CHAPTER - 8
RESEARCH FINDINGS:
DATA ANALYSIS AND CONCLUSIONS-STAGE-II (PART-II)

8.1. INTRODUCTION

The Corporate Offices of the banks selected for the study viz, HDFC Bank, IDBI Bank, Citi Bank, Indian Bank, UCO bank and United Bank of India were visited by the researcher. In addition, some selected branches of these banks were also visited in Mumbai and Ahmedabad. During these visits a survey was conducted among the senior officials of the bank (Executive survey). The survey contained 43 statements to which the answers were to be indicated in the form of expressions indicating its true applicability to their organisation as below:

Very True; True to a great extent; Partially True; Not true at all.

Further, there were seven statements aimed at rating of various qualitative aspects of the services of the bank in comparison to that offered by the competitors. A copy of the survey/questionnaire is given in Appendix-II. The details of the survey are as under:

Table: 56

<table>
<thead>
<tr>
<th>Name of the Bank</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>15</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>17</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>14</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>15</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>14</td>
</tr>
<tr>
<td>UBI</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>91</td>
</tr>
</tbody>
</table>

8.2. Data analysis and Testing of Hypotheses:

The survey/questionnaire had incorporated some statements investigating the possible link between (1) Organisational Design and Customer Service; (2) Human Resources Practices and Customer Service, and, (3) Initiative for motivating employees and customer service, etc. The questionnaire directed the respondents to indicate whether they agree with the
accuracy of the statements with regard to their institution. As indicated earlier, the three hypotheses are to be tested using statistical tools. Each of these hypotheses and the data analysis for testing the same are given below:

8.2.1. Hypothesis-I:
“An appropriate and conducive organisational design that promotes competitive efficiency results in achievement of excellence in customer service in a competitive environment.”

In order to test the hypothesis, a statement in the survey questionnaire relevant to the context has been chosen. (Other associated statements have been subjected to regular statistical analysis and have been given in subsequent paragraphs.)

(a) Statement:
‘The organisational design which emphasizes functional teams/task oriented groups has a direct influence on the quality of services rendered at delivery points’.

The responses to this statement from executives of various banks are as below:

<table>
<thead>
<tr>
<th>Name of the Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
<th>Total no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>6 40%</td>
<td>9 60%</td>
<td>-</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>7 41.1%</td>
<td>9 53%</td>
<td>1 5.9%</td>
<td>-</td>
<td>17</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>6 42.9%</td>
<td>8 57.1%</td>
<td>-</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>- -</td>
<td>3 20.0%</td>
<td>9 60.0%</td>
<td>3 20.0%</td>
<td>15</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>- -</td>
<td>4 28.5%</td>
<td>8 57.2%</td>
<td>2 14.3%</td>
<td>14</td>
</tr>
<tr>
<td>UBI</td>
<td>- -</td>
<td>4 25%</td>
<td>12 75%</td>
<td>-</td>
<td>16</td>
</tr>
</tbody>
</table>
It may be observed from the above that all the respondents in the case of banks which received higher rating for customer service, viz. HDFC Bank, IDBI Bank and Citi Bank have agreed with the statement by indicating either ‘very true’ or ‘to a great extent’. On the other hand, the banks where the customer rating received was on the lower side, majority indicated that the statement is ‘partially true’ or ‘not true at all’. As functional team/task orientation has been observed to have been an integral part of the organisational design of the three banks, it is established that quality of services is better in organisations where appropriate organisational design has been ensured. In the case of bank which do not have such enabling designs, the service rating received has been at lower levels.

In order to test the hypothesis two variables have been taken. They are,

(1) The percentage of the number of executives who stated that the statement is ‘true to a great extent’. This response has been chosen for analysis as responses have been received from all banks against this option (variable X).

(2) The percentage of customers who gave ‘very good rating to the bank for the customer service (variable Y). This response, again, has been chosen (instead of excellent rating) as responses are available from all banks under this category. The data with regard to the two variables has been given in the table below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Percentage of people giving ‘very good’ rating (Y)</th>
<th>Percentage of executives who agreed with the statement to a great extent (X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21.0</td>
<td>60.0</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14.0</td>
<td>53.0</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>16.0</td>
<td>57.0</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>4.0</td>
<td>20.0</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>4.0</td>
<td>29.0</td>
</tr>
<tr>
<td>UBI</td>
<td>2.0</td>
<td>25.0</td>
</tr>
</tbody>
</table>

The correlation and Regression analyses are as given under:

‘Y’ – Dependent variable (% of customers who rated the bank’s service as ‘very good’).

‘X’ – Independent variable (% of executives who agreed with the statement to a great extent).
The following symbols are used in the calculations of Correlation and regression.

\[
\begin{align*}
\bar{X} &= X; \quad x = X - \bar{X}; \\
\bar{Y} &= Y; \quad y = Y - \bar{Y}
\end{align*}
\]

Where ‘N’ is the pair of data used in the calculation.

Coefficient of Correlation = \( r \); Regression Coefficient = \( b_{yx} \)

\( N = 6 \)

A. Coefficient of Correlation:

\[
\begin{align*}
\rho &= \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sum y^2}} = \frac{679}{\sqrt{1602 \cdot 329}} = 0.97
\end{align*}
\]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

Standard of Error \( [SE(r)] \):

\[
SE(r) = \sqrt{1 - r^2} = \sqrt{1 - 0.94} = 0.024
\]

Probable Error \( [PE (r)] \):

\[
PE (r) = 0.6745 \times SE(r) = 0.6745 \times 0.024 = 0.016
\]

Significance of Correlation Coefficient:

\[
r = 0.97 \quad 6 \times PE (r) = 0.96
\]

As correlation coefficient is more than 6 \( PE (r) \), the correlation coefficient is Significant.

T-Test of Correlation Coefficient:

As explained in the section on ‘tools of analysis used’, it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has used in this analysis and the calculations are as below:

\[
t = \frac{r \sqrt{N-2}}{\sqrt{1 - r^2}} = \frac{0.97 \times \sqrt{6-2}}{\sqrt{1 - (0.97)^2}} = 16.2
\]

The standard value for “t” for a value of \( N-2 \) at a confidence level of 5% is:
As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

**B. Regression Analysis**

Y is the dependent variable and X is the independent variable.

