAPTER-IV
OBJECTIVES AND RESEARCH METHODOLOGY

Uttarakhand State was formed from carving out of the state of Uttar Pradesh in the year 2000 with the intention to fulfill the high expectations of the local people related to development and better living standards. The State Infrastructure & Industrial Development Corporation of Uttarakhand Limited (SIDCUL), a government of Uttarakhand enterprise, was incorporated as a limited company in the year 2002 to promote industrial development in the state. The industrial subsidy offered by central as well as state has motivated entrepreneur to setup the venture in the state. From the various literature reviewed, it is found that training remained the core HR issue and challenges before the management that needs to be taken care for improving the employees performance. Out of various measures laid down in the literature, it is being found that Employee training and development is emerged as one of the most important function in the fields of human resource management. Training is one of the most critical and strategic means for improving the employees capacity as well as their competency which again in turn will help the SMEs in gaining competitive edge. It is necessary for the researchers to raise the following questions to make the training more effective and meaningful:

1) Does training help in raising the employees’ performance?
2) Whether important motivational issues are considered in training programme such as nature, duration, content, management support etc?
3) Does T&D help in improving the capacity of employees?
4) Whether issues related to promotion and succession planning is given consideration in Training and Development programme of employees?

Research Gap
Over the last two decades, the Indian SME sector has grown exponentially in terms industrial output, exports, innovation and employment generation, fuelled by globalization, liberal domestic economic policies and increasing accent on public-private partnerships. Today, many developing countries around the world have benchmarked the
Indian SME sector as the key model for their own small sector development initiatives

The technological advancement has created the large skill gap. There are many reasons of Skills Gap.

Since the formation of state of Uttarakhand, a large number of researches were undertaken by the governments, academicians as well as research scholar to highlight the problems and challenges faced by the SMEs in the state. However very few study are focusing on the role of T&D in improving the Human capacity, their job related competency. Hence present research work has taken up with the motives of analyzing different dimensions of training and developmental issues and their role in building human resource capacity and required skills. By investigating contemporary issues related to training and development will help organizations in designing appropriate training and development strategies.

**Objectives of the Study:**

This study aims to investigate the training and development strategies for HR capacity building in some selected SMEs of Uttarakhand, measure the effectiveness of the training and development programme and assess the role of the training and development for succession planning  and assess the relationship between training and development with the performance of employees in the SMEs of Uttarakhand. This research project aims to examine the employee’s motivation towards training and development program, their learning and perceived outcome from T&D program of the organization. Attempt is also made to explore the factors that can motivate workers in this type of organization for undertaking assignment of training. Effort is also directed to find out strategies that can help employees in this segment to enhance their capability. Present research work has been taken up with the following objectives into consideration.

1. To analyse the present status of training and development activities undertaken by the SMEs for enriching skill and competency of the employees.
2. To analyse the training and development strategies for HR capacity building in selected SMEs of Uttarakhand.
3. To measure the effectiveness of Training and development programme for developing human capacity building in SMEs of Uttarakhand.

4. To assess the role of Training and development programme for succession planning in SMEs of Uttarakhand.

5. To assess the relationship between training and development programme with the performance of employees.

ASSUMPTION OF HYPOTHESIS:

To answer the questions and based on the literature reviewed, the researcher proposed following main null & alternate hypotheses as follows:

**HYPOTHESIS 1:**

H0=There is no significant relationship between training and development programme with the performance of employees of various cadre.

H1=There is a significant relationship between training and development programme with the performance of employees of various cadre.

**HYPOTHESIS 2:**

H0=The perception of employees towards training and development for succession planning does not differ significantly across the various SMEs of Uttarakhand.

H1=The perception of employees towards training and development for succession planning differs significantly across the various SMEs of Uttarakhand.

**HYPOTHESIS 3:**

H0=The effectiveness of training and development programme does not differ significantly across the level of employees.

H1=The effectiveness of training and development programme differs significantly across the level of employees.
RESEARCH METHODOLOGY:

Research Methodology is a systematic way to solve the research problem. It constitute of research method. It is the procedures by which researchers go about their work of describing, explaining and predicting phenomena. It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research. This study is about examining present status of employee training and development, focusing on some selected SMEs of Uttarakhand. The main focus is to find out training and development strategies for HR capacity building used to train workers to give their greatest commitment and effort towards work. Thus, there are several research aims and objectives that this study attempt to achieve. Therefore, the main purpose of present section of this chapter is to give information on research activities and steps that need to be carried out.

