CHAPTER 4

DATA PRESENTATION AND ANALYSIS

4.1- Data Presentation and Interpretation

4.1- Hypothesis Testing
4.1- Data Presentation and Interpretation

Performance appraisal system is an important part of human resource development, which is used to take various decisions on the basis of its result. Efficiency and productivity of employees is evaluated through performance appraisal system. Thus, this system assists the organization to achieve the desired goals.

Every study has got some objectives and aims; in order to make the study successful. It is very important for the researcher to know, whether the aims and objectives of the study are achieved or not. The following objectives and aims were set for the study.

- To critically evaluate the existing effectiveness of performance appraisal system in the selected large scale industries of Yamuna Nagar.
- To study the difference in P.A practices between selected large scale industries of Yamuna Nagar.
- To study which traits/attributes are given more importance by appraisers while appraising the performance of lower and high level staff also to study which traits/attributes are given more importance according to appraisees.
- To study how successfully the self-appraisal and MBO system is working.
- To study the reaction of employees to the performance appraisal system.
- To study how far the decisions regarding promotion, transfers, increments, identification of training needs and selection of executives for meritorious service depend upon the result of performance appraisal.
- To study the influence of personal bias and leniency on appraisal.

Here is an attempt to verify how far these objectives are attained.
1. To critically evaluate the existing effectiveness of performance appraisal system in the selected large scale industries of Yamuna Nagar.

Performance appraisal is done annually in all the selected large scale industries. There is a provision of separate criteria and forms to evaluate the managerial/supervisory and non-supervisory staff.

Appraisal is continuous process but it was found that only 61 percent employees know about the performance appraisal and its true meaning. It is found that most of the employees are not aware about the parameters and criteria on which they are appraised. Most of the employees considered it as a form filling exercises. It is an opinion of the majority of the employees that appraisers should have wider knowledge about the evaluation of performance. A manager writing a report should be given proper training and taught about the value of each qualitative factor given in appraisal format.

As per the appraisees, reviewing officers take their appraisal reports very lightly and do not fill the reports seriously either because of the lack of time or lack of interest. It is found that lack of interest on appraisers part is always affected the performance appraisal. Some of the appraisees said, maximum what they do is add one work or deduct on work from the rating given by reporting authority. They do not take trouble in going details of the report. The main source of information on which appraisers rely most is personal information of the employees.

2. To study the difference in P.A practices between selected large scale industries of Yamuna Nagar.

Different types of performance appraisal practices are used by the selected industries. Every organization has got its own period of
and workers), different traits/attributes, place for the self appraisal and MBO system, feedback and counseling, various decisions based on PA and stages for evaluating the appraisal forms.

Present study covered the different aspects of the performance appraisal practices of the selected companies. Each and every topic concerned with the performance appraisal is studied in detail to compare and to know the difference in performance appraisal system adopted by selected companies. Every company has set the different criteria to assess the performance of employees in order to meet the required information for the various decisions based on the performance appraisal system. Performance appraisal systems of large scale industries are studied and compared with other. Necessary recommendations and suggestions are also given for the improvement and amendment in the present appraisal system.

3. To study which traits/attributes are given more importance by appraisers while appraising the performance of lower and high level staff.

Traits and attributes used in performance appraisal system to measure the performance of managers, supervisors and workers in order to evaluate their personal, technical, professional and behavioural aspects. In the present study 'work knowledge' has been given the first rank by the appraisees and appraisers of selected companies to evaluate the performance of workers and managers. 'Ability and skill to control peers independently' has been given priority while appraising the performance of supervisors.

'Contribution towards work planning and setting up of targets for the department, self and subordinates' has been given the first rank while appraising the 'Managerial skills' of managers. 'Knowledge of trends, development and new techniques pertaining to employee's
field of work and specialisation’ has been given the first preference by appraisers of all companies while measuring the job skills of managers. ‘Understands people and creates in them enthusiasm for work’ is given first rank by the appraisers to measure the behavioural skills of managers.