Regression Coefficient of Y on X:

\[
\beta_{YX} = \frac{N \sum XY - \sum X \sum Y}{N \sum X^2 - \sum X^2}
\]

\[
= \frac{[6 \times 3160] - [244 \times 61]}{[6 \times 11524] - [244 \times 244]} = 0.42
\]

Equation on Regression Line

\[
Y - \bar{Y} = \beta_{YX} (X - \bar{X})
\]

\[
Y - 10 = 0.42 (X - 41)
\]

\[
Y = 0.42 X - 7.22
\]

**T-test of Regression Coefficient:**

1. Calculation of Variance of X’s

\[
(Sx)^2 = \frac{\sum (X - \bar{X})^2}{N-1} = 1602 = 320.40
\]

\[
Sx = \sqrt{320.40} = 17.9
\]

2. Calculation of Variance of Y’s

\[
S^2_{xy} = \frac{\sum (Y - \bar{Y} - r (X - \bar{X})^2}{N-2} = 21.23 = 5.30
\]

\[
Syx = \sqrt{5.30} = 2.30
\]
\[ t = r^* \frac{Sx}{\sqrt{N-1}} = \frac{0.42 \times 17.9}{2.3 / \sqrt{6-1}} = 7.30 \]

(* same as byx)

The critical value of \( t \) for \( N-2 \) at the confidence level of 5% is:
\[ t_{4.05} = 2.132 \]

As "\( t \)" calculated is more than the "\( t_{4.05} \), the critical value, \( 'r' \)-regression coefficient - is significant. Hence reject null hypothesis.

[#The details of the calculation of \( x, x^2, y, y^2, xy, XY, X, Y \) etc. are given in Appendix.

XVII.]

The results of the correlation/regression analysis given above clearly establishes the hypothesis that 'an appropriate and conducive organisational design that promotes competitive efficiency results in achievement of excellence in customer service in a competitive environment'.

Some of the other statements in the questionnaire, the responses to which support this hypothesis are given below:

(b) Statement:
‘The flatter organisational design (limited hierarchy) ensures better control, faster and effective communication as well as decision making which in turn enhances organisational effectiveness.

The responses to the statement from various banks are:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>53.3%</td>
<td>40.0%</td>
<td>6.7%</td>
<td></td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>58.8%</td>
<td>41.2%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Citi Bank</td>
<td>100%</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>26.7%</td>
<td>73.3%</td>
<td>-</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>-</td>
<td>28.6%</td>
<td>71.4%</td>
<td>-</td>
</tr>
<tr>
<td>UBI</td>
<td>-</td>
<td>31.3%</td>
<td>68.7%</td>
<td>-</td>
</tr>
</tbody>
</table>

While analysing the statistics, 'Very True' and 'True to a great extent' may be considered as clear positive response confirming the applicability of the statement to their organisation. It may be observed from the table that the percentage of respondents who
have given the response as ‘Very True’ and ‘True to a great extent’ in the case of banks where the customer rating for service is excellent are as below:

HDFC Bank: 93.3%
IDBI Bank: 99.2%
Citi Bank: 100%

This is in contrast to the lower percentage recorded in the case of banks which received comparatively lower rating for quality of customer service, viz, Indian Bank, UCO Bank and UBI which was 26.7%, 28.6% and 31.3% respectively. Since it has been observed in the organisational analysis undertaken earlier that banks like HDFC Bank, IDBI Bank and Citi Bank have a comparatively flatter organisational structure at the top, the response of the executives further supports the hypothesis that a conducive organisational design that promotes competitive efficiency results in achievement of excellence in customer service in a competitive environment.

(c) Statement:

“The organisational design as well as roles and functions of divisions (segments/groups) have a ‘Customer-Focus Structure’ (rather than resource allocation structure) in view of the need for focussing resources to satisfy customer needs at delivery points”.

The response to the statements from various banks are as under:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>26.7%</td>
<td>53.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>82.4%</td>
<td>17.6%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>71.4%</td>
<td>14.3%</td>
<td>14.3%</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>33.3%</td>
<td>66.7%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>28.6%</td>
<td>71.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>UBI</td>
<td>25.0%</td>
<td>75.0%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

It may be observed from the above that the percentage of respondents who have stated that the statement is ‘Very True’ or ‘True to a great extent’ for the banks which received excellent rating for customer service are as under:

HDFC Bank: 80%; IDBI Bank: 100%; Citi Bank: 85.7%

On the other hand the percentage of respondents in this category in the case of banks with comparatively lower rating for quality of service, viz. Indian Bank, UCO Bank and UBI is
During the organisational study, it was revealed that the banks with better customer rating of their services created special structures for customer-focus in branches like Relationship Executive/Officer, Special Relationship officials for taking care of the bank dealings of ‘Preferred Customers’, ‘High Net worth’ customers, segment-wise relationship officers, etc. On the other hand, special sales teams are available in the Corporate Office, especially for some segments. These banks have also established special services for NRIs which can be accessed through internet. These kinds of customer-focussed structures have had its own impact on the quality of customer service rendered by these banks. In this context, it is clear and evident that there is a link between the ‘customer-focus’ structure and quality of service delivered. Hence the response of the executives amply support the hypothesis that ‘a conducive organisational design that promotes competitive efficiency’ results in achievement of excellence in customer service in a competitive environment.

### 8.2.2 Hypothesis – II

“Banking Organisations that practice professional and result oriented human resources management render quality customer service”.

In order to test the hypothesis, three (3) statements in the survey questionnaire which are relevant to the context have been chosen (other associated statements have been subjected to regular statistical analysis and have been given in subsequent paragraphs.

(a) **Statement**

“The system envisages allocation of a person to a specific functional area and specialisation enabling absolute expertise in the services rendered”.

The responses to this statement from executives of various banks are as below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>46.7%</td>
<td>53.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>53.0%</td>
<td>47.0%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>35.8%</td>
<td>50.0%</td>
<td>14.2%</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>20.0%</td>
<td>20.0%</td>
<td>60.0%</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>14.3%</td>
<td>21.4%</td>
<td>64.3%</td>
<td>-</td>
</tr>
<tr>
<td>UBI</td>
<td>6.2%</td>
<td>25.0%</td>
<td>68.8%</td>
<td>-</td>
</tr>
</tbody>
</table>
It may be observed from the above that all the respondents of HDFC Bank and IDBI bank have mentioned that the statement is ‘Very True’ or ‘True to a great extent’. In the case of Citi bank the percentage of executives giving the same rating has been 85.8%. It is evident from the above that there is a strong link between the quality of service and the HR practice of allocating personnel to a specific functional area so that the official develops expertise in the service rendered. The percentages in the case of other banks where the customers have given a comparatively lower rating is less at 20%, 14.3% and 6.2% for Indian Bank, UCO Bank and UBI respectively. It is quite evident that creating specialised segments which is a healthy HR practice of these banks have an impact on the quality of customer service rendered.

In this context it may, however, be observed that lateral mobility to other areas of functioning is allowed at middle/ higher levels. This is a part of career movement but the specialization at the customer-contact point is generally existent in all the banks with excellent service ratings.

In order to test the hypothesis, two variables have been taken. They are,

(1) the percentage of the executives who stated that the statement is ‘true to a great extent’. This response has been taken for analysis as responses have been received from all banks against this option (variable ‘X’);

(2) the percentage of customers who gave ‘very good’ rating to the bank for the customer service (variable ‘Y’). This response, again, has been chosen as responses are available from all banks under this category.

