CHAPTER 3

RESEARCH METHODOLOGY
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3.0 INTRODUCTION

This chapter deals with methodology adopted to carry out research on "Work-Life Balance: An Empirical and Investigative Case Study on Oil And Natural Gas Corporation Ltd" and describes statement of the Problem, design of the study, Objective of the Study, Population and Sample Size & Method of Sampling, pre-test, Pilot Study, tools used, procedure of data collection, problems encountered during data collection and statistical techniques used for data analysis.

In order to explore this opportunity, this research comprised of semi structured interviews with ONGC employees (Male & Female officers and staff) of different level working at different locations of ONGC, Ahmedabad Asset and even covering different working patterns right from day shift, rotating shift to 14 days on/ off pattern. Each participant was selected for an interview in such a way that the study should cover the total theme of the objective.

3.1 STATEMENT OF THE PROBLEM

There is presence of work-life imbalance among the employees of Oil and Natural Gas Corporation (ONGC).
3.2 DESIGN OF THE STUDY

Research Type: Descriptive Research
Descriptive studies report summary data such as measures of central tendency including the mean, median, and mode, deviance from the mean, variation, percentage, and correlation between variables. On the other hand, descriptive research might simply report the percentage summary on a single variable (http://www.aect.org/edtech/ed1/41/41-01.html).

The research has been designed as descriptive research and analyzed with mean, median, mode, variation, standard deviation, percentage, correlation with variables with Scatter Plot, Histogram, Pearson Correlation and correlation Matrix. Tabulation and the graphical presentation are carried out using MS-Excel. Descriptive and inference statistics is carried out using SPSS 16.00.

Sampling Technique: Stratified Sampling
In stratified sampling, the population is partitioned into non-overlapping groups, called strata and a sample is selected by some design within each stratum (https://onlinecourses.science.psu.edu/stat506/node/27)

There are number of departments in Oil and Natural Gas Corporation Ltd which works for their respective expertise to achieve the ultimate objective of the organization for exploration and production of Oil & Gas. Stratified sampling has been used to cover respective departments within ONGC to have collective sampling.
Table 3.1: Sampling Strata for questionnaire

Employees of ONGC serving in Ahmedabad Asset as on 31.03.2012

<table>
<thead>
<tr>
<th>SL</th>
<th>Group</th>
<th>Employees</th>
<th>Sampling obtained</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>officer</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>Drilling services</td>
<td>380</td>
<td>446</td>
</tr>
<tr>
<td>2</td>
<td>Cementing services</td>
<td>47</td>
<td>70</td>
</tr>
<tr>
<td>3</td>
<td>Mud Services</td>
<td>42</td>
<td>56</td>
</tr>
<tr>
<td>4</td>
<td>Logging services</td>
<td>45</td>
<td>66</td>
</tr>
<tr>
<td>5</td>
<td>Well Services</td>
<td>179</td>
<td>214</td>
</tr>
<tr>
<td>6</td>
<td>Engineering Services</td>
<td>155</td>
<td>183</td>
</tr>
<tr>
<td>7</td>
<td>Well Stimulation Services</td>
<td>93</td>
<td>127</td>
</tr>
<tr>
<td>8</td>
<td>Electronics &amp; Telecommunications</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>9</td>
<td>Forward Base</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>10</td>
<td>Surface Team</td>
<td>604</td>
<td>860</td>
</tr>
<tr>
<td>11</td>
<td>Sub Surface Team</td>
<td>72</td>
<td>86</td>
</tr>
<tr>
<td>12</td>
<td>Finance</td>
<td>40</td>
<td>49</td>
</tr>
<tr>
<td>13</td>
<td>Human Resource</td>
<td>57</td>
<td>88</td>
</tr>
<tr>
<td>14</td>
<td>Material Management</td>
<td>32</td>
<td>46</td>
</tr>
<tr>
<td>15</td>
<td>General Administration</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>16</td>
<td>Medical Services</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>17</td>
<td>Fire &amp; security Services</td>
<td>41</td>
<td>114</td>
</tr>
<tr>
<td>18</td>
<td>Health Safety &amp; Environment</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>19</td>
<td>Logistics</td>
<td>23</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1885</strong></td>
<td><strong>2570</strong></td>
</tr>
</tbody>
</table>

Source: Primary and Secondary data

Table 3.1 reveals an analysis to show that the sampling was conducted to cover nearly all the areas of functioning of ONGC to formulate the strata to meet the objectives of the research. As revealed in the table there were total 73.35 % officers and 26.65 % staff and sampling obtained covering 67.48% officer and 32.52 % Staff as per availability of employees with feasibilities considering their working under different working schedules.
3.3 OBJECTIVES OF THE STUDY

