5.1 Introduction

Quality of work life covers the various aspects under the general umbrella of supportive organization behavior. Thus the quality of work life should be broad in its scope. It must evaluate the attitude of employees towards personnel policies. The purpose of the study is to examine the Quality of work Life. The quality of work life is the extent of relationships between individuals and organizational factors that exists in the working environment. Quality of work life is the extent to which workers can satisfy important personal needs through their experiences in the organization. It focuses strongly on providing a work environment conducive to satisfy individual needs.

Achieving heights in the present days of cut-throat competition when business is trying to occupy the prime condition in the marketplace, Quality of Work Life has emerged as an elucidation for the performance in the job. Performance can neither be achieved by external motivation nor by financial and non-financial rewards rather it comes from the “Workers & their total working environment” (QWL). The focus is not only how people can do better work, but also how work may cause people to do better. In today’s society the picture of the relationship between traditional approach towards work and financial rewards is becoming blurred. Now a days many people refuse to accept the contrite kind of work life that is prevalent in most of the industrialized nations. The basic concept underlying QWL is what has come to known as “Humanization of Work”. It covers a person’s perception or feelings about every dimension of work including economic rewards and benefits, security, working conditions, organizational and interpersonal relationships and intrinsic meaning in person’s life.

The research will be helpful in understanding the current position of the organization. And provide some strategies to extend the employee satisfaction with little modification which is based on the internal facilities of the organization. The research can be further used to evaluate the facilities provided by the management towards the employee. This study also helps to manipulate the expectations of the employees.
Post liberalization environment gave rise to number of industries which brings competitive business war in India. Industries in India have to think how to face them and survive. Every organization is facing unique problems, some organizations have old technology, some lag in financial strength and some pose having obsolete products, some have not providing good working environment, and some have not job security but any of which may affect the quality of work life. Any attempt at improving the performance of the organization can be successful only if the organization is able to develop a strong quality work life.

Quantitative approach is used to investigate the quality of work life between HUL and BHEL. The techniques applied to find out the answer of the research objectives. In this regards demographic variables such as age, gender, are examined on the basis of the employees of both organizations.

The mentioned content of the research gives a detail insight about the method of data collection, sampling technique and sample size etc. This chapter provides justification for using quantitative methods and use of various statistical tools. Those are important for the analysis of research.

**5.1.1 Objectives of the Study**

The study was undertaken with the following objectives:

1. To study the policies and methods adopted by BHEL Jhansi and HUL Orai to improve the quality of work life of their employees.

2. To study the existing quality of work life of employees in Bharat Heavy Electricals Limited Jhansi and Hindustan Unilever Ltd. Orai.

3. To find out how quality of work life leads to high satisfaction and performance of employees.

4. To identify the major factors that influences the Quality of Work Life of employees.

5. To determine the preponderant variables in quality of work life.
6. To compare the quality of work life of employees of BHEL Jhansi and HUL Orai in relation to various factors which effect quality of work life.

7. To suggest the measures to improve the Quality of Work Life in BHEL Jhansi and HUL Orai.

8. To find out in which quality of work life dimension in BHEL Jhansi and HUL Orai is performing well and in which dimension it needs improvement.

9. To compare the Level of satisfaction regarding quality of work life in employees of BHEL Jhansi and HUL Orai.

5.2 Research Design

Research design consists planning of research, deciding the structure of research and strategy adopted by a researcher to examine the problem. In other words, it is an overall plan or a research program which is used in operation of different variables to achieve research objectives. It is use to determine the sample size, methods of data collection, research scale etc.: 

Research design in current research is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money. Research design stands for advance planning of the methods to be adopted for collecting the relevant data and the techniques to be used in their analysis, keeping in view the objective of the research and availability of staff, time and money. Preparation of the research design is to be done with great care as any error in it may upset the entire research. Research design, in fact, has a great bearing on the reliability of the results to be arrived at and as such constitutes the firm foundation of the entire edifice of my research work.

