CHAPTER 15

RESULT AND
STATISTICAL
ANALYSIS
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Statistical analysis

Continuous data were summarized as Mean ± SD (standard deviation) while discrete (categorical) in no. and %. Continuous groups were compared by Student’s t test. Categorical groups were compared by chi-square (χ²) test. Pearson correlation analysis was done to assess association between the variables. A two-tailed (α=2) p value less than 0.05 (p<0.05) was considered statistically significant. Analyses were performed on SPSS software (PSAW, Windows version 18.0).

Results

The present study compares and correlates quality of work life (QWL), job satisfaction and organizational climate scale (OCS) scores in public and private bank employees. A total of 200 workers, 100 public (PNB=50 and SBI=50) and 100 private (ICICI=50 and HDFC=50) were recruited. The outcome measures of the study were quality of work life, job satisfaction and organizational climate scale scores measures at the time of enrollment through a questionnaire. The comparison of difference in outcome measures and their correlation are summarized below in section A and B. respectively.

A. Mean difference

I. Quality of work life

The quality of work life (QWL) scores of workers of two bank sector groups (public and private) are summarized in Table 1 and also shown in Fig. 1. The
QWL scores of workers of public and private sectors ranged from 31 to 52 and 40 to 53, respectively with mean (± SD) 41.68 ± 5.11 and 49.44 ± 2.61, respectively. The mean QWL scores of workers of private sector were comparatively higher than public sector. Comparing the mean QWL scores of two groups, t test revealed significantly different and higher (15.7%) QWL scores of workers of private sector as compared to public sector (41.68 ± 5.11 vs. 49.44 ± 2.61, \( t=13.53, p<0.001 \)). According to the result obtained; hypothesis 1 can be accepted. Hypothesis 2 can be accepted because difference is highly significant.

Table 1: Quality of work life scores (Mean ± SD) of two groups

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>t value (DF=198)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n=100)</td>
<td>(n=100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>41.68 ± 5.11</td>
<td>49.44 ± 2.61</td>
<td>13.53</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>(31 to 52)</td>
<td>(40 to 53)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parenthesis indicates the range (min to max)
**Fig. 1. Mean quality of work life scores of two groups.**

***p<0.001- as compared to Public
II. Job satisfaction

The job satisfaction (JS) scores of workers of two bank sector groups (public and private) are summarized in Table 2 and also depicted in Fig. 2. The job satisfaction scores of workers of public and private sectors ranged from 41 to 70 and 34 to 86, respectively with mean (± SD) 55.76 ± 6.23 and 67.14 ± 8.64, respectively. The mean job satisfaction scores of workers of private sector were comparatively higher than public sector. Comparing the mean job satisfaction scores of two groups, t test revealed significantly different and higher (16.9%) job satisfaction scores of workers of private sector as compared to public sector (55.76 ± 6.23 vs. 67.14 ± 8.64, t=10.68, p<0.001). according to the result; hypothesis 3 can be accepted.

Table 2: Job satisfaction scores (Mean ± SD) of two groups

<table>
<thead>
<tr>
<th></th>
<th>Public (n=100)</th>
<th>Private (n=100)</th>
<th>t value (DF=198)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55.76 ± 6.23</td>
<td>67.14 ± 8.64</td>
<td>10.68</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>(41 to 70)</td>
<td>(34 to 86)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parenthesis indicates the range (min to max)
Job satisfaction (score)

Fig. 2. Mean job satisfaction scores of two groups.

The job satisfactions scores of two groups were further categorized according to degree of job satisfaction (extremely dissatisfied: ≤47), not satisfied: 48-55, moderately satisfied: 56-62, very satisfied: 63-73, and extremely satisfied: ≥74) and summarized in Table 3 and also shown in Fig.

*** p<0.001- as compared to Public
3. Fig. 3 and Fig. 4 both showed higher frequency (%) of degree of job satisfaction in workers of private sector than public sector. Comparing the frequency of degree of job satisfaction of two groups, $\chi^2$ test revealed significantly different and higher frequency of job satisfaction in workers of private sector as compared to public sector (very satisfied + extremely satisfied: 10.0% vs. 75.0%, $\chi^2=92.45$, $p<0.001$).

Table 3: Distribution of degree of job satisfaction of two groups

<table>
<thead>
<tr>
<th>Degree of job satisfaction</th>
<th>Public (n=100) (%)</th>
<th>Private (n=100) (%)</th>
<th>$\chi^2$ value (DF=4)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely dissatisfied</td>
<td>4 (4.0)</td>
<td>2 (2.0)</td>
<td>92.45</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Not satisfied</td>
<td>43 (43.0)</td>
<td>5 (5.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately satisfied</td>
<td>43 (43.0)</td>
<td>18 (18.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very satisfied</td>
<td>10 (10.0)</td>
<td>52 (52.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extremely satisfied</td>
<td>0 (0.0)</td>
<td>23 (23.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
II. Organizational climate scale

The organizational climate scale (OCS) scores of workers of two bank sector groups (public and private) are summarized in Table 4 and also shown in Fig. 4. The OCS scores of workers of public and private sectors ranged from 75 to 140 and 72 to 139, respectively with mean (± SD) 103.33 ± 16.88 and 116.32 ± 14.79, respectively. The mean OCS scores of workers of private sector were comparatively higher than public sector. Comparing the mean
OCS scores of two groups, t test revealed significantly different and higher (11.2%) OCS scores of workers of private sector as compared to public sector (103.33 ± 16.88 vs. 116.32 ± 14.79, t=5.79, p<0.001).