The data with regard to the two variables is given in the table below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>‘Y’</th>
<th>‘X’</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14</td>
<td>47</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>16</td>
<td>50</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>UBI</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>
The correlation and regression analysis are as given under:

‘Y’ – Dependent variable (Percentage of customers who rated bank’s service as ‘very good’)

‘X’ – Independent variable (Percentage of executives who agreed with the statement ’to a great extent’)

The following symbols are used in the calculations of Correlation and regression.

\[
X = \bar{X} \quad x = X - \bar{X} \quad Y = \bar{Y} \quad y = Y - \bar{Y} \quad \frac{\Sigma xy}{N} \quad \sqrt{\frac{\sum x^2 N}{N}} \times \sqrt{\frac{\sum y^2 N}{N}}
\]

Where ‘N’ is the pair of data used in the calculation*.

Coefficient of Correlation = \( r \); Regression Coefficient = \( b_{yx} \)

*\( N=6 \)

I. Coefficient of Correlation:

\[
r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 N} \times \sqrt{\Sigma y^2 N}} = \frac{787}{\sqrt{2134 \times 309}} = 0.96
\]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

Standard of Error [SE(\( r \) )]:

\[
SE(\( r \)) = \frac{1 - r^2}{\sqrt{N}} = \frac{1 - 0.92^2}{\sqrt{6}} = 0.03
\]

Probable Error [PE (\( r \))]:

\[
PE (\( r \)) = 0.6745 \times SE(\( r \)) = 0.6745 \times 0.03 = 0.020
\]

Significance of Correlation Coefficient:

\[
r = 0.96 \quad 6 \text{ PE}(\( r \)) = 0.12
\]

As correlation coefficient is more than 6 PE (\( r \)), the correlation coefficient is significant.
**T-Test of Correlation Coefficient:**

As explained in the section on ‘tools of analysis used’, it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has been used in this analysis and the calculations are as below:

\[
t = r \sqrt{\frac{N-2}{0.96 \times \sqrt{6-4}}}
\]

\[
\sqrt{1-r^2} = \sqrt{1-(0.96)^2} = 6.86
\]

The standard value for “t” for a value of N-2 at a confidence level of 5% is:

\[
t_4(0.05) = 2.132
\]

As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

**II. Regression Analysis**

Y is the dependent variable and X is the independent variable.

Regression Coefficient of Y on X:

\[
byx = \frac{N \left( \sum XY \right) - \left( \sum X \right) \left( \sum Y \right)}{N \sum X^2 - \left( \sum X \right)^2}
\]

\[
= \frac{[6 \times 2719] - [196 \times 61]}{[6 \times 8150] - [196 \times 196]} = 0.42
\]

**Equation on Regression Line**

\[
Y - \bar{Y} = byx (X - \bar{X})
\]

\[
Y - 10 = 0.42 (X-32)
\]

\[
Y = 0.42 X - 3.44
\]

The critical value of t for N-2 at the confidence level of 5% is:

\[
t_4(0.05) = 2.132
\]
As “\( t \)” calculated is more than the “\( t \)4(0.05), the critical value, ‘\( r \)’-regression coefficient is significant. Hence reject null hypothesis.

**T-test of Regression Coefficient:**

1. Calculation of Variance of X’s

\[
(Sx)^2 = \frac{\sum (X - \bar{X})^2}{N-1} = \frac{2134}{6-1} = 426.8
\]

\[Sx = \sqrt{426.8} = 20.66\]

2. Calculation of Variance of Y’s

\[
S^2 yx = \frac{\sum (Y - \bar{Y})^2 - r (\bar{X} - \bar{X})^2}{N-2} = \frac{24.35}{6-2} = 6.08
\]

\[Syx = \sqrt{6.08} = 2.46\]

\[t = \frac{r \cdot Sx}{Syx / \sqrt{N-1}} = \frac{0.42 \times 20.66}{2.46 / \sqrt{6-1}} = 7.89\]

(* same as byx)

[#The details of the calculation of \( x, x^2, y, y^2, \) \( xy, XY, X, Y \) etc. are given in Appendix.XVIII.]

The results of the Correlation/Regression analysis given above clearly establishes the hypothesis that ‘Banking Organisations that practice professional and result oriented human resources management render quality customer service’.

**(b) Statement:**

‘The Organisation’s HR Strategy involves both internal and external recruitment to key positions’.

The responses to this statement from executives of various banks are as below:

**Table. 63**

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>46.7%</td>
<td>53.3%</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Taking into account the responses ‘Very True’ and ‘True to a great extent’ together, the percentage of responses for the banks with ‘excellent’ rating are as follows:

HDFC Bank: 100%;  IDBI Bank: 88.3%;  Citi Bank: 100%

In contrast the percentage for banks with lower rating are 13.3%, 7.1% and 12.5% for Indian Bank, UCO Bank and UBI respectively. It is worth noting here that HDFC Bank, IDBI Bank and Citi Bank recruit for all positions from open market through the internal candidates can also apply. On the other hand, Indian Bank, UCO Bank and UBI recruit officers at the base level (Junior Management Grade-I) generally except for some exceptions. Lateral recruitment at higher positions are only for highly specialised posts like Legal Officers, Engineers, Chartered Accountants, etc. That’s why there has been some response to the statements from the respondents of these banks.

It is clear from the above that the banks which have received excellent rating also recruits people from open market to all positions though the positions are open to internal candidates and the banks do give preference to them.

In order to test the hypothesis two variables have been taken. They are,

1. the percentage of executives who stated that the statement is ‘true to a great extent’.
2. the percentage of customers who gave ‘very good’ rating to the bank for the customer service (Variable ‘Y’). Again this variable has been chosen as responses have been received from all banks in this regard.

The data with regard to the two variables is given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>‘Y’</th>
<th>‘X’</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14</td>
<td>41</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>16</td>
<td>50</td>
</tr>
</tbody>
</table>
The correlation and regression analysis are as under:

'Y' – Dependent variable (Percentage of customers who rated bank’s service as 'very good')

'X' – Independent variable (Percentage of executives who agreed with the statement 'to a great extent')

The following symbols are used in the calculations of Correlation and regression.

\[ \bar{X} = \frac{X}{N} ; \quad \bar{y} = \frac{Y}{N} ; \quad \bar{x} = \frac{X - \bar{X}}{\sqrt{\Sigma x^2}} ; \quad \bar{y} = \frac{Y - \bar{Y}}{\sqrt{\Sigma y^2}} \]

Where ‘N” is the pair of data used in the calculation.

Coefficient of Correlation = \( r \);

Regression Coefficient = \( b_{yx} \); \( N=6 \)

A. Coefficient of Correlation:

\[ r = \frac{\Sigma xy}{\sqrt{\Sigma x^2} \times \sqrt{\Sigma y^2}} = \frac{802}{\sqrt{2190} \times \sqrt{309}} = 0.97 \]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

Standard of Error [SE(\( r \))]:

\[ SE(\( r \)) = \frac{1 - r^2}{\sqrt{N}} = \frac{1 - (0.97)^2}{\sqrt{6}} = 0.025 \]

Probable Error [PE (\( r \))]:

\[ PE (\( r \)) = 0.6745 \times SE(\( r \)) = 0.6745 \times 0.025 = 0.017 \]

Significance of Correlation Coefficient:
As correlation coefficient is more than 6 PE (r), the correlation coefficient is significant.