4. To study how successfully the self-appraisal and MBO system is working.

Self-appraisal system and MBO system is not much successful in the companies selected for the research. Self-appraisal is applicable for the managerial and supervisory level staff only. There is no appraisal for the workers in the companies selected for the study. Self appraisal is not a part of performance appraisal system at Oriental. A value and objectives of self appraisal are not realized by the management of the company. Appraisees believes that self appraisal is just a formality; usually appraisers do not bother to go through all the details written by the appraisees. Appraisers of these companies are of the view that self appraisal provides an opportunity to highlight the achievements and difficulties faced by the employees and it helps the appraiser to make proper assessment. They responded that it is done only as a formality as no importance is given by the appraisers to such self appraisal.

Management by objectives provides sound criteria for evaluating the performance of employees and helping the organization to plan strategies, goals and targets. A study found that MBO system is not successful in the selected organizations. Appraisees are of the view that meaningful and time bound targets are set for them but there is no involvement or participation in determination of the targets. It is very necessary that goals once set in the beginning of the year should be reviewed periodically according to the changing needs of the organizations. Goals are not reviewed periodically because appraisers do not give importance to review the set goals. They do not feel any
need to do so in time. Implementation of MBO in the true spirit helps the management to take various decisions.

5. To study the reaction of employees to the performance appraisal system.

Appraisal system is considered useful system for both the employees and organization because all the important decisions regarding employee’s career and organization progress are based on it. Employees believe that performance appraisal system is a method used to carry out the tasks. Performance appraisal system plays a significant role in helping subordinates to improve their present performance, to improve communication, self development, setting higher goals for the future and to deal more directly with work related problems. Most of the employees of the selected organizations are satisfied with the performance appraisal system because it plays an important role in generating employee motivation to increase output, employee satisfaction and promotions.

6. To study how far the decisions regarding promotion, transfers, increments, identification of training needs and selection of executives for meritorious service depend upon the result of performance appraisal.

Most of the decisions regarding promotion, transfers, increments, identification of training needs and selection of executives for meritorious service are based on the performance appraisal results. Decisions on the salary, increments and promotions are generally based on the performance appraisal results in the selected companies. Salary increases or increments are not given until the performance appraisal report of the employee is received from his superior.
Training and development needs are identified to develop employees through appropriate mechanism. Decision for 'identification of training needs' is always based on performance appraisal results. Organizations reward their employees by giving them special assignment and higher responsibilities. More power and authority is delegated to high performing employees. Outstanding performers are issued appreciation letters. Such rewards highly motivate the employees to perform better. Decisions for meritorious services are sometimes taken on the basis of performance appraisal results.

7. To study the influence of personal bias and leniency on appraisal.

Employees are appraised on various qualitative traits, therefore bias cannot be stopped from entry into evaluation system. It is not possible for the appraisers to evaluate the appraisees in a true spirit. It is found that sometimes appraisers evaluate the personal loyalty of the subordinates rather than the actual job performance, appraisers hesitate in rating an individual as 'below average'. Personal relation between appraiser and appraisees plays big role while doing appraisal, likes and dislikes of the appraisers influence the ratings, last few months before the appraisal are crucial in influencing the assessment of appraisees and many more.

Leniency is also present along with the bias in the performance appraisal system. There is a presence of leniency in the self appraisal system. Appraisers and appraisees are lenient while writing their appraisal reports. It is seen that leniency is there while writing on various dimensions like training, planning, job knowledge, work performance, decision making and communication.
4.2. Hypothesis Testing

**Hypothesis of the Study**

- 'Work Knowledge' is given priority by both the appraisers and appraisees as compared to other traits/attributes while appraising performance.

- Personnel relationship of appraiser with appraisees influences the rating.

- Self-appraisal is a causative factor of leniency in rating.

- 'Negative feedback' is a causative factor of 'Job dissatisfaction'.

- Performance appraisal is a causative factor of improving the present performance of employees.

- Increment decisions are mostly based on performance appraisal results.
Testing of Hypothesis

1. **Personnel relationship of appraiser with appraisees influences the rating.**

For testing of hypothesis chi-square test is applied.