The main purpose of research study is that of formulating a problem for more precise investigation or of developing the working hypothesis from an operational point of view. The major emphasis in this study is on the discovery of ideas and insights. As such the research design appropriate for such study must be flexible enough to provide opportunity for considering different aspects of a problem under study i.e.
testing of Quality of Work life QWL. Inbuilt flexibility in research design is needed because the research problem, broadly defined initially, is transformed into one with more precise meaning in exploratory studies, which fact may necessitate changes in the research procedure for gathering relevant data. Generally, the following three methods in the context of research design for my study will be taken:

(a) The survey of concerning literature;
(b) The experience survey; and
(c) The analysis of ‘insight-stimulating’ examples.

The study undertaken is based on field survey with the employees of Hindustan Unilever limited and Bharat heavy electrical limited to investigate deep insight in to all aspects related to the research objective. A pilot survey was conducted to understand and develop scale at beginning of the study. It is also a tool to structure and the development of final statements in scales. The research design determines the structured questionnaire to achieve the objective of study.

5.3 Key construct

The key area of studies was developed by performing literature review, various items were conceptualized, and selected therefore required questions were framed. These questions are trying to discover the quality of work life in BHEL and HUL and compare them. It develops variables to understand the quality of work life. It investigates according to the both organizations. This study also examines job related problems of employees in both organizations BHEL and HUL.

This study will ensure that all employees are performing at their peak potential, free from stress and strain, and to ensure all their needs are fully satisfied. This study will be used as feedback from employees to know their current perspective of workplace and also to identify the areas of improvement for the organization.
Research Design: Key Construct

The key construct is based on the literature review of various national and international journals and books. The quality of work life was conceptualized based on various constructs. And the quality of work life were measured by taking care of the different views of employees on the basis of their different cadre.

5.3.1 Demographic variable

The demographic variables were comprised after conducting literature review and both open ended and close ended questions were considered in questionnaires made for the employees of BHEL and HUL. There are two types of variables demographic variable and research variable. The demographic variable include name of the organization, Designation of employee, gender, age, marital status, educational qualification, It consists name, gender, age income of employees and work experience of employees. The researcher has undertaken the following variables to measure and compare quality of work life:
General well-being

Home-work interface

Job career satisfaction

Control at work

Working Condition

Stress at work

Fringe benefits

Social integration

Interpersonal relationship

5.4 Research Scale

The study is to determine various factors of measuring quality of work life, level of satisfaction and job related problems of employees. The scale is used not only to find out the quality of work life of employees but also to compare between the employees of both companies BHEL Jhansi and HUL Orai. To measure all these factors, a survey method was applied. Survey was conducted through a developed scale based on extensive literature review.

5.4.1 Questionnaire

Structured questionnaires were prepared for the study and it was prepared by studying various past studies undertaken by researchers. The questionnaire is divided into three parts. First section of both the questionnaire consist demographic profile of both company employee. In first section questionnaire demographics include name of organization, Designation of employees, gender, age, marital status, educational qualification, income, work experience. In the second part of questionnaire various factors related to the quality of work life were included and the third part of questionnaire contains questions of job related problems of employees of both the companies. The scale was used same for both the organizations. Quality of work life
were measured on five point Likert scale where 1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly agree. Factor related to the salary, fair compensation and fringe benefits, social integration, interpersonal relationship and job related problems were measured on same five point Likert scale where is where 1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly agree. In the questionnaire level of satisfaction on quality of work life were also rated by the employees which was measured on five point Likert scale. In the scale 1= Highly dissatisfied, 2=Dissatisfied, 3=Neutral, 4=Satisfied and 5= Highly satisfied.

5.4.2 Pre-test

A pretest was conducted for finalizing various variables and to measure the quality of work life with develop understanding their job related problems. A pre-test on 50 -50 employees of BHEL Jhansi and HUL Orai were conducted to finalize various questions for questionnaire and various variables to measure quality of work life. By applying pre-test, researcher has deleted some items, which were repetitive in nature and found to be unanswerable by the employees. After the collection of data, weighted average method was used to determine to compare various variables. Reliability test were conducted on the questionnaire. The values of cronbach’s alpha were found more than .60. Therefore, research scales were considered reliable and the questionnaire were prepared for final study.