The overall objective of this study is to explore the perceptions of Work-Life Balance of ONGC Employees that includes their quality life conditions meeting with present scenario of competitiveness, their aspirations matching with the growth of ONGC, their work and family life and individual means of adaptation to have proper work life balance and its impact on their family life. Following are the objective to the study:

- To Study whether quality work life condition are meeting with the present scenario of competitiveness.
- To study whether individual employee’s aspirations are matching with the organization growth.
- To study the work life balance, in the context that whether employees (ONGC) are able to balance their work and family life and what means do they adopt to have proper work life balance.
- To study that quality work life condition would have impact on employees’ family relations.
3.4 HYPOTHESES

There are four hypotheses formulated by the researcher and undertaken for the study.

Hypothesis 1:

H0₁: There is no significant correlation between Quality work life conditions of ONGC employees with work-life balance in present scenario of competitiveness.

Hypothesis 2:

H0₂: There is no significant correlation between employees' aspiration with work-life balance in line with organizational growth.

Hypothesis 3:

H0₃: There is imbalance between work and family life of the employees of ONGC.

Hypothesis 4:

H0₄: There is no significant correlation between Quality work-life conditions impacting employee's family relations to have Work-Life Balance.

3.5 POPULATION

ONGC has a unique distinction of being a company with in-house service capabilities in all the activity areas of exploration and production of oil & gas and related oil-field services and over 18,000 technically-competent experienced scientists and engineers, mostly from distinguished Universities/Institutions of India and abroad forms the core of executive profile. They include geologists, geophysicists, and geo-chemists, drilling engineers, reservoir engineers, petroleum engineers, production engineers, engineering & technical service providers, financial and human resource experts and IT professionals. However, ONGC presently has a fleet of 32909 employees as on 31.03.2012 out of this about 29% of the workforce is located in the western region (Covering Ahmedabad, Mehsana, Ankleshwar, Vadodara & Cambay) and Ahmedabad is one of the biggest Asset of ONGC comprises of almost
50% workforce of western region and its area of operation is in span of around 80 KM of radius of Ahmedabad covering four districts i.e Ahmedabad, Kheda, Mehsana & Gandhinagar and having 2570 employees in its payroll as on 31.03.2012.

Study has been conducted on ONGC, Ahmedabad Asset considering a cluster or mini population of ONGC covering all operational area. Further it would be administered with multistage stratified proportionate sampling in order to have appropriate representation from different hierarchical levels, qualification, experience and age groups.

3.6 SAMPLE SIZE AND METHOD OF SAMPLING

95% confidence interval to have a margin of error of 0.04, z value =1.96 and n= sample size

\[
ME = \frac{z\sqrt{p'(1-p')}}{n}
\]

(Source: https://www.unc.edu/~rls/sl51-2010/class23.pdf)

\[
n = \frac{p^*(1-p^*)z^2}{ME^2}
\]

\[
n = 0.5 \times 0.5 \times 1.96 \times 1.96
\]

\[
0.04 \times 0.04
\]

\[
n = 600.25 \text{ sample size required for the study}
\]

Distribution of questionnaire was made to 1358 employees covering various departments' viz. Drilling Services, Cementing Services, Logging Services, Mud Services, Well Services, Well Stimulation Services, Human Resource Department, Land Acquisition Department, Surface Team, Sub Surface Team, Group Gathering Stations (GGS), Gas Collecting Stations (GCS), Institution of Reservoir Studies (IRS), Infocom Services etc. and also covered those employees who were working in shift duty pattern, on/off pattern and at remote locations of exploration activities. Sampling was conducted through personal interviews with pre-set questionnaire allowing full participation of the respondent and questionnaire was sent from the available sources to employees working at remote locations. Against the distribution of 1358 questionnaire, received only 612 valid questionnaires which were used for analysis.

Sample Size : 612 Employees of ONGC

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3.7 PILOT STUDY & PRE-TEST

The questionnaire was prepared considering all aspects to cover the objective of the study and administered on pilot Study administering questionnaire to exactly the same way as it will be administered in the main study, asked for feedback to identify ambiguities and difficult questions and recorded the time taken to complete the questionnaire and decided whether it is reasonable, discarded unnecessary, difficult or ambiguous questions and assessed each question for its adequacy for responses. Checked that all questions were answered and pre-tested considering 50 respondents and refined based on the feedback. The questionnaire then tested for its reliability and validity. The pilot study procedure was undertaken as per Peat et al. 2002: 123 (http://sr.soc.surrey.ac.uk/SRU35.html).

