CHAPTER – III
RESEARCH METHODOLOGY

Introduction
The first chapter delineated the concept of motivation and provided information about purpose and scope in the context of the Critical Analysis of Frederick Herzberg’s Theory of Motivation with reference to changing Perspective.

The second chapter contained theoretical background of Frederick Herzberg’s theory along with literature review of various articles. The various studies, articles and number of dissertation were referred and studied which were linked with the present study.

This chapter presents research design and methodology of the study. It provides detail about sampling procedure, the research instrument used, the various dependent and independent variable considered for the study. The association of these variables with Herzberg’s motivating and hygiene factors also provided. This chapter also endow with how data was analyzed for testing the hypothesis.

The study began with defining research problem. On the basis of research problem, the research objectives and hypothesis were finalized. Then research instrument were refined in the expectation of getting appropriate data.

The major purpose of the study was to study and analyze practical implications of Frederick Herzberg’s theory in different industry sectors by understanding and analyzing Frederick Herzberg’s in detail.

This present study extended the knowledge base by investigating the relevance of Herzberg’s theory in current business scenario. This study was also focused on checking whether ‘salary’ has become motivational factors for industries like IT, BPO, Pharmaceutical, Construction and Insurance etc. Again study examined the ‘growth in terms of knowledge/ Organizational effectiveness’ as additional factor that needs to be added in the motivators’ list.

Research Question
The study addressed following research problems.
Is Herzberg’s Two Factor Theory relevant in current business scenario?
Is there a need to restructure Motivators and Hygiene factors?
Research Design
The overall purpose of the research was to check whether Frederick Herzberg’s theory retained its relevance in current business scenario.
Besides this the specific objectives considered for the study are as follows:

- To study and analyze the concept of Fredrick Herzberg’s Theory in detail.
- To study and analyze the practical implication of the Frederick Herzberg’s theory with respect to different types of industries.

This is an exploratory study based on both primary and secondary data. Literature review helped for realizing the first objective of the study. The questionnaire survey method was used for collection of primary data.

In all 522 employees from various levels were surveyed who are working in ten different industries considered for the study. The industries considered for the study were – Manufacturing, Banking, Construction, Insurance, Hotel Industry, Information Technology, Pharmaceutical, Business Process Outsourcing and Automobile. These industries represent the different eras of industry evolution. Manufacturing and Banking sectors are comparatively older businesses than medieval businesses like Information Technology, Automobile and Construction. Newly evolved businesses are Hotel, Hospitality, Insurance, Pharmaceutical and Business Process Outsourcing.

The quantitative analysis is carried out for testing the hypothesis. The questionnaire was prepared and survey was conducted in order to understand employees’ motivational aspects in various business sectors. The relevance of Frederick Herzberg Theory was tested by using statistical tools.