5.4.3 Hypotheses

In the light of review of literature, various hypotheses were formulated on the basis of the study

The study will be carried out mainly to test some of the hypotheses given as follows:

- H1:H0= There is no significant difference between the job career satisfaction of BHEL and HUL employees.
- H2:H0= There is no significant difference between the control at work of BHEL and HUL employees.
• H3: H0 = There is no significant difference between the general will being of BHEL and HUL employees.

• H4: H0 = There is no significant difference between the home work interface of BHEL and HUL employees.

• H5: H0 = There is no significant difference between the stress at work of BHEL and HUL employees.

• H6: H0 = There is no significant difference between the working condition of BHEL and HUL employees.

• H7: H0 = There is no significant difference between fair compensation of BHEL and HUL employees.

• H8: H0 = There is no significant difference between fringe benefits of BHEL and HUL employees.

• H9: H0 = There is no significant difference between Social integration of BHEL and HUL employees.

• H10: H0 = There is no significant difference between Interpersonal relationship of BHEL and HUL employees.

• H11: H0 = There is no significant impact of Job career satisfaction on quality of work life.

• H12: H0 = There is no significant impact of Control at work on quality of work life.

• H13: H0 = There is no significant impact of general well being on quality of work life.
• H14:H0 =There is no significant impact of Home work interface on quality of work life.

• H15:H0 =There is no significant impact of Stress at work on quality of work life.

• H16:H0 =There is no significant impact of Working condition on quality of work life.

• H17:H0 =There is no significant impact of Fair Compensation on quality of work life.

• H18:H0 =There is no significant impact of Fringe Benefits on quality of work life.

• H19:H0 =There is no significant impact of Social integration on quality of work life.

• H20:H0 =There is no significant impact of Interpersonal Relationship on quality of work life.

• H21: H0=There is no significant impact of job related problem to the Quality of work Life

### 5.5 Sample Design

A sample design is a definite plan for obtaining a sample from given population. It refers to the technique or the procedure the researcher would adopt in selecting items for the sample. Sample design may as well lay down the number of items to be included in the sample i.e., the size of the sample. Sample design is determined before data are collected. There are many sample designs from which a researcher can choose. Some designs are relatively more precise and easier to apply than others. Researcher must select/prepare a sample design which should be reliable and appropriate for his research study.
Characteristics of a Good Sample Design

(a) Sample design must result in a truly representative sample.
(b) Sample design must be such which results in a small sampling error.
(c) Sample design must be viable in the context of funds available for the research study.
(d) Sample design must be such so that systematic bias can be controlled in a better way.
(e) Sample should be such that the results of the sample study can be applied, in general, for the universe with a reasonable level of confidence.

Different Types of Samples Designs

There are different types of sample designs based on two factors viz., the representation basis and the element selection technique. On the representation basis, the sample may be probability sampling or it may be non-probability sampling. Probability sampling is based on the concept of random selection, whereas non-probability sampling is ‘non-random’ sampling. On element selection basis, the sample may be either unrestricted or restricted. When each sample element is drawn individually from the population at large, then the sample so drawn is known as ‘unrestricted sample’, whereas all other forms of sampling are covered under the term ‘restricted sampling’.

Thus, sample designs are basically of two types’ viz., non-probability sampling and probability sample.

1. Non-probability sampling

Non-probability sampling is that sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Non-probability sampling is also known by different names such as deliberate sampling, purposive sampling and judgement sampling. In this type of sampling, items for the sample are selected deliberately by the researcher; his choice concerning the items remains supreme. In other words, under non-probability sampling the organisers of the inquiry purposively choose the particular units of the universe for constituting a sample on the basis that the small mass that they so select
out of a huge one will be typical or representative of the whole. For instance, if economic conditions of the people living in a state are to be studied, a few towns and villages may be purposively selected for intensive study on the principle that they can be representative of the entire state. Thus, the judgement of the organisers of the study plays an important part in this sampling design.