Research Design:

According to William (2006), research design can be thought of as the structure of research, it is the "glue" that holds all of the elements in a research project together. We often describe a design using a concise notation that enables us to summarize a complex design structure efficiently. The research design is a case study in which data was collected across a population through sampling. It constitutes a blueprint for the collection, measurement and analysis of data. A survey is a method of collecting data in which people are asked to answer a number of questions (usually in the form of a questionnaire). The reliability of a survey results depends on whether the sample of people from which the information has been collected is free from bias and sufficiently large. The researcher (myself) aims to divide the steps to collect primary in two stages and these include exploratory research and descriptive research. Details of both methods are explained below.

Exploratory Research

Exploratory research involved with conducting a focus group interview with few selected convenient respondents to gain general information about employee training and
development in some selected SMEs of Uttarakhand. Convenient respondents are some selected employees. The focus group was formed by the researchers to the views and ideas about employee training and development for developing construct for the study. The research results from the focus group interview are used towards the questionnaire design, which are used as the main primary research method. The questionnaire is in the quantitative or structured survey which will be explained more in-depth in the later section.

**Descriptive Research:**

Descriptive research is a stage after the exploratory research and primary research are completed. This stage involved with analyzing data collected through the fieldwork. As the researcher has used the structured or quantitative survey as the main primary research tool, this means that the primary data is subject to quantitative analysis (Saunders et al., 2007). Thus, the researcher has used the SPSS to assess the collected data. The results are reported in descriptive manner along with statistical data. The analysis during the descriptive research are based on deductive reasoning which is a logical argument based on hard evidence. This means that before reaching the conclusive result, discussion in the literature review chapter is referred to. The research design for this study was the exploratory as well as descriptive in nature. It is therefore qualitative and quantitative in outlook.

**Type & Source of Data:**

Data used to support the analysis in this study was gathered from two sources, primary data and secondary data.

**Primary Data**

Primary data refers to 'the first-hand information gathered by the researcher to answer the problems at hand' (Hackley, 2001). In general, primary data can be gathered with the use of different quantitative and qualitative research methods, such as the questionnaire, focus group interview, in-depth individual interview and Delphi research. The use of questionnaire was adopted because it ensured that data collection was standardized such that each respondent got the same question and in the same format. Questionnaires also enabled collection of original data from the sample of the population within a short time and at low cost for purposes of describing the entire population (Ogutu, 2012).
The selection of research tools will depend on a few factors, such as time, research skills of the researcher and budget for the research. Also, the type of research tool used will determine the number of respondents required for the study. In general, when using a qualitative research method, a small group of respondents is needed, while when the quantitative research tool is employed, a larger sampling size will be required.

Secondary Data
Secondary data refers to existing information which is collected by someone else for specific purpose. In other words, secondary data can be collected from various sources and the researcher may need to gain permission before accessing it. The good point of the secondary data is that it is cheaper to gather as compared to primary data. However, as secondary data is collected by someone else and for a specific reason, this means that it may not answer the problems at hand. Therefore, the main task of the researcher is to ensure that the secondary data collected to support the analysis of each research project must be related and relevant to the project at hand.

In this study, the researcher gathered secondary data from different sources, such as research papers, newspapers, websites and textbooks. Apart from making sure that they are related and relevant to the research aims and objectives, the research also ensured that it is reliable by collecting it from sources with a good creditability.

Data Collection Method:
The study depended on primary data collected from the staff and some secondary data. The primary data was collected from the field survey using questionnaires and interview schedules. The questionnaires comprised of close-ended and open ended questions. These formed the basis of the analysis of the study. Online questionnaire using Google docs as well as personal survey was done by researcher. The researcher went to the various SMEs in Uttarakhand and handed the questionnaires to the various respondents. The researcher then explained how the questionnaires were to be filled and one week later she went back to collect the filled copies.

Designing of questionnaire:
The questionnaire is an instrument designed to bring forth the desired information.
The questionnaire was designed with theoretical inputs taken from printed material, online questionnaire and discussion with the guide. There were total 19 questions. Questions were closed ended as well as open ended. Five point Likert-scale rating has been used for closed ended questions. The questionnaire is pilot tested to refine the questions so that respondents did not have problems in answering them. It was pilot tested among some of the employees working in selected SMEs of Uttarakhand to check for ambiguities and for time required in completing the questionnaire. Necessary modifications were carried out in questions based on their feedback.

The questionnaire was divided into two sections; the first section consists of the respondent’s demographic characteristics such as:

1. Age
2. Gender
3. Marital status
4. Educational Qualification
5. Type of organization,
6. Income Designation
7. Years of service.

The second section explore the perception of employees towards training and development programme, outcomes of training and development, role of training and development in HR capacity building, the relationship between employee training and employee performance, the relationship between employee training and firm performance, role of training and development training and succession planning.

It consist of statements on a five point scale or Likert scale, where 1 = strongly disagree and 5 = strongly agree. The responses collected from the questionnaire then fed into SPSS 20 version and different statistical analyses were carried out.