Research Instrument
A questionnaire was consists of four part. The first part was related to personal information of the employee like their name, designation, no. of years of experience, Mb. No. and email id. For all the respondents designation and no. of years of experience are mandatory information to be provided. These two set of parameters were considered for deciding employee hierarchy level in the respective industry.
Second part of the questionnaire was composed of 48 questions. Out of these questions 42 were dichotomous (having Yes/No type of answers) in nature. The remaining 6 questions are to be answered with options like Some Time, Not Always and Don’t Know apart from Yes-No options. These questions were related to Job Satisfiers and Job Dissatisfiers linked with Hertzberg’s’ theory.  
Third part comprised of two open ended questions. First question shed light on the perception about job meaningfulness whereas, the second question was trying to find out - When do they feel good about their job? and Why?  
In the Fourth part of the questionnaire, respondents were asked to rate all the factors (variables) given due consideration in part two of the questionnaire on the scale of one to ten. Ten was the highest and one was the lowest ranking.  
The factors (variables) considered for the survey were as follows:-  
  - Job Itself  
  - Salary  
  - Supervision  
  - Interpersonal Relationship  
  - Performance Management System  
  - Working Condition  
  - Company Policies and Administration  
  - Training and Development  
  - Welfare Measures  
  - Organizational Effectiveness (Newly identified factor in this study)  
These variables were categorized and linked with Job Satisfiers and Job Dissatisfiers. Job Satisfiers (motivators) from the above mentioned factors are associated with Job Itself, Performance Management System, Training and Development and Organizational Effectiveness. The factors associated with Job Dissatisfiers (hygiene factors) are Salary, Supervision, Interpersonal Relationship, Working Condition, Company Policies and Administration and Welfare Measures.
The detail description of the variable is given below.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Name of the Dependent variables considered for the study</th>
<th>Related Independent variables considered for the study</th>
<th>Reflection beneath Herzberg’s theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Job Itself</td>
<td>Job Importance, Ownership of Job, Freedom/Power to do Job, Challenges in Job, Self Fulfillment, Responsibility and Authority</td>
<td>Job Satisfier (Motivator)</td>
</tr>
<tr>
<td>2</td>
<td>Performance Management</td>
<td>Feedback to Employee, Recognition for achievement, Reward for recognition, Performance Appraisal system and increase in performance</td>
<td>Job Satisfier (Motivator)</td>
</tr>
<tr>
<td>3</td>
<td>Training and Development</td>
<td>Training as a essential activity, Training for development, Learning environment, Support for personal growth</td>
<td>Job Satisfier (Motivator)</td>
</tr>
<tr>
<td></td>
<td>Organizational Effectiveness</td>
<td>Goal Change-communication with employee, Change management for employee, Awareness about career growth in the organization, Retention of talent, Knowledge sharing</td>
<td><em>Can be treated as Job Satisfier (Motivator) (Newly identified factor in this study)</em></td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Supervision</td>
<td>Leadership Skill, Goal Setting by manager, Feedback,</td>
<td>Job Dissatisfier (Hygiene Factor)</td>
</tr>
<tr>
<td>6</td>
<td>Salary</td>
<td>Fair Pay, Comparable Salary, Diverse Salary Structure based on position, Incentives/Bonus</td>
<td>Job Dissatisfier (Hygiene Factor)</td>
</tr>
<tr>
<td>7</td>
<td>Interpersonal Relationship</td>
<td>Sense of Belongingness and team work, Cordial relationship with team leader, Policies for disruptive employee</td>
<td>Job Dissatisfier (Hygiene Factor)</td>
</tr>
<tr>
<td>8</td>
<td>Working Conditions</td>
<td>Adequate Facilities, Personal Space, Flexible working hours</td>
<td>Job Dissatisfier (Hygiene Factor)</td>
</tr>
<tr>
<td>9</td>
<td>Company Policies and Administration</td>
<td>Awareness about</td>
<td>Job Dissatisfier</td>
</tr>
</tbody>
</table>
company policies, Regular updation in policies, Employee view consideration in updation of policies

| 10 | Welfare Measures | Member of Labour union (if any), Labour Union and employee relation, Organization concern about labour relation | Job Dissatisfier (Hygiene Factor) |

Table No. 3.1: Description of Variables

*Organizational effectiveness* is the concept of how effective an organization is in achieving its goals. Every employee in a company contributes to organizational effectiveness. Organizational Effectiveness is added as a motivator in this study. The independent variables which are linked to organizational Effectiveness are Goal Change-communication with employee, Change management for employee, Awareness about career growth in the organization, Retention of talent, Knowledge sharing. This factor was identified on the basis of informal interaction with the respondents and literature review.

*Validity and Reliability of the Instrument:* The validity concerns the interpretation of what a scale actually measures and reliability refers to consistency or repeatability of the measurement.
(Spector, 1997). Questionnaire survey has been always suitable instrument for gathering responses in case of quantitative analysis.