In such a design, personal element has a great chance of entering into the selection of the sample. The investigator may select a sample which shall yield results favourable to his point of view and if that happens, the entire inquiry may get vitiated. Thus, there is always the danger of bias entering into this type of sampling technique. But in the investigators are impartial, work without bias and have the necessary experience so as to take sound judgement, the results obtained from an analysis of deliberately selected sample may be tolerably reliable. However, in such a sampling, there is no assurance that every element has some specifiable chance of being included. Sampling error in this type of sampling cannot be estimated and the element of bias, great or small, is always there. As such this sampling design in rarely adopted in large inquires of importance. However, in small inquires and researches by individuals, this design may be adopted because of the relative advantage of time and money inherent in this method of sampling. Quota sampling is also an example of non-probability sampling. Under quota sampling the interviewers are simply given quotas to be filled from the different strata, with some restrictions on how they are to be filled. In other words, the actual selection of the items for the sample is left to the interviewer’s discretion. This type of sampling is very convenient and is relatively inexpensive. But the samples so selected certainly do not possess the characteristics of random samples. Quota samples are essentially judgement samples and differences drawn on their basis are not amenable to statistical treatment in a formal way.

2. Probability sampling

Probability sampling is also known as ‘random sampling’ or ‘chance sampling’. Under this sampling design, every item of the universe has an equal chance of inclusion in the sample. It is, so to say, a lottery method in which individual units are picked up from the whole group not deliberately but by some mechanical process. Here it is blind chance alone that determines whether one item or the other is selected. The results obtained from probability or random sampling can be assured in terms of
probability i.e., the errors of estimation can be measured or the significance of results obtained from a random sample, and this fact brings out the superiority of random sampling design over the deliberate sampling design. Random sampling ensures the law of Statistical Regularity which states that if on an average the sample chosen is a random one, the sample will have the same composition and characteristics as the universe. This is the reason why random sampling is considered as the best technique of selecting a representative sample.

Random sampling from a finite population refers to that method of sample selection which gives each possible sample combination an equal chance of being included in the sample. This applies to sampling without replacement i.e., once an item is selected for the sample, it cannot appear in the sample again (Sampling with replacement is used less frequently in which procedure the element selected for the sample is returned to the population before the next element is selected. In such a situation the same element could appear twice in the same sample before the second element is chosen). In brief, the implications of random sampling (or simple random sampling) are:

(a) It gives each element in the population an equal probability of getting into the sample, and all choices are independent of one another.

(b) It gives each possible sample combination an equal probability of being chosen.

5.6 Sampling Methods

When each and every unit of population for study is considered, it is called census method and all the items of whole population constitute universe. In this method highest level of accuracy is obtained but it is time consuming and very costly method therefore, another way of study a portion of population is called sample survey. This method is very popular and frequently used in market survey and opinion survey etc..

In the present study, convenience sampling was used. The area of study is geographically divided into the two regions:

1. Jhansi
2. Orai
A systematic approach applied for both industries to ignore the disadvantage of convenience sampling, the employees were divided into the three cadre namely executive cadre, supervisory cadre and worker cadre. A list of employees was created randomly fifty employees from each class selected in such a way that fifty employees from each enterprise considered in addition, the data were collected from employees. Total data from 300 employees were collected for the analysis purpose.

**Figure No: 5.2**

Pictorial View of Employee Cadre

![Pictorial View of Employee Cadre](image)

### 5.6.1 Sample Unit

The study is concerned on the comparative study of quality of work life in BHEL Jhansi and HUL Orai. The analysis is based on the employees of two enterprises BHEL and HUL. Data was collected class wise from both the organizations at Jhansi and Orai respectively.