**T-Test of Correlation Coefficient:**

As explained in the section on 'tools of analysis used', it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has been used in this analysis and the calculations are as below:

\[
t = r \sqrt{N-2} = 0.97 \times \sqrt{6-2} = 8.08
\]

The standard value for “t” for a value of N-2 at a confidence level of 5% is:

\[t_{4}(0.05) = 2.132\]

As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

**B. Regression Analysis**

Y is the dependent variable and X is the independent variable.

Regression Coefficient of Y on X:

\[
byx = \frac{N[\Sigma XY] - [\Sigma X][\Sigma Y]}{N[\Sigma X]^2 - [\Sigma X]^2}
\]

\[
= \frac{[6 \times 2591] - [176 \times 61]}{[6 \times 7352] - [176 \times 176]} = 0.37
\]

**Equation on Regression Line**

\[
Y - \bar{Y} = byx (X - \bar{X})
\]

\[
Y - 10 = 0.37 (X-29)
\]
\[ Y = 0.37 X - 0.73 \]

**T-test of Regression Coefficient:**

1. Calculation of Variance of X's

\[
(Sx)^2 = \frac{\sum (X - \bar{X})^2}{N - 1} = 2190 = 438.0 \\
Sx = \sqrt{438.0} = 20.93
\]

2. Calculation of Variance of Y's

\[
S^2_{yx} = \frac{\sum (Y - \bar{Y} - \bar{r} (X - \bar{X}))^2}{N - 2} = 15.316 = 3.83 \\
Syx = \sqrt{3.83} = 1.96
\]

\[
t = r \times \frac{Sx}{Syx} = \frac{0.37 \times 20.93}{\sqrt{6-1}/1.96} = 7.09
\]

(* same as byx)

The critical value of \( t \) for \( N-2 \) at the confidence level of 5% is:

\( t_{4(0.05)} = 2.132 \)

As \( t \) calculated is more than \( t_{4(0.05)} \), the critical value, \( r^* \)-regression coefficient is significant. Hence reject null hypothesis.

[#The details of the calculation of x, x2, y, y2, xy, XY, X, Y etc. are given in Appendix.
XIX. ]

The results of the correlation/regression analysis given above clearly establishes the hypothesis that 'Banking organisations that practice professional and result oriented human resources management render quality customer service.

(e) Statement:

"There is separate recruitment for staff involved in front-line service/customer relations".

The response to this statement from executives of various banks are as given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table.65
The responses reveal that majority of respondents in the case of banks with service excellence are in agreement with the statement indicating that front-line staff are recruited specifically for the job. The number of respondents who have replied with ‘Very True’ and ‘True to a great extent’ aggregates to 86.7%; 94.2% and 85.7% in the case of HDFC Bank, IDBI Bank and Citi Bank respectively. On the other hand, the figures for Indian Bank, UCO Bank and UBI are 6.7%, 7.1% and 6.3% respectively. The percentages indicate that in banks with service excellence, the institutions take care in selecting candidates with appropriate skills, knowledge and expertise for dealing with customers as front-line staff. In order to test the hypothesis, two variables have been taken. They are,

1. The percentage of executives who stated that the statement is ‘true to a great extent’. This response has been taken for analysis as responses have been received from all banks against this option (variable ‘X’);
2. the percentage of customers who gave ‘very good’ rating to the bank for the customer service (variable ‘Y’). This variable has been chosen as responses have been received from all banks in this regard.

The data with regard to the two variables is given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>‘Y’</th>
<th>‘X’</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21</td>
<td>60</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14</td>
<td>59</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>16</td>
<td>64</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>UBI</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

The correlation and regression analysis are as given below:
‘Y’ - Dependent variable (Percentage of customers who rated bank’s service as ‘very good’)

‘X’ – Independent variable (Percentage of executives who agreed with the statement ‘to a great extent’)

The following symbols are used in the calculations of Correlation and regression.

\[
\bar{X} = \overline{X} ; \quad x = \bar{X} - \bar{X} ; \quad \bar{Y} = \overline{Y} ; \quad y = \bar{Y} - \bar{Y} \\
\frac{N}{N} \quad \frac{N}{N}
\]

Where ‘N” is the pair of data used in the calculation.

Coefficient of Correlation = \( r \);

Regression Coefficient = \( b_{yx} \)

\( \text{N}=6 \)

A. **Coefficient of Correlation :**

\[
\begin{align*}
    r &= \frac{\Sigma xy}{\sqrt{\Sigma x^2 \times \Sigma y^2}} = \frac{1114}{\sqrt{4443 \times 309}} = 0.95
\end{align*}
\]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

**Standard of Error \([SE(r)]\):**

\[
\begin{align*}
    SE(r) &= \frac{1 - r^2}{\sqrt{N}} = \frac{1 - (0.95)^2}{\sqrt{6}} = 0.041
\end{align*}
\]

**Probable Error \([PE(r)]\):**

\[
\text{PE}(r) = 0.6745 \times SE(r) = 0.6745 \times 0.041 = 0.0277
\]

**Significance of Correlation Coefficient:**

\[
\begin{align*}
    r &= 0.95 \quad 6 \text{PE}(r) = 0.1662
\end{align*}
\]

As correlation coefficient is more than 6 PE \((r)\), the correlation coefficient is Significant.
**T-Test of Correlation Coefficient:**

As explained in the section on tools of analysis used, it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has been used in this analysis and the calculations are as below:

\[
t = \frac{r \sqrt{N-2}}{\sqrt{1 - r^2}} = 6.01
\]

The standard value for “t” for a value of N-2 at a confidence level of 5% is:

\[
t_{(0.05)} = 2.132
\]

As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

**B. Regression Analysis**

Y is the dependent variable and X is the independent variable.

Regression Coefficient of Y on X:

\[
b_{yx} = \frac{N \sum XY - \sum X \sum Y}{N \sum X^2 - [\sum X]^2}
\]

\[
= \frac{6 \times 3178 - 203 \times 61}{6 \times 11311 - [203 \times 203]}
= 0.25
\]

**Equation on Regression Line**

\[
Y - \bar{Y} = b_{yx} (X - \bar{X})
\]

\[
Y - 10 = 0.25 (X - 34)
\]

\[
Y = 1.5 + 0.25 X
\]

**T-test of Regression Coefficient:**

1. Calculation of variance of X’s

\[
(Sx)^2 = \frac{\sum (X - \bar{X})^2}{N-1} = 4443 \quad = 888.6
\]
2. Calculation of variance of Y’s

\[
S^2_{yx} = \frac{\sum (Y - \bar{Y} - r(X - \bar{X}))^2}{N-2} = \frac{34.68}{6-2} = 8.67
\]

\[
S_{yx} = \sqrt{8.67} = 2.94
\]

\[
t = \frac{r \times S_x}{S_{yx} / \sqrt{(N-1)}} = \frac{0.25 \times 29.80}{2.94 / \sqrt{6-1}} = 5.64
\]

(* same as byx)

The critical value of \( t \) for N-2 at the confidence level of 5% is:

\( t_{4}(0.05) = 2.132 \)

As \( t \) calculated is more than the \( t_{40.05} \), the critical value, \( r \)-regression coefficient is significant. Hence reject null hypothesis.