Validity of the Instrument: The survey instrument that was used has a forty-year application and has been applied in several different industries (Kovach 1987). The basic requirement for a questionnaire is that the research objectives must be converted into clear questions which will extract meaningful response from the respondent. A self-administered questionnaire was prepared to get appropriate response as a large sample size needed to be tapped.

A study on “Herzberg’s Two Factor Theory: Consistency versus Method Dependency” carried out by Earl B. French, Morton L., Metersky, David S. Thaler, and Jerome T. Trexler (1973). From the population of 212 system analyst and system engineers’ 25 representative samples were selected. The author used written questionnaire instead of conducting interviews. Motivators and dissatisfying factors were identified by testing for significant differences in frequency between percentage of high and low reports with the Z-statistic.

Betty Kime Campable (1994) used questionnaire survey method for collecting the responses from the employees working in traditional and nontraditional sector and who left the job from nontraditional sector. His study was about “Identification and Comparison of Intrinsic and Extrinsic Job Satisfiers for men and women in traditional and nontraditional occupations”. Scores on the Likert-type scale ranged from one, "extremely dissatisfied," to six, "extremely satisfied." Two represented "dissatisfied," three indicated "tend to be dissatisfied," four was "tend to be satisfied" and five denoted "satisfied" used. Hypotheses were investigated using t-tests and multiple regression techniques. Total 1818 responses were selected from the following classifications of workers: automotive mechanics, brick layers, office workers, carpenters, child care workers, day care workers, communications workers, electricians, electronics technicians, highway construction workers, iron workers, jewelers, vocational nurses, machinists, painters and decorators, pipefitters, plumbers, sheet metal workers, and welders.

In 2007, Anita D. Osman conducted survey by using AJDI (Abridge Job Descriptive Index) questionnaire technique for knowing the “Effects of age, gender and job level on job satisfaction of public service employees in the Bahamas”.

AJDI questions are objective types and answers are marked Y for Yes, N for No, and ? for cannot decide (in this study ‘?’ is treated as 3). ANNOVA is used to test hypothesis to test effect of independent variable
on dependent variable and to determine the significant differences existed in job satisfaction level in more than two groupings that were examined. The t test used to determine whether the mean scores of the two gender groups differed in overall job satisfaction. The sample population included public sector employees or public officer who governed by General orders no matters where they are employed in the country. The sample was consisting of male and female, supervisors and non-supervisors, professionals and non-professionals positioned at different levels across 26 departments (total 1014 nos.).

“An exploratory study on job and demographic attribute affecting employee satisfaction in the Indian BPO industry” was carried out by Santoshi Sengupta (2011). Data were collected through an online survey. The items were put on a five-point Likert scale, wherein the respondents were asked to rate the items between 5 and 1; 5 being “strongly agree” and 1 being “strongly disagree”. The population for this study comprised of employees working in various BPOs in the National Capital Region of India. A sample size of 500 was chosen for this study. Simple random sampling technique was used to gather data from the respondents.

In sum, Questionnaire survey can be treated as valid instrument for the present exploratory research.

**Reliability of Instrument:**
Reliability of research instrument was tested by pilot study. It was carried out by distributing questionnaire among the 30 respondents from the various industries. The respondents were chosen by using convenient sampling method for the pilot study. They were from Manufacturing, Information Technology, BPO and Banking. Their responses were collected and analyzed, which provided basis for this study. Based on respondent feedback some modifications were done and questionnaire was finalized in order to carry out this research work.

**Pilot Study**
The pilot study was based on the responses collected from four different types of industries, namely manufacturing, Information Technology, BPO and Bank. Questionnaire consisted of objective questions based on Herzberg’s Motivators and Hygiene Factors.

**Observations:**

1. It has been observed that apart from the banking sector, there is a positive attitude towards Motivational factors in other types of industries. BPO, IT and manufacturing industries handle their employees properly in terms of advancement in career, responsibilities and recognition of work.