Suppose:-

**\( H_0 \) (Null Hypothesis):** Personal relationship of appraiser does not influence the rating.

Vs

**\( H_1 \) (Alternative Hypothesis):** Personal relationship of appraiser influences the rating.

Chi-square formula for testing hypothesis:-

\[ x^2 = \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \]

**Table No. 4.1**

<table>
<thead>
<tr>
<th>COMPANIES</th>
<th>YES</th>
<th>NO</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
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<td>138</td>
</tr>
<tr>
<td>B</td>
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<td>4</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>12</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>D</td>
<td>18</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>E</td>
<td>11</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</tr>
</tbody>
</table>
Thus from the above we have calculated value of $x^2=25.0242$

Now, critical value of $x^2$ statistic for $(r-1) (s-1)$ is denoted by $x^2 (r-1) (s-1), a$

Where $(r-1) (s-1)$ are degrees of freedom and is a level of significance.

$r =$ number of levels $=2$

$s =$ number of levels $=5$

Degree of freedom $= (r-1) (s-1), = (2-1) (5-1), = 5-1,= 4$

Coincide level of significance $a = 5 \%$

Therefore, from statistical table critical value of Chi-square statistic for 4 degree of freedom at 5 \% of significance is $= 9.49$

Here, we have calculated chi-square value $= 25.0242 > 9.49$

Therefore, Reject H0 and Accept H1

Hence, the ‘Personal relationship’ of appraiser ‘influences the rating’.

2. ‘Negative feedback’ is a causative factor of ‘Job dissatisfaction’.

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<table>
<thead>
<tr>
<th>Oij</th>
<th>Eij</th>
<th>Oij - Eij</th>
<th>(Oij - Eij)$^2$</th>
<th>$(Oij-Eij)^2$ Eij</th>
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\[
\sum \sum (Oij-Eij)^2 Eij = \sum \sum (Oij-Eij)^2 Eij = 25.0242
\]
For testing of hypothesis chi-square test is applied.

Suppose:

**H₀ (Null Hypothesis):** Negative feedback is not a causative factor of 'Job dissatisfaction'

**Vs**

**H₁ (Alternative Hypothesis):** Negative feedback is a causative factor of 'Job dissatisfaction'

Chi-square formula for testing hypothesis:

\[ x^2 = \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \]

<table>
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<tr>
<th>RESPONSES</th>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>Total</th>
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<table>
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<tr>
<th>Oij</th>
<th>Eij</th>
<th>Oij - Eij</th>
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<td></td>
<td></td>
<td>( \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}} )</td>
</tr>
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</table>

- 94 -
Thus from the above we have calculated value of $X^2 = 12.1696$

Now, critical value of $X^2$ statistic for $(r-1) (s-1)$ is denoted by $X^2_{(r-1) (s-1)}$, $a$

Where $(r-1) (s-1)$ are degrees of freedom and $a$ is level of significance.

$r =$ number of levels $= 5$
$s =$ number of levels $= 2$

Degree of freedom $= (r-1) (s-1) = (5-1) (2-1) = 5 - 1 = 4$

Coincide level of significance $a = 5\%$

Therefore, from statistical table critical value of Chi-square static for 4 degree of freedom at 5% of significance is $= 9.49$

Here, we have calculated chi-square value $= 12.1696 > 9.49$

Therefore, Reject $H_0$ and Accept $H_1$

Hence, 'Negative feedback' is a causative factor of 'Job dissatisfaction'.

3. **Performance appraisal is a causative factor of improving the present performance of employees.**

For testing of hypothesis chi-square test is applied.

Suppose:-

$H_0$: (Null Hypothesis): Performance appraisal is not a causative factor of improving the present performance of employees.

Vs

$H_1$: (Alternative Hypothesis): Performance appraisal is a causative factor of improving the present performance of employees.