[#The details of the calculation of \( x, x', y, y^*, xy, XY, \bar{X}, \bar{Y} \) etc. are given in Appendix. XX]

The results of the correlation/regression analysis given above clearly establishes the hypothesis that banking organisations that practice professional and result oriented human resources management render quality customer service.

Some of the other statements in the questionnaire, the responses to which support this hypothesis are given below:

(d) Statement:

‘While recruiting the front-line people, their knowledge, aptitude, communication skills and positive attitude are part of criteria for selection’.

The responses from executives of various banks with regard to this statement are as under:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>73.3%</td>
<td>26.7%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>17.6%</td>
<td>82.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>71.4%</td>
<td>28.6%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>100%</td>
</tr>
</tbody>
</table>
From the statistics given above, it is evident that the banks where service excellence has been observed in the survey give special attention to the selection of staff for service at the counter. On the other hand banks like Indian Banks, UCO Bank and UBI have the system of recruiting the clerical staff as a cadre for working in branches, Regional Offices etc. in various desks including counters. The staff get rotated often between counter duties and other duties.

(e) Statement:
“The Human Resources (HR) strategy is well integrated with business strategy enabling organisational effectiveness, especially with regard to service delivery”.

The responses from the executives of various banks to this statement are given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>86.7%</td>
<td>13.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>11.8%</td>
<td>70.6%</td>
<td>17.6%</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>57.1%</td>
<td>42.9%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>13.3%</td>
<td>66.7%</td>
<td>20%</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>-</td>
<td>-</td>
<td>78.6%</td>
<td>21.4%</td>
</tr>
<tr>
<td>UBI</td>
<td>-</td>
<td>31.2%</td>
<td>56.3%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

The integration of HR strategy with business strategy essentially means that the business objectives, goals and plans for the basis form the action plan for HR Department. Many banking organisations have broad HR policies with operations spread over a wider canvas. In professional HR management, the action of the HR department will be designed to meet the broad as well as small requirement emanating from the business’s strategic action plan. It has been observed from the organisational study that the banks with higher rating of service excellence have more professional HR strategies always attempting to meet the existing and emerging needs of the business plans.

The responses of the executives corroborates the conclusion that banks with service excellence exhibit integration of business strategy with HR strategy and supports the
hypothesis that “Banking organisations that practice professional and result oriented human resources management render quality customer service”.

8.2.3. Hypothesis – III

“Employee motivation through HR policies/practices (including reward/incentive schemes etc) influence the quality of service rendered by the organisation”.

In order to test the hypothesis, three questions in the survey questionnaire which are relevant to the context have been chosen (other associated statements have been subjected to regular statistical analysis and have been given in subsequent paragraphs).

(a) Statement:

“The organisation has a system of evaluating a job with regard to its level of difficulty, experience and skills required to perform and fix appropriate pay”.

The responses to this statement from executives of various banks are as given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>40%</td>
<td>60%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>29.4%</td>
<td>64.7%</td>
<td>5.9%</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>42.9%</td>
<td>57.1%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>6.7%</td>
<td>-</td>
<td>93.3%</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>-</td>
<td>7.1%</td>
<td>-</td>
<td>92.9%</td>
</tr>
<tr>
<td>UBI</td>
<td>-</td>
<td>6.2%</td>
<td>-</td>
<td>93.8%</td>
</tr>
</tbody>
</table>

The positive responses to this statement, viz. ‘Very True’ and ‘True to a great extent’ are very high in the case of HDFC Bank, IDBI Bank and Citi Bank indicating the existence of a system of fixing up compensation package depending on the job profile, expertise required, etc. The percentage of responses in the case of these banks is as under:

HDFC Bank – 100%; IDBI Bank – 94.1%; Citi Bank – 100%

During the organisational study conducted through visit to the Corporate Office of the banks as well as interaction with the heads of HR department, it was observed that these banks normally have a basic pay structure calculated for each job taking into account the
job content and skill requirement etc. When a recruitment is made to the post, the candidate's profile, his expertise, experience, etc. are considered and an appropriate pay package is drawn up. The flexibility available in the system enables these banks to draw the best talents in the market. The system provides excellent motivation to the employees as they are compensated for their job knowledge, expertise, experience, etc. in addition to the job content.

The scheme of offering compensation in the case of banks which received comparatively low rating for customer service depict a different picture. In these banks, viz. Indian Bank, UCO Bank and UBI, the compensation (salary and perks) are attached to the grade of the official with a compensation for experience which is provided in the form of increment every year. The salary and other allowance generally change only with the change in the grade. Perks, on the other hand may vary with the position occupied by the official. This is because these banks offer some specific allowances to officers who are occupying certain critical positions like Branch Managers, Regional Manager, etc.

The system in the case of banks like Indian Bank, UCO Bank and UBI cannot enthuse a hard working official as his capabilities, job knowledge etc. do not form part of the considerations for fixing up the remuneration. This aspect has been cited as a major motivational factor by the executives working with IDBI Bank, HDFC Bank and Citi Bank during the interaction which the researcher had with them. It is also one major factor that had resulted in migration of knowledge workers from traditionally operating banks to the new generation banks resulting in 'talent drain' in the banks.

In order to test the hypothesis two variables has been taken. They are,

1. The percentage of executives who stated that the statement is 'True to a great extent'.
   This response has been taken for analysis as responses have been received from all banks against the option (variable 'X').

2. The percentage of customers who gave 'very good' rating to the bank for the customer service (variable 'Y'). This response has been identified for analysis as responses have been received from all banks in this regard.

The data with regard to the two variables is given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>'Y'</th>
<th>'X'</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21</td>
<td>60</td>
</tr>
<tr>
<td>Bank</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>--------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14</td>
<td>65</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>16</td>
<td>57</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>UBI</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

The correlation and regression analysis are given below:

`Y` - Dependent variable (Percentage of Customers who rated bank’s service as ‘Very good’)

`X` - Independent variable (percentage of executives who agreed with the statement ‘to a great extent’).

The following symbols are used in the calculations of Correlation and regression.

\[
\bar{X} = \frac{X}{N} ; \quad x = X - \bar{X} ; \quad \bar{Y} = \frac{Y}{N} ; y = Y - \bar{Y}
\]

Where ‘N’ is the pair of data used in the calculation.