2. Mix responses have been observed in case of Hygiene factors. There is dissatisfaction about salary in IT. No proper awareness has been observed in case of company policy apart from manufacturing industry. The interpersonal relationship plays an important role in Banking, Manufacturing and BPO sector. But awareness about working condition is less in banking sector.

3. It can be stated that, challenging tasks, value addition in knowledge, customer satisfaction and feedback for completion of work are becoming prime factors for a meaningful job.

Thus, pilot study shows that there is some definite deviation from the factors identified by the Herzberg in respective categories. It may lead to addition of some new factors as motivator as well as hygiene factors.

In short, motivation has become important parameter for retention and productivity of any organization. Frederick Herzberg’s theory provides road map for handling and retention of the employees. It necessitates the need of critical analysis of the Herzberg’s theory with changing perspective.

**Sample Design**
Employees working in various industries (situated in and around Pune) were considered for this research. The industries include: Manufacturing, Automobile, Banking, Insurance, Hospitality (Hotels), Pharmaceutical, Information Technology, BPO’s, Hospital and Construction. 50 companies were tapped from various industries to collect the data.

**Universe:** Employees from the industries (under study) in and around Pune

**Sampling Frame:** Industries in and around Pune

**Sampling Unit:** Employees working at various positions

Grouped under the following category - Top Level, Middle Level and Executive Level

The details about the categories are as follows:

**Executives:** Executives are the one who execute the plans of the organization. These types of employees actually work for the organization for the achievement of organizational objectives. The type of work these employees do may differ from industry to industry. For Manufacturing industry these set of employees are working on the shop floor. In the case of Information Technology programmers are the executives. Chefs, front desk officers in the Hospitality industry and Nurses, trainee doctors in Hospitals are the executives. Executives report to Middle level employees.

**Middle Level:** Middle level employees are the link between executives and top level employees. Middle level employees report to top level managers and seek guidance from them. It includes junior level management person. Designation again differs from industry to industry. The designation in the case of middle level employees may include engineer, supervisor, team leader, assistant and Technicians

**Top Level:** Top level employees are the decision makers for the organization. These types of employees decide the strategies for the accomplishment of organizational goals. The divisional manager, sr. manager, assistant general manager and manager are considered under this category.

**Sample Size:** All together 522 employees surveyed for the completion of this study. The research was conducted by collecting responses from the employees working at various levels from the sectors considered for the study.

The size of the sample depends upon the basic characteristics of the population and the type of information required from the survey. For the greater precision of work, it is necessary that
sample size should be large. The most commonly used approach for determining the size of sample is the confidence interval approach. The expected confidence level decides the sample size. Assuming normal distribution, the higher the confidence level, larger will be the sample size. This is because the value of the standard normal ordinate ‘Z’ will vary accordingly.

In the present research, it was estimated that 70% of the employees would answer YES for the questions. Confidence level of 95% was considered for estimating the true population to be within 0.04. The sample size was calculated as follows:

Formula:

\[ n = \frac{(Z^2) \times p \times q}{e^2} \]

Where,

- \( n \) = Sample Size
- \( Z \) = Standard Normal Ordinate
- \( p \) = Population Proportion
- \( q \) = 1-p
- \( e \) = Margin of Error

For 95 percent confidence, the value \( Z = 1.96 \)

\( e = 0.04 \)

\( p = 0.7 \)

\( q = 0.3 \)

Hence,

\[ n = \frac{(1.96^2 \times 0.7 \times 0.3)}{(0.04 \times 0.04)} \]

\[ = 504.21 \]

\[ = 505 \text{ (approx.)} \]

Based on above mentioned assumptions and subsequent calculation the decision about the sample size was taken for the present study. In all 553 responses were collected through mail or distributing questionnaire. The different quadrants of the questionnaire viz; part one, part two and part four which were answered in all respect was take into consideration for the data analysis. Part three of the questionnaire consisting of open ended questions, was not properly answered by many of the respondents. Thus out of 553 responses, 522 responses of structured questionnaires were considered for the research work. It includes Top Level: 13 Nos. i.e. 2% of
total respondents, Middle Level: 40 Nos. i.e. 8% of total respondents, Worker: 469 Nos. i.e. 90% of total respondents.