3.8 RELIABILITY OF QUESTIONNAIRE

“Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. It is considered to be a measure of scale reliability. Cronbach's alpha is not a statistical test - it is a coefficient of reliability or consistency)” (http://www.ats.ucla.edu/stat/spss/faq/alpha.html). Coefficient of reliability has been conducted through SPSS 16.00 considering response of 50 respondents.

<table>
<thead>
<tr>
<th>Table 3.2: Case Processing Summary-Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
</tr>
<tr>
<td>Valid</td>
</tr>
<tr>
<td>Excluded</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

a. List wise deletion based on all variables in the procedure.

<table>
<thead>
<tr>
<th>Table 3.3: Reliability Statistics: Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach's Alpha Based on Standardized Items</td>
</tr>
<tr>
<td>N of Items</td>
</tr>
<tr>
<td>.882</td>
</tr>
<tr>
<td>.887</td>
</tr>
<tr>
<td>26</td>
</tr>
</tbody>
</table>

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The alpha coefficient for the twenty six items is 0.882, suggesting that the items have relatively high internal consistency. (As a reliability coefficient of 0.70 or higher is considered "acceptable" in most social science research situations.)

3.9 TOOL FOR DATA COLLECTION

Structured Interviews (http://www.qualres.org/HomeStru-3628.html) having following Characteristics has been administered for the study:

- Researcher asked each respondent the same series of questions in sequence of the questionnaire starting with personal information consisting of level of the employees in ONGC, his/her discipline in which he/she is working, age, posted at office/field, their qualification level as categorized in ONGC such as Q1, Q2, Q-3 and below (Q1 for Graduate Engineers & above, Q2 for Diploma Engineers/Post Graduate in Science/Arts/Commerce etc., Q3 for ITI holders or Graduation in Science/Arts/Commerce etc. and Below Q3 for others such as upto schooling etc.), Gender of the employee, his/her marital status and whether his/her partner is employed.

- Total 37 questions were administered and created prior to the interview out of which 28 questions were in 5 point Likert scale from strongly agree, Agree, Not agree nor disagree, disagree and strongly disagree and other were descriptive having options to suit their responses.

- There were little room for variation in responses and few open-ended questions were included in the interview. However, researcher allowed the respondents to have full participation to get more information.

- Questioning were standardized and the ordering and phrasing of the questions were kept consistent from interview to interview.

- Researcher played a neutral role and acted casual and friendly, but does not insert his or her opinion in the interview.
• Self-administered questionnaires were a type of structured interview.

The interview questions posed to the participants were derived from an extensive review of the Work-life literature and empirical evidence from HR periodicals.

3.10 DATA COLLECTION

The methods of collecting data for descriptive research can be employed singly or in various combinations, depending on the research questions at hand. Descriptive research often calls upon quasi-experimental research design (Campbell & Stanley, 1963). Some of the common data collection methods applied to questions within the realm of descriptive research include surveys, interviews, observations, and portfolios (http://www.aect.org/edtech/edl/41/41-01.html).

Data were collected through primary as well as secondary sources. Primary data were collected through personal interviews with each employee wherever possible and to collect data from remote locations questionnaire sent to the individual through personal approach to get required data. Secondary data were collected through newspaper, Journals, online resources and books.

Primary data were collected through a pre-set questionnaire and administered through an open personal interview allowing full participation from the respondents and covered all Central Tank Farm & Group Gathering Stations of ONGC situated at various locations such as Kalol Dist Gandhinagar, Nawagam Dist: Kheda, Sanand Dist Ahmedabad, Jhalora Dist: Ahmedabad, Viraj Dist: Ahmedabad, Desalter Plant - Nawagam, offices such as Main administrative wing (Avani Bhavan), Services such as Well Cementing Services, Well Logging Services, Artificial Lift Services, Well Stimulation Services, Workshops, Drilling Rigs, Work over Rigs and collected were compiled using excel worksheet to get desired information (Singh, 2013).
3.11 PROBLEM ENCOUNTERED IN DATA COLLECTION

Number of departments within ONGC with varying working schedule, round the clock exploration activities, scattered locations within 80 KM of radius covering four districts were the major problems for collection of Primary data. Moreover, lower cadre staff had taken much time to answer the question being communicating with their own language were the only solution to get the desired data keeping friendly environment. Collection of data from remote locations of the ONGC’s working installation was another problem being restricted timings of the transportation as varying routes of logistics services from where the employees picks their schedule ONGC’s Bus for particular location of their working. Being limited availability of timings at bus stands for interaction with employees working at remote location, the questionnaires were distributed to the senior officer of the crew for filling of questionnaire at their suitability and handing over back with prior intimation on phone so that the questionnaire may be collected from him.