Coefficient of Correlation = \( r \); Regression Coefficient = \( b_{yx} \)

\[ N=6 \]

**COEFFICIENT OF CORRELATION:**

\[
r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \times \sqrt{\Sigma y^2}}} = \frac{1096}{\sqrt{4408 \times 309}}
\]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

**Standard of Error [SE(r)]:**

\[
SE(r) = 1 - r^2 = 1 - 0.93 = 0.06
\]
Probable Error [PE (r )] :

\[ PE(r) = 0.6745 \times SE(r) = 0.6745 \times 0.06 = 0.004 \]

Significance of Correlation Coefficient:

\[ r = 0.93 \quad 6 \times PE(r) = 0.24 \]

As correlation coefficient is more than 6 PE (r), the correlation coefficient is Significant.

T-Test of Correlation Coefficient:

As explained in the section on 'tools of analysis used', it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has been used in this analysis and the calculations are as below:

\[
\begin{align*}
t &= r \sqrt{N-2} \\ &= \frac{0.93 \times \sqrt{6-2}}{\sqrt{1-(0.93)^2}} = 5.03
\end{align*}
\]

The standard value for “t” for a value of N-2 at a confidence level of 5% is:

\[ T_{4}(0.05) = 2.132 \]

As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

II. REGRESSION ANALYSIS

Y is the dependent variable and X is the independent variable.

Regression Coefficient of Y on X:

\[
byx = \frac{N \Sigma XY - \Sigma X \Sigma Y}{N \Sigma X^2 - (\Sigma X)^2}
\]

\[ = \frac{[6 \times 3150] - [202 \times 61]}{[6 \times 11208] - [202 \times 202]} = 0.25 \]

Equation on Regression Line

\[ Y - \bar{Y} = byx (X - \bar{X}) \]
\[ Y - 10 = 0.25(X - 34) \]
\[ Y = 1.5 + 0.25 X \]

**T-test of Regression Coefficient:**

1. **Calculation of Variance of X’s**

\[
(S_x)^2 = \frac{\sum (x - \overline{x})^2}{N-1} = \frac{4408}{6-1} = 881.6
\]

\[ S_x = \sqrt{881.6} = 29.69 \]

3. **Calculation of Variance of Y’s**

\[
S_{yx}^2 = \frac{\sum (y - \overline{y} - r(x - \overline{x}))^2}{N-2} = \frac{36.49}{6-2} = 9.1
\]

\[ S_{yx} = \sqrt{9.1} = 3.01 \]

\[
t = \frac{r \cdot S_x}{S_{yx}/\sqrt{(N-1)}} = \frac{0.25 \times 29.69}{3.01/\sqrt{6-1}} = 5.50
\]

The critical value of \( t \) for \( N-2 \) at the confidence level of 5% is:

\[ t_{4}(0.05) = 2.312 \]

As \( "t" \) calculated is more than the \( "t_{4}(0.05)" \), the critical value, \( 'r' \)-regression coefficient is significant. Hence reject null hypothesis.

[#The details of the calculation of \( x, x^2, y, y^2, xy, XY, \overline{X}, \overline{Y} \) etc. are given in appendix XXI]

The result of the correlation/regression analysis clearly establishes the hypothesis that ‘Employee motivation through HR policies/practices (including reward/incentive scheme etc) influence the quality of service rendered by the organisation.

**(b) Statement:**

‘The bank has a system of working out the compensation package considering seniority, performance, skill and expertise. It works out ‘person-based pay’ and it has a motivational effect on the employees’.
In the context of the systems with regard to compensation packages' existing in the banks with excellent customer service and comparatively lower quality of service, the responses to the above mentioned statement provide a ground for testing the hypothesis. The responses to this statement from the executives of the banks are as given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>46.7%</td>
<td>53.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>41.2%</td>
<td>58.8%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>28.6%</td>
<td>71.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>67.0%</td>
<td>-</td>
<td>93.3%</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>-</td>
<td>7.1%</td>
<td>-</td>
<td>92.9%</td>
</tr>
<tr>
<td>UBI</td>
<td>-</td>
<td>6.2%</td>
<td>6.2</td>
<td>87.6%</td>
</tr>
</tbody>
</table>

It may be observed that the positive responses received from the banks with higher rating for customer service are comparatively high. The aggregate of percentages received in the case of responses ‘very true’ and ‘true to a great extent’ in the case of these banks are as under:

HDFC Bank : 100%; IDBI Bank : 100%; Citi Bank : 100%

It is evident from the responses that these banks have a system of working out a person-based pay which has a motivational effect on the employees.

In order to test the hypothesis two variables have been taken. (1) the percentage of executives who stated that the statement is ‘true to a great extent’ (variable ‘X’); (2) The percentage of customers who gave ‘very good’ rating to the bank for customer service (variable ‘Y’). These items have been taken up for comparison as data is available on these items in the case of all banks.

The data with regard to the two variables are given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>‘Y’</th>
<th>‘X’</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21</td>
<td>53</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14</td>
<td>58</td>
</tr>
</tbody>
</table>
The correlation and regression analysis are as given below:

'Y' – Dependent Variable (Percentage of customers who rated banks’ service as ‘very good’)

'X' - Independent Variable (Percentage of executives who agreed with the statement ‘to a great extent’)

The following symbols are used in the calculations of Correlation and regression.

\[
X = \bar{X}; \quad x = X - \bar{X}; \quad Y = \bar{Y}; \quad y = Y - \bar{Y}
\]

Where ‘N’ is the pair of data used in the calculation.

Coefficient of Correlation = r; Regression Coefficient = b;y\; ; \;N=6

**COEFFICIENT OF CORRELATION:**

\[
\rho = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \cdot \Sigma y^2}} = \frac{1076}{\sqrt{4550 \cdot 309}} = 0.91
\]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

**Standard of Error [SE(r)]:**

\[
SE(r) = \frac{1 - r^2}{\sqrt{N}} = \frac{1 - 0.91^2}{\sqrt{6}} = 0.07
\]
Probable Error \( PE(\ r\ ) \) :

\[
PE(\ r\ ) = 0.6745 \times SE(\ r\ ) = 0.6745 \times 0.07 = 0.047
\]

**Significance of Correlation Coefficient:**

\[
r = 0.91 \quad 6\ PE(\ r\ ) = 0.282
\]

As correlation coefficient is more than \( 6\ PE(\ r\ )\), the correlation coefficient is Significant.

**T-Test of Correlation Coefficient:**

As explained in the section on 'tools of analysis used', it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has been used in this analysis and the calculations are as below:

\[
t = r \sqrt{N-2} = 0.91 \times \sqrt{6-2} = 4.43
\]

\[
\frac{1}{\sqrt{1-r^2}} \quad \frac{1}{\sqrt{1-(0.91)^2}}
\]

The standard value for "t" for a value of N-2 at a confidence level of 5% is:

\[
t(0.05) = 2.132
\]

As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

**II. REGRESSION ANALYSIS**

\( Y \) is the dependent variable and \( X \) is the independent variable.