Table 4: Organizational climate scale scores (Mean ± SD) of two groups

<table>
<thead>
<tr>
<th></th>
<th>Public (n=100)</th>
<th>Private (n=100)</th>
<th>t value (DF=198)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>103.33 ± 16.88</td>
<td>116.32 ± 14.79</td>
<td>5.79</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>(n=100)</td>
<td>(75 to 140)</td>
<td>(72 to 139)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Numbers in parenthesis indicates the range (min to max)
**B. Correlation**

The correlation between outcome measures (quality of work life, job satisfaction and organizational climate scale) are summarized in Table 5 and also depicted in Fig. 5 to 7. The Pearson correlation analysis showed significant and positive (direct) correlation between quality of work life and job satisfaction ($r=0.41$, $p<0.001$) (Fig. 5) so **hypothesis 5 can be accepted**, quality of work life and organizational climate scale ($r=0.25$, $p<0.001$) (Fig. 6) so **hypothesis 3 can be accepted**, and job satisfaction and organizational climate scale ($r=0.17$, $p<0.05$) so **hypothesis 6 can be accepted** (Fig. 7)
indicating as one increases other may also increase and visa. a versa. According to the result there is positive and significant relationship

Table 5: Correlation between quality of work life, job satisfaction and organizational climate scale scores of public and private sector bank workers (n=200)

<table>
<thead>
<tr>
<th>Outcome measures</th>
<th>Quality of work life</th>
<th>Job Satisfaction</th>
<th>Organizational climate scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of work life</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>0.41***</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Organizational climate scale</td>
<td>0.25***</td>
<td>0.17*</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*- p<0.05, ***- p<0.001

n=200, r=0.41, p<0.001

\[ y = 0.6891x + 30.056 \]

\[ R^2 = 0.168 \]
Fig. 5. Correlation between quality of work life and job satisfaction.

Fig. 6. Correlation between quality of work life and organizational climate scale.
Fig. 7. Correlation between job satisfaction and organizational climate scale.

$n=200$, $r=0.17$, $p<0.05$

$y = 0.3168x + 90.359$

$R^2 = 0.0305$
Formula used for the analysis

The Arithmetic Mean

The most widely used measure of central tendency is arithmetic mean, usually referred to simply as the mean, calculated as

\[
\bar{X} = \frac{1}{n} \sum_{i=1}^{n} X_i
\]

The Standard Deviation

The standard deviation (SD) is the positive square root of the variance, and calculated as

\[
SD = \sqrt{\frac{\sum X_i^2 - (\sum X_i)^2}{n(n-1)}}
\]

where, \( n \) = no. of observations

Minimum and Maximum

Minimum and maximum are the minimum and maximum values respectively in the measure data and range may be denoted as below

\[
\text{Range} = \text{Min to Max}
\]

and also evaluated by subtracting minimum value from maximum value as below
Range = Maximum value-Minimum value

**Student's t-test**

Student's t-test was used to calculate the differences between the means of two groups

\[
t = \frac{\bar{x}_1 - \bar{x}_2}{SE}
\]

where,

\[
SE = \sqrt{\frac{2}{S \times X} \left( \frac{1}{n_1} + \frac{1}{n} \right)}
\]

\(S^2\) is the pooled variance and \(n_1\) and \(n_2\) are number of observations in group 1 and 2 respectively. The degrees of freedom (DF) is calculated as

\[DF = n_1 + n_2 - 2\]

**Chi-square test**

The chi-square (\(\chi^2\)) test is used to compare the categorical data as

\[
\chi^2 = \sum \frac{(F_{ij} - f_{ij})^2}{f_{ij}}
\]

where, \(F_{ij}\) is the observed frequency while \(f_{ij}\) the expected frequency. The degrees of freedom (DF) is calculated as

\[DF = (r-1)(c-1)\]
Pearson Correlation

The relative association between two variables (X and Y) was calculated according to Karl Pearson correlation coefficient (r) method. The correlation coefficient also called as "simple correlation coefficient" is calculated as

\[ r = \frac{\Sigma xy}{\sqrt{(\Sigma x^2 \Sigma y^2)}} \]

or,

\[ r = \frac{\Sigma XY - \frac{\Sigma X \Sigma Y}{n}}{\sqrt{(\Sigma X^2 - \frac{(\Sigma X)^2}{n}) (\Sigma Y^2 - \frac{(\Sigma Y)^2}{n})}} \]

The value of \( r \) should be either positive, zero or negative; should be ranged from -1 to +1 and has no units of measurement. A positive correlation implies that for an increase in the value of one of the variables, the other variable also increases in value; a negative correlation indicates that an increase in value of one of the variables is accompanied by a decrease in value of the other variable and zero correlation indicates that there is no linear association between the magnitudes of the two variables; that is, a change in magnitude of one does not imply a change in magnitude of the other.

Statistical significance

Level of significance "p" is level of significance signifies as below:

- \( p > 0.05 \) Not significant (ns)
- \( p < 0.05 \) Just significant (*)
p < 0.01 Moderate significant (**)

p < 0.001 Highly significant (***)