**Population, Sample Size and Sampling Techniques for the Study:**
All the items under consideration in any field of inquiry constitute a population. It can be presumed that in such an inquiry when all the items are covered no element of
chance is left and highest accuracy is obtained. Sekeran, (2000)\textsuperscript{210} reported that population refers to the entire group of people, events or things of interest that the researcher wishes to investigate. Population for the present study includes Employees of selected SMEs and ancillary units located in different industrial areas (SIDCUL) of Uttarakhand. For the present study

SIDCUL – Dehradun
SIDCUL – Haridwar
SIDCUL – Sitarganj
SIDCUL – Rudrapur

Almost 40 Small and medium industry and their ancillaries were selected conveniently by the researcher and then HR managers were contacted personally to facilitate the data collection process. Some of the prominent firms were Siddhbali Industries, Krishna Industries, and Hema Engineering, Brahma Auto Industries, Suryanchal Furnitech in Haridwar. Amkay Auto, DVS Industries, Imperial Auto,Lucas TVS in Rudrapur. Zenplas Pipes Pvt Ltd, Setco Automotive, Narendra Pvt Ltd in Sitarganj,HindRectifiers,AmyCylinders,G.B.Springs,ShriPackaging,Cooper Industries in Dehradun.

**Sample Size:**
Quite often we select only a few items from the population for our study purposes. The items so selected constitute what is technically called a sample. Sekeran, (2000)\textsuperscript{211} defines a sample as a portion of the population that has attributes as the entire population. Sample size for the present study includes 500 employees engaged with manufacturing units of SMEs and their ancillaries in Uttarakhand.

**Sampling Methods:**
Sampling method are the means to select sample of respondents from the population. For this study a convenient and justified sampling techniques was used to collect the data from the population.

**Data Analysis Tool Used:**
After collection of data it was systematically arranged, tabulated and appropriate analysis has been done. Univariate and Bivariate data analysis techniques were used to analyse the data. Following statistical technique were used to analyze the data.
**Percentage analysis:**
Percentage analysis is the method to represent raw streams of data as a percentage (a part in 100 percent) for better understanding of collected data.

**Rating / Ranking analysis:**
A ranking is a relationship between a set of items such that, for any two items, the first is either 'ranked higher than', 'ranked lower than' or 'ranked equal to' the second. By reducing detailed measures to a sequence of ordinal numbers, rankings make it possible to evaluate complex information according to certain criteria. It is not always possible to assign rankings uniquely. For example, in a race or competition two (or more) entrants might tie for a place in the ranking. When computing an ordinal measurement, two (or more) of the quantities being ranked might measure equal. A common short-hand way to distinguish these ranking strategies is by the ranking numbers that would be produced for four items, with the first item ranked ahead of the second and third (which compare equal) which are both ranked ahead of the fourth.

**Chi- Square Test:**
The chi-square (x²) test of goodness of fit has been used here to test whether a significant difference exist between the observed number of responses and an expected number of responses based on the null hypothesis in each category or class. In order to apply the Chi-square test either as a test of goodness of fit or as a test to judge the significance of association between attributes, it is necessary that the observed as well as theoretical or expected frequencies must be grouped in the same way and the theoretical distribution must be adjusted to give the same total frequency as we find in case of observed distribution. $\chi^2$ is then calculated as follows:

$$\chi^2 = \sum (O_{ij} - E_{ij})^2 / E_{ij}$$

Where

- $O_{ij}$ = observed frequency of the cell in $i^{th}$ row and $j^{th}$ column
- $E_{ij}$ = expected frequency of the cell in $i^{th}$ and $j^{th}$ column

**Factor Analysis:**
The Factor Analysis is used as a data reduction tool as it reduces a large number of variables into a smaller set of variables (also referred to as factors). It removes redundancy or duplication from a set of correlated variables. The key concept of factor
analysis is that multiple observed variables have similar patterns of responses because they are all associated with a latent (i.e. not directly measured) variable.

The two main factor analysis techniques are Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). CFA attempts to confirm hypotheses and uses path analysis diagrams to represent variables and factors, whereas EFA tries to uncover complex patterns by exploring the dataset and testing predictions. In this study, researcher has used confirmatory factor analysis.