Regression Coefficient of \( Y \) on \( X \):

\[
b_{yx} = \frac{N \sum XY - (\sum X)(\sum Y)}{N \sum X^2 - (\sum X)^2}
\]

\[
= \frac{[6 \times 3129] - [202 \times 61]}{[6 \times 11348] - [202 \times 202]} = 0.24
\]

**Equation on Regression Line**

\[
Y - \bar{Y} = b_{yx} (X - \bar{X})
\]

\[
Y - 10 = 0.24(X - 33)
\]
\[ Y = 2.08 + 0.24\, X \]

**T-test of Regression Coefficient:**

1. **Calculation of Variance of X's**
   
   \[
   (S_x)^2 = \frac{\sum [X - \bar{X}]^2}{N - 1} = \frac{4550}{6-1} = 910
   \]

   \[ S_X = \sqrt{910} = 30.17 \]

2. **Calculation of Variance of Y's**
   
   \[
   S^{2y}_x = \frac{\sum [Y - \bar{Y} - r(X - \bar{X})]^2}{N - 2} = \frac{54.60}{6-2} = 13.65
   \]

   \[ S_{yx} = \sqrt{13.65} = 3.69 \]

   \[
   t = \frac{r \cdot S_x}{S_{yx}/\sqrt{(N-1)}} = \frac{0.24 \times 30.17}{3.69/\sqrt{6-1}} = 4.39
   \]

   (*same as byx*)

   The critical value of \( t \) for \( N-2 \) at the confidence level of 5% is:
   \[ t_{4(0.05)} = 2.312 \]

   As “t” calculated is more than the “\( t_{4(0.05)} \)”, the critical value, \( r \)-regression coefficient is significant. Hence reject null hypothesis.

   [#The details of the calculation of \( x, x^2, y, y^2, xy, XY, \bar{x}, \bar{y} \) etc. are given in Appendix. XXII.]

The results of the correlation/regression analysis given above clearly establishes the hypothesis that ‘employee motivation through HR policies (including reward/incentive schemes etc) influence the quality of service rendered by the organisation.

(c) **Statement:**

‘The system provides for tangible reward structure for performance (pay for performance concept) and also have intrinsic rewards resulting in motivation for high level of performance and service delivery’

The responses from the executives with regard to the statement are as under:
Table-72

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>40%</td>
<td>60%</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>29.5%</td>
<td>70.5%</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>57.2%</td>
<td>42.8%</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>-</td>
<td>6.7%</td>
<td>93.3%</td>
<td>-</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>-</td>
<td>7.1%</td>
<td>92.9%</td>
<td>-</td>
</tr>
<tr>
<td>UBI</td>
<td>-</td>
<td>6.2%</td>
<td>93.8%</td>
<td>-</td>
</tr>
</tbody>
</table>

It may be observed from the above that in the case of banks with excellent service rating, the positive responses which include ‘very true’ and ‘true to a great extent’ responses are high as given below:

HDFC Bank – 100% ; IDBI Bank - 100% ; Citi Bank - 99.7%

It is evident from the above that these banks have tangible reward system for performance. The organisational study undertaken has revealed that these banks have, as a policy, the system of rewarding the employees for performance on an annual basis. The major tools involve, (1) Financial Incentives and (2) Non-financial incentives.

The Financial Incentives for performance, essentially, involve (1) pay hike based on performance during the past year. In order to ensure an objective system for evaluating the performance of the employees, these banks have in place performance evaluation systems with measurable parameters. At the end of the financial year an appraisal of the performance is undertaken to evaluate the performance especially vis-à-vis the targets given. Based on the policy of the bank, the employees are given bonus and hike in their pay. Mostly, these banks have a flexible approach to pay hike and bonus and generally it varies from person to person and position to position. There is no standardised approach nor equitable distribution. Non-financial incentives include: (1) Considering the performance for promotion to higher levels /career progression; (2) Deputing overseas for training/visit, etc. (3) Employee’s stock option scheme.

Employees who are performing well are considered for deputation abroad for short assignments. Under Employees Stock Option Programme, well performing employees are offered stocks of the organisation. In some banks they are offered to all employees while in others only certain categories of employees are considered under the scheme.
The system of financial and non-financial rewards has played a significant role in elevating employee performance which has a direct bearing on customer service. In the case of banks where the quality of service is at a lower level (as estimated by the customers), the banks do not have any reward or system of financial compensation for performance. Historically, in the ‘public sector banking’ scenario, the concept of bonus/other rewards has never been there. In the current environment it has been felt that such incentives etc. should be introduced to sustain talent and also to provide a level playing field to the employees. It is in this context that State Bank of India introduced a system for rewarding performance such as meeting/surpassing targets, etc. recently. The idea is under the consideration of other banks also and it is learnt that the Finance Ministry is expected to come out with a uniform scheme for all public sector banks, being the owner of majority share holding.

In order to test the hypothesis, two variables have been taken. They are,

1. The percentage of executives who stated that the statement is ‘true to a great extent’ (variable ‘X’);
2. The percentage of customers who gave ‘very good’ rating to the bank for customer service (variable ‘Y’). These items have been taken up for comparison as data is available on these items in the case of all the banks.

The data with regard to the two variables are given below:

‘Y’: Dependent variable (Percentage of customers giving ‘very good’ rating for service).

‘X’: Independent variable (Percentage of executives stating that the statement is ‘true to a great extent’).

<table>
<thead>
<tr>
<th>Bank</th>
<th>‘Y’</th>
<th>‘X’</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>21</td>
<td>60</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>14</td>
<td>70</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>16</td>
<td>43</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>UBI</td>
<td>2</td>
<td>6</td>
</tr>
</tbody>
</table>

The correlation and regression analysis are as below:
The following symbols are used in the calculations of Correlation and regression.

\[
\bar{X} = \bar{X}; \quad x = X - \bar{X}; \quad \bar{Y} = \bar{Y}; \quad y = Y - \bar{Y}
\]

Where ‘N’ is the pair of data used in the calculation.

Coefficient of Correlation = \(r\); Regression Coefficient = \(b_{yx}\); \(N=6\)

**Coefficient of Correlation :**

\[
r = \frac{\sum xy}{\sqrt{\sum x^2 \cdot \sqrt{\sum y^2}}} = \frac{1034}{\sqrt{4275 \cdot \sqrt{309}}} = 0.90
\]

The value of coefficient of correlation signify very strong relationship between the dependent and independent variable.