The detail of the sample collected is as follows:
From each industry minimum 50 responses were collected to get the appropriate representative data for the study. These respondents are the ones who are presently working at various levels in their respective industry.

Sampling Procedure:
For the selection of top level, middle level and executive level employees, random sampling (Probability Proportionate to Size) is used in order to provide equal chance to individual units picked from the universe. It is considered as one of the best methods of sample selection as each one prospective sample has the same probability of getting selected.

The designation/level of the employee differs from industry to industry. General Manager of one company may be equivalent to executive or divisional head of the other company. Same thing is applicable for middle level employees. Hence while considering top level or middle level employee designation as well as number of years of experience was also considered while categorizing the employee into top level, middle level employee. The rest of the left out employees under study were treated as executives. The executives from various industries had the experience ranging from 0 to two years.

Statement of Statistical Hypothesis
Central limit theorem stats that, if random sample of n observation is selected from population, then n is sufficiently large, the sampling distribution of x-bar will be approximately normal. The larger the sample size, the better will be the normal approximation to the sampling distribution x-bar. As the sample size was large (minimum 50 respondents from each industry sector n>30; and total respondents were 500 again n>30) it was understood that population was normally distributed.

The homogeneity of the data was tested by applying p-value test. The statistical hypothesis considered was as follows:

H0: P-value < 0.05
H1: P-value > 0.05

The Null and Alternative Hypothesis were as follows:

H0: The distribution of data is not same across all the industries (considered for the study)
H1: The distribution of data is same across all the industries (considered for the study)

For testing the hypothesis of this study, the statement of statistical hypothesis for each dependent variable was prepared. The statements considered for the analysis of the data were as follows:

In case of present research, Job Satisfiers were Motivators and Job Dissatisfiers were Hygiene factors as per Frederick Herzberg Theory.

1. Job Itself
   H0: Job Itself remains as a Job Satisfier
   H1: Job itself no longer remains as a Job satisfier.

2. Salary
   H0: Salary remains as a Job Dissatisfier.
   H1: Salary no longer remains as a Job Dissatisfier.

3. Supervision
   H0: Supervision remains as a Job Dissatisfier.
   H1: Supervision no longer remains as a Job Dissatisfier.

4. Interpersonal Relationship
H0: Interpersonal Relationship remains as a Job Dissatisfier
H1: Interpersonal Relationship no longer remains as a Job Dissatisfier.

5. Performance Management
H0: Performance Management remains as a Job Satisfier.
H1: Performance Management no longer remains as a Job Satisfier.

6. Working Condition
H0: Working Condition remains as Job Dissatisfier.
H1: Working Condition no longer remains as a Job Dissatisfier.

7. Company Policy and Administration
H0: Company Policy and Administration remains as a Job Dissatisfier.
H1: Company Policy and Administration no longer remains as Job Dissatisfier.

8. Training and Development
H0: Training and Development remains as Job Satisfier.
H1: Training and Development no longer remains as Job Satisfier.

9. Welfare Measure
H0: Welfare Measure remains as a Job Dissatisfier.
H1: Welfare Measures no longer remains as a Job Dissatisfier.

10. Organizational Effectiveness
H0: Organizational Effectiveness remains as a Job Satisfier.
H1: Organizational Effectiveness no longer remains as a Job Satisfier.