### 5.6.2 Sample Size

The proportion of population was made in such a way that sample must get adequate enough representation of whole population. The sample will be enough to analyze scientifically and logically both industries BHEL Jhansi and HUL Orai. The inferences on the basis of collected samples will give true representation of whole population. The used sample size was 300. The respondents were employees of both enterprises.
5.7 Collection of Data

In order to test the formulated hypothesis empirically a survey has been conducted through a questionnaire. The questionnaires were filled in both the organizations with the permission of their managers and respondent were requested to fill the structured questionnaire. A cover letter was attached with the questionnaire to provide the information regarding the filling of questionnaire and also they were insured that their information will be used only for research purpose and remain strictly confidential. The questions were of both types: close ended open ended and questions were arranged in logical order. Special attentions were paid to keep questions clear, concise, brief and unambiguous. The study is based on primary data and full care was taken to maintain the accuracy in data collection.

In the preparation of data collection, a personal meeting with the authorities of both enterprises were conducted and requested to co-operate in data collection. After rigorous working, data was collected in some months. Respondents were facing some problems in understanding the questions. They were asked to fill their questionnaire in waiting room and when they faced any type of problem in filling questionnaires; their problems were solved out by meeting them personally. Some of them were contacted telephonically to solve their problem in filling questionnaire. Total set of 400 questionnaires were send to the both enterprises. Out of which only 380 responses were received and 320 questionnaires was found fully filled and feasible for considering them in the study.

5.7.1 Area of study

BHEL has emerged as the largest engineering and manufacturing enterprise of its kind in India with an excellent track record of performance. The Company is engaged in engineering, development and manufacture of a wide variety of electrical and mechanical equipment for generation, transmission and utilization of energy and electrical power. The Company today enjoys national and international presence featuring in the 'Fortune 500' and is ranked among the top 12 companies in the world for manufacturing power generation equipment.
Jhansi unit of BHEL was established around 14 Km from the city on the national highway No.26 on Jhansi-Lalitpur road. It is called the second-generation plant of BHEL.

Hindustan Unilever Limited (HUL) is India's largest fast moving consumer goods company, with leadership in Home & Personal Care Products and Foods & Beverages. HUL's brands, spread across 20 distinct consumer categories, touch the lives of two out of three Indians. They endow the company with a scale of combined volumes of about 4 million tonnes and sales of Rs.13,718 crores.

Hindustan Lever's soap factory at Orai in Uttar Pradesh, northern India, is also working on promoting health and hygiene for more than 7,000 people in five local villages. The factory is located in an agricultural area with high levels of poverty, where less than half the local population can read and awareness of good hygiene, nutrition and family planning is poor.

5.8 Tools of Data Analysis

5.8.1 Validity

Validity is a criterion which indicates the degree to which an instrument measures what is expected to be measured by it. There are three types of validity: (1) Content validity (2) criterion related validity (3) construct validity.

5.8.1.1 Content validity

It explains how much a measuring instrument covers the study topic. It can be explained by containing a respective sample of universe or by giving proper representation of each segment of population. It can be explained by containing a respective sample of universe or by giving proper representation of each segment of population.

5.8.1.2 Construct validity

It confirms various propositions of research with the most popular theories. Construct validity has traditionally been defined as the experimental demonstration that a test is measuring the construct it claims to be measuring. Such an experiment could take the
form of a differential-groups study, wherein the performances on the test are compared for two groups: one that has the construct and one that does not have the construct. If the group with the construct performs better than the group without the construct, that result is said to provide evidence of the construct validity of the test. An alternative strategy is called an intervention study, wherein a group that is weak in the construct is measured using the test, then taught the construct, and measured again. If a non-trivial difference is found between the pretest and posttest that difference can be said to support the construct validity of the test.

5.8.1.3 Criterion related validity

It relates to our ability to predict outcomes. This type of validity confirms the success of measures used for estimating purpose.

In the undertaken research each and every contents of measurement is related to the research topic. Content validity was used to check the validity of scale. Construct validity is also used and most popular test such as t-test, factor analysis was applied for the analysis of data.