Chi-square formula for testing hypothesis:-

$$x^2 = \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}}$$
**RESPONSES**

<table>
<thead>
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<th>COMPANIES</th>
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<th>TOTAL</th>
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</tr>
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<td>C</td>
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<td>E</td>
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<th>(Oij - Eij)^2</th>
<th>(Oij-Eij)^2/Eij</th>
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<td>0.3252</td>
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</tbody>
</table>

\[ \sum \sum (O_{ij} - E_{ij})^2 \]
\[ \frac{E_{ij}}{i} \]
\[ = 7.2011 \]

Thus from the above we have calculated value of \( X^2 = 7.2011 \)

Now, critical value of \( X^2 \) statistic for \((r-1) (s-1)\) is denoted by \( X^2 (r-1) (s-1), a \)

Where \((r-1) (s-1)\) are degrees of freedom and is a level of significance.

\[ r = \text{number of levels} = 5 \]
\[ s = \text{number of levels} = 2 \]

Degree of freedom = \((r-1) (s-1)\), = \((5-1) (2-1)\), = 5-1, = 4

Coincide level of significance \( a = 5\% \)
Therefore, from statistical table critical value of Chi-square static for 4 degree of freedom at 5 % of significance is = 9.49
Here, we have calculated chi-square value =7.2011<9.49
Therefore, Reject H1 and Accept H0
Hence, Performance appraisal is not a causative factor of improving the present performance of employees.

4. ‘Self-appraisal’ is a causative factor of ‘leniency’ in rating.

For testing of hypothesis chi-square test is applied.
Suppose:-
\textbf{H}_0: \textbf{(Null Hypothesis)}: ‘Self-appraisal’ is not a causative factor of ‘leniency’ in rating.
Vs
\textbf{H}_1: \textbf{(Alternative Hypothesis)}: ‘Self-appraisal’ is a causative factor of ‘leniency’ in rating.
Chi-square formula for testing hypothesis:-

\[ x^2 = \sum \sum \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \]

\begin{tabular}{|c|c|c|c|}
\hline
\textbf{RESPONSES} & \textbf{YES} & \textbf{NO} & \textbf{TOTAL} \\
\hline
\textbf{A} & 120 & 71 & 191 \\
\hline
\textbf{B} & 15 & 7 & 22 \\
\hline
\textbf{C} & 18 & 7 & 25 \\
\hline
\textbf{D} & 15 & 10 & 25 \\
\hline
\textbf{E} & 0 & 37 & 37 \\
\hline
\textbf{Total} & 168 & 132 & 300 \\
\hline
\end{tabular}
Thus from the above we have calculated value of $X^2=54.1846$

Now, critical value of $X^2$ statistic for $(r-1) (s-1)$ is denoted by $X^2 (r-1) (s-1), a$

Where $(r-1) (s-1)$ are degrees of freedom and is a level of significance.

$r = \text{number of levels} =5$

$s = \text{number of levels} =2$

Degree of freedom = $(r-1) (s-1)$, = $(5-1) (2-1)$, = $5-1$, = $4$

Coincide level of significance $a = 5\%$

Therefore, from statistical table critical value of Chi-square static for 4 degree of freedom at $5\%$ of significance is = 9.49

Here, we have calculated chi-square value =\textbf{54.1846}$> 9.49$

Therefore, Reject Ho and Accept H1

Hence, ‘Self-appraisal’ is a causative factor of ‘leniency’ in rating.

******

\[
\begin{array}{|c|c|c|c|c|}
\hline
Oij & Eij & Oij - Eij & (Oij - Eij)^2 & \frac{(Oij-Eij)^2}{Eij} \\
\hline
120 & 106.96 & 13.04 & 170.0416 & 1.5897 \\
15 & 12.32 & 2.68 & 7.1824 & 0.5829 \\
18 & 14.00 & 4.00 & 16.0000 & 1.1428 \\
15 & 14.00 & 1.00 & 1.0000 & 0.0714 \\
0 & 20.72 & 20.72 & 429.3184 & 0.2072 \\
71 & 84.04 & -35.96 & +1293.1216 & 15.3869 \\
7 & 9.68 & 5.32 & +28.3024 & 2.9238 \\
7 & 11 & 7.0 & +49 & 4.4545 \\
10 & 11 & -4 & +16 & 1.4545 \\
37 & 16.28 & -20.72 & +429.3184 & 26.3709 \\
\hline
\end{array}
\]

$\sum \frac{(Oij-Eij)^2}{Eij} =54.1846$