Several times, the appointment for scheduled interview had to be cancelled and made afresh being the employees were busy with unexpected operational requirements at drilling sites/ work-over Rigs and couldn’t reach to the pre-set locations. Moreover, ongoing meetings were another limitations for which rescheduling of interviews were undertaken.

3.12 DATA ANALYSIS

Primary data were collected through interview schedule and a Lewis-Beck, M et al. (2004) reveals that “An interview schedule is the guide an interviewer uses when conducting a STRUCTURED INTERVIEW. It has two components: a set of questions designed to be asked exactly as worded, and instructions to the interviewer about how to proceed through the questions. The questions appear in the order in which they are to be asked. The questions are designed so they can be administered verbatim, exactly as they are written”.

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The collected data through structured interview were subsequently entered in MS-Excel format, tabulated as per requirement of research, edited to get desired data and subsequently coded and analyzed and interpreted. The data has been tabulated for desired objective of the study and presented in percentages. Correlation factor has been applied wherever possible and arithmetic Mean and Standard Deviation have also been computed wherever relevant.

On the bases of primary data, its analysis and interpretation, a report has been prepared and presented in following chapters:

**CHAPTER 4: DATA ANALYSIS**
Discusses the profile of Respondents starting with Work Profile covering Departments their Work Schedule and No of Working Hours per day, their Job Position and length of Service rendered at the time of interview and their Personal Profile consisting of Age, Qualification, Profession, Marital Status of the respondent

**CHAPTER 5: DATA ANALYSIS**

**CHAPTER 6: DATA ANALYSIS**
Analyzes whether Employee aspiration are meeting with organization growth and Work Life Balance covering Introduction, Employees’ Aspiration and Work Life Balance, Organization Growth and Work Life Balance and References
CHAPTER 7: DATA ANALYSIS
Discusses whether Employees of ONGC are able to balance their Work and Family Life and what means do they adopt to have proper Work Life Balance starting with Introduction, Employees Perception towards Family Life, and Employees Perception towards Work-Life Balance, Discussion, Conclusion and References.

CHAPTER 8: DATA ANALYSIS
Discusses the Quality Work Life Conditions which impacts the employees on their Family Relations and have impact on Work Life Balance starts with Introduction, Quality work life conditions and work life Balance, Impact of Quality Work Life Conditions on Family Relations and Work Life Balance and References.

CHAPTER 9: DATA ANALYSIS
Employees Individual Strategies for Work Life Balance has been discussed in this chapter starting with Introduction, Employees Work Priorities and work life Balance, Employees Family Priorities and Work Life Balance, Employees Dependent care and Work Life Balance and References.

CHAPTER 10: Strategies of ONGC on Work Life Balance has been deliberated in this chapter starting with Introduction, Defined career Path of Employees and Work Life Balance, Task Autonomy and Work Life Balance, Work Schedule Flexibility and Work Life Balance and References.

CHAPTER 11: ONGC’s initiatives and Programmes for Work Life Balance has been discussed in Chapter 11 starting with Introduction, Work Life Programmes covering Flexible Work Arrangements, Flexible Leave Arrangements, Health care Arrangements, Family Support Programmes,
CHAPTER 12: This chapter summarizes the study covering Introduction; A Concept on Work Life Balance, Literature Review, Objectives, Hypothesis, Sample, Tools Used, Statistical Techniques and concludes the findings and suggestions to the study and for further research as well.

3.13 LIMITATION OF THE STUDY

This study was conducted through personal interviews with the ONGC employees of Ahmedabad Asset covering from staff level to senior managerial level having varying work schedule right from dayshift, rotational shift and even working on 14 days on/off pattern. In total 1358 interviews were planned to conduct the study however 612 structured interviews were conducted being time constraint of employees working in remote locations of exploration activities of ONGC at Ahmedabad Asset and each interview was lasting between 20 Min to 45 min.

However, keeping in view of monetary requirements, time constraints & accuracy of sampling, Study was limited to Ahmedabad Asset considering a cluster or mini population of ONGC covering all operational area including offices, Drilling Rigs, Work over Rigs, various installations in order to have appropriate representation from different hierarchical levels, qualification, experience and age groups.
REFERENCE