**Standard of Error [SE(r)]:**

\[
SE(r) = \sqrt{1 - r^2} = \sqrt{1 - (0.90)^2} = 0.08
\]

**Probable Error [PE (r)]:**

\[
PE (r) = 0.6745 \times SE(r) = 0.6745 \times 0.08 = 0.054
\]

**Significance of Correlation Coefficient:**

\[
r = 0.90 \quad \text{6 PE (r) = 0.324}
\]

As correlation coefficient is more than 6 PE (r), the correlation coefficient is significant.

**T-Test of Correlation Coefficient :**

As explained in the section on ‘tools of analysis used’, it is important to undertake a statistical test to check the reliability of the correlation coefficient. T-Test has been used in this analysis and the calculations are as below:

\[
t = r \sqrt{N-2} = \frac{0.90 \times \sqrt{6-2}}{\sqrt{1 - (0.90)^2}} = 9.47
\]

\[
\sqrt{1 - r^2}
\]
The standard value for “t” for a value of N-2 at a confidence level of 5% is:

\[ t(0.05) = 2.132 \]

As the value obtained in the test is more than the standard value, Null hypothesis is rejected. Correlation coefficient is significant.

II. Regression Analysis

Y is the dependent variable and X is the independent variable.

Regression Coefficient of Y on X:

\[
byx = \frac{N(\Sigma XY - (\Sigma X)(\Sigma Y))}{N \Sigma X - (\Sigma X)^2}
\]

\[
= \frac{[6 \times 2996] - [193 \times 61]}{[6 \times 10483] - [193 \times 193]} = 0.24
\]

Equation on Regression Line

\[
Y - \bar{Y} = byx (X - \bar{X})
\]

\[
Y - 10 = 0.24(X - 32)
\]

\[
Y = 2.32 + 0.24X
\]

T-test of Regression Coefficient:

1. Calculation of Variance of X’s

\[
(Sx)^2 = \frac{\Sigma (X - \bar{X})^2}{N - 1} = 4275 = 855.0
\]

\[
Sx = \sqrt{855} = 29.20
\]

2. Calculation of Variance of Y’s

\[
S^2yx = \frac{\Sigma (Y - \bar{Y} - r(X - \bar{X}))^2}{N - 2} = 57.45 = 14.36
\]
\[ S_{yx} = \sqrt{14.36} = 3.79 \]

\[ t = \frac{r \cdot S_x}{\frac{S_{yx}}{\sqrt{N-1}}} = \frac{0.24 \times 29.20}{3.79} = 4.12 \]

\[ \frac{S_{yx}}{\sqrt{N-1}} = \frac{3.79}{\sqrt{6-1}} \]

(* same as byx)

The critical value of \( t \) for \( N-2 \) at the confidence level of 5% is:
\( t_{4(0.05)} = 2.132 \)

As \( \text{“}t\text{”} \) calculated is more than the \( t_{4(0.05)} \), the critical value, \( r \)-regression coefficient - is significant. Hence reject null hypothesis.

[#The details of the calculation of \( x, x^2, y, y^2, xy, XY, \overline{X}, \overline{Y} \) etc. are given in Appendix. XXIII.]

The result of the correlation and regression analysis given above clearly establishes the hypothesis that ‘Employee motivation through HR policies/practices (including reward/incentives schemes, etc) influence the quality of service rendered by the organisation.

Responses to some of the associated statements in the questionnaire are given below:

**d) Statement:**
The compensation system envisages:
1. Internal Equity only
2. External (market related) equity only
3. Both internal equity and market related equity

The issue is relating to fixing of compensation in a competitive manner. When a candidate is identified for a job, the compensation offered is in line with the market rates and/or with the compensation offered to similar positions in the organisation. This issue becomes more relevant in organisations where the pay structure differs from person to person. In healthy organisations with competitive and professional HR policy the organisation keeps comparing the packages offered to their counter parts in similar organisations. Information is available in this regard from market surveys which give the remuneration in banks and companies in comparison. The responses to the above from the executives from HDFC
Bank, IDBI Bank and Citi Bank have stated that their institutions consider both internal equity (comparison with similar positions in our organisation) and external equity (comparison with similar positions in other organisations). The details of the responses are as under:

Response: Both internal equity and external equity

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>73.3%</td>
<td>26.7%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>23.5%</td>
<td>76.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citi Bank</td>
<td>42.9%</td>
<td>57.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It is evident from the above that these banks have a system for fixing up the remuneration package which is market competitive. During the interaction with the officials in these banks (corporate office, HR Department and branches) it was revealed that the competitive remuneration offered plays a significant role in employee motivation in the organisation.

In contrast, the responses from the banks with comparatively low rating of customer service (Indian Bank, UCO and UBI) show that the bank does not have a flexible salary structure and it takes care only internal equity. This is ensured by fixing up salary and perks for a scale and it is uniformly applied to all in that grade in the organisation. All the respondents (100%) of all these three banks have stated that the bank takes care of internal equity only.

(e) **Statement:**

‘The omission / commission/non-performance with limited / less significant consequence are dealt with by the organisation through ‘Motivational Discipline’ (reformation) rather than ‘Punitive Discipline (punishment) which enhances comfort level and performance standards.

The attitude towards the employees especially in the context of internal discipline is a matter of immense consequence to employee morale. The way an organisation deals with the employee when there is a lapse on his part determines the industrial climate of the organisation.
There are different approaches to the issue. Many organisations do not initiate serious action against employees when the omissions/commissions are of minor nature. This is in view of the fact that ‘Banking’ is a business involving risks and bankers always take risks. Whenever major lapses/intentional violations are observed, serious view is taken. However, there are exceptions to this wherein some banks have taken serious view of minor/unintentional lapses occurring in the course of business and punitive actions were initiated creating disturbances in the industrial climate and the morale of the employees. The responses from executives of various banks to the statement are given below:

<table>
<thead>
<tr>
<th>Bank</th>
<th>Very True</th>
<th>True to a great extent</th>
<th>Partially True</th>
<th>Not true at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDFC Bank</td>
<td>40%</td>
<td>60%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IDBI Bank</td>
<td>11.8%</td>
<td>88.2%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Citi Bank</td>
<td>71.4%</td>
<td>21.4%</td>
<td>7.1%</td>
<td>-</td>
</tr>
<tr>
<td>Indian Bank</td>
<td>13.3%</td>
<td>40%</td>
<td>46.7%</td>
<td>-</td>
</tr>
<tr>
<td>UCO Bank</td>
<td>14.3%</td>
<td>57.1%</td>
<td>28.6%</td>
<td>-</td>
</tr>
<tr>
<td>UBI</td>
<td>12.5%</td>
<td>50.0%</td>
<td>37.5%</td>
<td>-</td>
</tr>
</tbody>
</table>

It may be observed from the above that the general approach of all banks is to adopt ‘Motivational Discipline’ (Reformist approach) which is a more rewarding approach from HR management point of view. However, from the statistics it can be concluded that banks with better service excellence rating have more ‘reformist’ approach compared to other banks. Hence it is evident that the HR policies adopted by these banks enhance the comfort level of the employees and in turn their performance standard which has its positive impact on customer service.