Data Collection
The distribution of the questionnaire and collecting back these responses was one of the important parts of this research study. The researcher talked with concern person either on the phone or in person for giving idea about what this research is all about. The purpose of the study was explained to the person, generally working at senior level. In case of some of the industries like Automobile, Hotel industry, initial discussion happen with HR personnel. In case of Hospital and Manufacturing industry permission from head of the department was taken for collecting the responses. Along with the questionnaire, wherever required permission was taken for data collection by submitting request letter. This letter was addressed to concern authority from the industry which explained the purpose of the study.

In case of IT and BPO industry, questionnaire distributed through mails. In the similar context, hard copy of questionnaire was distributed among the respondents belonging to remaining industries like Automobile, Hospital, Pharmaceutical, Manufacturing, Hotel, Bank, Insurance and Construction.

The responses received from IT and BPO industries through mail were printed while tabulating the data. Follow up was done to ensure that completely filled questionnaire should be received from the respondents. It was mandatory for the respondent to fill the information about their designation and number of years of experience in their respective field. On the basis of this demographic information respondents were divided into different level. Name was not mandatory one. It was assured that the confidentiality of the data will be maintained and data collected will be used for the research purpose only.

**Method of Data Analysis**

The researcher entered the data obtained from the respondents in the MS EXCEL sheet. For each industry separate excel spreadsheet was used to tabulate the data. The responses from all the sectors clubbed together in separate excel sheet for doing overall analysis. Based on the designation and number of years of experience new data sheet was prepared for the middle level and top level employees. All together 14 data sheet was made to do analysis. The normality of the data was assumed on the basis of central limit theorem and the quantitative analysis was done for testing the hypothesis.
The value was assigned to each option on the basis importance with respect to questionnaire. One being highest and zero being lowest.

The details of value assigned for the data analysis is as follows.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Option</th>
<th>Value Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Some Times</td>
<td>0.75</td>
</tr>
<tr>
<td>3</td>
<td>Not Always</td>
<td>0.50</td>
</tr>
<tr>
<td>4</td>
<td>Don’t Know</td>
<td>0.25</td>
</tr>
<tr>
<td>5</td>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 3.2: Value allocation for Options

The homogeneity of data tested with the help of p-value test by using single factor ANNOVA. Variance was found for each independent variable for carrying out Z-test analysis.

Hypothesis testing was carried out by using Z-test for each independent variable separately for every industry as well as for executives, middle level employees, top level employees and considering all the industries together. MS EXCEL 97-2003 was used for conducting these analyses.

For the fourth part of the questionnaire, in order to analyze ranking data Garret Ranking Scale was used. This technique has been used to find out the factor which influences employee motivation. Under the Garrett’s Ranking Technique the percentage position is calculated by using the following formula:

\[
\text{Percent position} = \frac{100 (R_{ij} - 0.5)}{N_j}
\]

Where \( R_{ij} \) = Rank given for \( i^{th} \) variable by the \( j^{th} \) respondent.

\( N_j \) = Number of variables ranked by the \( j^{th} \) respondent.

With the help of Garrett’s Table, the percent position estimated is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of score is calculated. The factors having highest mean value is considered to be the most influential factor.
**Assumptions**

The assumption was made in the context of this study that the respondents were willing to participate and would respond honestly. The job hierarchy levels of the employee were differing from industry to industry. Designation and number of years of experience was considered as a basis for determining these job hierarchy levels of the employee.

**Limitations**

The present study was carried out by considering ten industries situated in and around Pune. Hence this study is limited to these industries at confined location. It was assumed that respondents’ feedback was genuine for the study. The survey technique was used as a research instrument and no other instrument was incorporated in data collection. Further, this research work is based only on Herzberg’s Motivator-Hygiene’s theory.

**Summary:**

This chapter explained the detail about research design, research instrument, sample design and selection and statistical hypothesis used for analysis of the data.

The description about dependent and independent variables considered for the study was also provided for the understanding of their relation with Motivators and Hygiene factors stated by Frederick Herzberg.

The data collection methodology was presented along with reliability and validity of research instrument.