**ANOVA Test:**

In statistics, analysis of variance (ANOVA) is a collection of statistical models, and their associated procedures, in which the observed variance is partitioned into components due to different sources of variation. In its simplest form ANOVA provides a statistical test of whether or not the means of several groups are all equal, and therefore generalizes the two-sample t-test to more than two groups. Analysis of variance (ANOVA) is a statistical technique that can be used to evaluate whether there are differences between the average value, or mean, across several population groups. As indicated through its designation, ANOVA compares means by using estimates of variance. Specifically, the sampled observations can be described in terms of the variation of the individual values around their group means, and of the variation of the group means around the overall mean. These measures are frequently referred to as sources of "within-groups" and "between-groups" variability, respectively. If the variability within the k different populations is small relative to the variability between the group means, this suggests that the population means are different. This is formally tested using a test of significance based on the F distribution, which tests the null hypothesis (H0) that the means of the k groups are equal:

\[ H_0 = \mu_1 = \mu_2 = \mu_3 = \ldots = \mu_k \]

An F-test is constructed by taking the ratio of the "between-groups" variation to the "within-groups" variation. If n represents the total number of sampled observations, this ratio has an F distribution with k-1 and n-k degrees in the numerator and denominator, respectively. Under the null hypothesis, the "within-groups" and "between-groups" variance both estimate the same underlying population variance and the F ratio is close to one. If the between-groups variance is much larger than the
within-groups, the F ratio becomes large and the associated p-value becomes small. This leads to rejection of the null hypothesis, thereby concluding that the means of the groups are not all equal. When interpreting the results from the ANOVA procedures it is helpful to comment on the strength of the observed association, as significant differences may result simply from having a very large number of samples.

**Regression Analysis:**
Linear regression is the most basic and commonly used predictive analysis. Regression analysis refers to a set of techniques for predicting an outcome variable using one or more explanatory variables. It is essentially about creating a model for estimating one variable based on the values of others. In the regression model, the independent variable is labeled the X variable, and the dependent variable the Y variable. The relationship between X and Y can be shown on a graph, with the independent variable X along the horizontal axis, and the dependent variable Y along the vertical axis. The aim of the regression model is to determine the straight line relationship that connects X and Y. The straight line connecting any two variables X and Y can be stated algebraically as \( Y = a + bX \) where a is called the Y intercept, or simply the intercept, and b is the slope of the line. If the intercept and slope for the line can be determined, then this entirely determines the straight line.

**Cluster Analysis:**
The objective of cluster analysis is to assign observations to groups ("clusters") so that observations within each group are similar to one another with respect to variables or attributes of interest and the groups themselves stand apart from one another. In other words, the objective is to divide the observations into homogeneous and distinct groups. In contrast to the classification problem where each observation is known to belong to one of a number of groups and the objective is to predict the group to which a new observation belongs, cluster analysis seeks to discover the number and composition of the groups. Cluster analysis is also used to group variables into homogeneous and distinct groups.
4.1 RELIABILITY:

Cronbach’s alpha is the most common measure of internal consistency. It is most commonly used when multiple Likert questions in a survey/questionnaire that form a scale has been used and the researcher wish to determine if the scale is reliable or not. Reliability test of data is carried out using SPSS (statistical package for social science) software.

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
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<tbody>
<tr>
<td>.977</td>
<td>.977</td>
<td>44</td>
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4.2 Kaiser-Meyer-Olkin Measures of Sampling Adequacy and Bartlett's Test of Sphericity

<table>
<thead>
<tr>
<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
<th>.874</th>
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<tbody>
<tr>
<td>Bartlett's Test of Sphericity</td>
<td>Approx. Chi-Square</td>
</tr>
<tr>
<td></td>
<td>df</td>
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<td>Sig.</td>
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Bartlett’s test of sphericity and the Kaiser-Meyer-Olkin measure of sampling adequacy are both tests that can be used to determine the factorability of the matrix as a whole. It is suggested that if the Bartlett’s test of sphericity is significant, and if the Kaiser-Meyer-Olkin measure is greater than 0.6, then factorability is assume. The results value of Bartlett’s test of sphericity is significant (p<0.001, p=0.000). Tables show that the value of Cronbach’s alpha was found to be .977 which indicates that data is
reliable enough to go for further test. The Kaiser-Meyer-Olkin measure is 0.874 which is greater than 0.6. Thus, based from the results, it is appropriate to proceed with Factor Analysis to examine factors that affecting employee training and development.

4.3 Limitation of the Study
The study is limited to the employees engaged with manufacturing units of SMEs and their ancillaries in Uttarakhand only.

2. The study has been restricted to only 500 employees working in SMEs and ancillaries units in Uttarakhand. Because of inherent sampling error and sample biasness, the result may be deviated and thus cannot be generalized.

3. The research was intended to cover the whole population area which could require the researcher to spend a lot of time and financial resources to cover the area population. In view of this the researcher decided to confine the study to some selected SMEs and ancillaries located in SIDCUL area. Due to limited time and financial resources, and the fact that the area has a big representative sample.

4. The personal views, opinions and biasness of respondents affect the quality of data