5.8.2 Reliability

Reliability is a test of sound measurement. A measuring instrument called reliable if it gives consistent results. The reliability is tested by the item to item correlation method. It expresses the consistency of various items used in questionnaire. The reliability of undertaken research is calculated with the help of software SPSS and all the items were found highly correlated and consistent by examining the value of Cronbach’s Alpha. Any scale is called reliable if the value of Cronbach’s Alpha is .06 or greater then that. The results of reliability test is shown in the table which greater than .06 and acceptable. It also shows the high degree of internal consistency and reliability of data. Cronbach’s alpha reliability coefficient normally ranges between 0 and 1. However, there is actually no lower limit to the coefficient. The closer Cronbach’s alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale. Based upon the formula

\[
\text{Cronbach's alpha coefficient } r = \frac{rk}{1 + (k - 1)r}
\]
Where $k$ is the number of items considered and $r$ is the mean of the inter-item correlations the size of alpha is determined by both the number of items in the scale and the mean inter-item correlations.

## 5.8.3 Statistical Tools

Once data has been collected, challenge of it simplification and analysis begins. Therefore, it’s is a necessary for the researcher to arrange the collected data in logical order which is called tabulation. In this study, the collected data was tabulated by computer. The collected data was directly entered into the SPSS 18.0 in both types of sheets namely variable view and data view and required coding also done in computer.

### 5.8.3.1 Factor Analysis

- Factor analysis is used to find latent variables or factors among observed variables. In other words, if your data contains many variables, you can use factor analysis to reduce the number of variables. Factor analysis groups variables with similar characteristics together. With factor analysis you can produce a small number of factors from a large number of variables which is capable of explaining the observed variance in the larger number of variables. The reduced factors can also be used for further analysis. There are three stages in factor analysis

  - First, a correlation matrix is generated for all the variables. A correlation matrix is a rectangular array of the correlation coefficients of the variables with each other.

  - Second, factors are extracted from the correlation matrix based on the correlation coefficients of the variables.

  - Third, the factors are rotated in order to maximize the relationship between the variables and some of the factors.
5.8.3.2 T-test

It is a statistical examination of two population means. A two-sample t-test examines whether two samples are different and is commonly used when the variances of two normal distributions are unknown and when an experiment uses a small sample size. In the study, t-test was applied to compare the mean difference between various variables such as age group, gender, number of siblings, parent qualifications and parent occupation etc.

5.8.3.3 Regression Analysis

Regression analysis determines the relation between two variables. There are two variable dependent variable and independent variable. It explains the effect of independent variable on dependent variable. The relationship between variables can be express in such a way.

\[ Y = a + bX \text{ (Regression equation)} \]

Where, \(X\) = Independent variable and \(Y\) = Dependent variable

Multiple Regressions: multiple regressions describe the relationship between one dependent and two or more than two independent variables.

\[ Y = a + b_1X_1 + b_2X_2 \ldots \text{ (Multiple regression equation)} \]

In this study, correlation between variable were calculated then stepwise multiple regression applied to compute the teenagers influence on consumer decision making on the basis of their socialization, their influencing strategies, various products categories and on various buying decision making stages etc.

5.8.4 Correlation

If two variables are correlated, the change in one variable is accompanied with change in other variable and vice-versa. There are two types of correlation positive and negative. When the increase in one variable result increase in the corresponding variable such type of correlation is called positive correlation and in contrast of this,
increase in one variable decrease in corresponding variable, called negative correlation.

The correlation analysis was used to find the relation between all four constructs of the study. Correlation was computed between socialization agents, influencing strategies, different products categories and buying decision stages etc.

**5.8.3.4 Manova**

Multivariate analysis of variance is applied when ratio of among – groups variance to within groups variance is calculated on many variables. In other words, It is applied when there is several dependent variables are involved along with the several independent variables.

Multivariate analysis of variance was applied with post hoc test (Sidak). With that the test of homogeneity of covariance was tested by calculating Box’s test of equality of covariance Matrices. The test of homogeneity satisfied when the p value is greater than .001 (p>.001). In this study MANOVA was applied to compare the mean between various variable, to test teenagers influence birth order wise, difference of mean on the basis of parents qualification, Occupation.