Organizational Overview

BSES/Reliance Energy Limited: Powering Progress, Energizing the Economy: BSES, is the first private power distribution company formed in 1929 earlier known as Bombay Suburban Electric Supply Company. BSES is India's leading integrated power utility company in the private sector. It has a significant presence in generation, transmission and distribution of power in Maharashtra, Goa and Andhra Pradesh.

With the ushering in of the power sector reforms and in the new environment of opportunity for the power sector, BSES is a key player in this transformation process. REL and its affiliate power companies rank among the top 25 listed private sector companies on major financial parameters. Figure 5.1 shows REL presence in India.
BSES/REL is committed to creating superior value for all its stakeholders and is amongst the most admired and trusted utility companies in the world by setting new benchmarks in standards of corporate governance, operational and financial excellence, responsible corporate citizenship and profitable growth.

Some recognitions received by BSES are:

- **Rajiv Gandhi National Quality Award 2001 (Certificate of Merit)** for providing quality and excellence in every aspect of its functioning,

- **Qimpro Bench Mark Award - 2003 (Certificate of Merit)** for providing quality and excellence in every aspect of its functionality.
Electricity Distribution Companies of Delhi

Following the privatisation of Delhi's power sector and unbundling of the Delhi Vidyut Board in July 2002, the business of power distribution was transferred to BSES Yamuna Power Limited (BYPL) and BSES Rajdhani Power Limited (BRPL). These two of the three successor entities distribute electricity to 18.79 lakh customers in two thirds of Delhi. The Company acquired assets, liabilities, proceedings and personnel of the Delhi Vidyut Board as per the terms and conditions contained in the Transfer Scheme.

*BSES Yamuna Power Limited (BYPL):* BYPL distributes power to an area spread over 160 sq kms with a population density of 4203 per sq km. Its 8.52 lakh customers are spread over 14 districts across Central and East areas including Chandni Chowk, Daryaganj, Paharganj, Shankar Road, Patel Nagar, G T Road, Karkardooma, Krishna Nagar, Laxmi Nagar, Mayur Vihar, Yamuna Vihar, Nand Nagri and Karawal Nagar.

*BSES Rajdhani Power Limited (BRPL):* BRPL distributes power to an area spread over 750 km with a population density of 1360 per sq km. Its' over 10.27 lakh customers are spread 19 districts across South and West areas including Alaknanda, Khanpur, Vasant Kunj, Saket, Nehru Place, Nizamuddn, Sarita Vihar, Hauz Khas, R K Puram, Janakpuri, Najafgarh, Nangloi, Mundka, Punjabi Bagh, Tagore Garden, Vikas Puri, Palam and Dwarka.
Since taking over distribution, BSES' singular mission has been to provide reliable and quality electricity supply. BSES has invested over Rs 2000 crore on upgrading and augmenting the infrastructure which has resulted in a record reduction of AT&C losses. From a high of 63.1 % and 51.2 %, AT&C losses for BYPL and BRPL have come down to 43.6 % and 35.2 respectively - a record reduction of 19.5 % and 16.3 %.

**BSES - Customer Service Structure:** To register and resolve customer complaints, BSES has a centralized call centre. This study focuses on effectiveness of service provided by executives at BSES call centre and customer satisfaction from their transaction with BSES call centre.

**BSES Call Centre:** BSES has separate and dedicated numbers for BRPL and BYPL. Both call centres are located in same premise. Organization structure of BSES is shown in figure 5.2.
Call centre executives from BSES call centre were taken as sample. BSES has two divisions BSES Rajdhani Private Limited (BRPL) and BSES Yamuna Private Limited (BYPL), BRPL has been selected for this study by simple random sampling (draw of lots). All call centre executives working with BRPL has been selected as universe; of the universe of 50 executives with four supervisors in BRPL, all executives working with two supervisors are selected as experimental group through simple random sampling (draw of lots) and other two supervisors are taken as control group. Two supervisors with 24 executives were taken as experimental group and other two supervisors with 26 executives were taken as control group.
Experimental Group Selection: Executives working with two supervisors have been selected through random selection. This selection was done by writing names of all supervisors on chits and selecting 2 chits randomly, without looking and without replacement. Total number of executives with these two supervisors was 24 (twenty-four).

Control Group Selection: After selection of experimental group, executives working with other two supervisors became control group. Total number of executives with these two supervisors was 26 (twenty-six).

Details of number of executives in experimental group, control group and universe are given in table 5.1.

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of Supervisors</th>
<th>No. of Executives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Control Group</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>Universe</td>
<td>4</td>
<td>50</td>
</tr>
</tbody>
</table>

Key Result Areas of Call Centre Executives: Call Centre is a key customer contact point for BSES, where customers call to register their complaints, and log their request with BSES. Key deliverable of call centre executives:

- Handle customer calls and register customer complaints and requests
• Give customer information, if available regarding their complaint/request

• Ensure customer satisfaction

**Objective of Study:**

Keeping in mind the key deliverable at call centre objective of study was defined as

• To evaluate, if training of call centre executives on effective customer handling skills influences the business critical parameter of level of customer satisfaction with call centre.

**Training Initiative:**

Keeping in mind the objective, a comprehensive training program was developed to deliver training to experimental group. This included

• Training need analysis

• Training content development

• Defining effectiveness measures

• Training delivery
  
  o Classroom training

• Training evaluation

Training evaluation of experimental group was done in line with Kirkpatrick Model of training evaluation.

• *Level 1: Reaction* – Did the participants like the training?
  
  o Class room training feedback is taken immediately after the training from the participant, did they like the training?
Since, this is only participant reaction to training and does not evaluate any change in behaviour or business results, reaction feedback and its implications are not been analysed in this study.

• **Level 2: Learning** – Did the participants learn something in the training?
  
  o An evaluation was conducted using role-plays to evaluate what the participants learn from the training.

• **Level 3: Behaviour** – Did the participants apply what they learned in the training back on the job?
  
  o Skill evaluation of participants on the job was conducted to evaluate the change in behaviour, as per skill evaluation matrix.

• **Level 4: Results** – Did the participants' application on the job impact the organization?
  
  o Customer satisfaction, measured through instant customer engagement process is considered to evaluate if the application of skills learned on the job has impacted the organization in form of any improvement in customer satisfaction scores.
Level 2, 3 and 4 evaluations are done by collecting pre-training and post-training data in following areas and its statistical analysis:

- Knowledge scores
- Skill scores
- Result score/Customer satisfaction score

**Knowledge Scores**

Knowledge scores are evaluated through role-play evaluation for executives from experimental group. This test included customer handling skills of executives. Role-play are evaluated the skill evaluation sheet used at BSES. Results of knowledge test are given below:

**Pre-Training Knowledge Score Comparison – Experimental Group vs Control Group**

Table 5.2: Pre-training Knowledge Score Comparison – Experimental Group vs Control Group - BSES

<table>
<thead>
<tr>
<th></th>
<th>Mean knowledge score Pre-training (%)</th>
<th>σ (Standard Deviation) of knowledge scores Pre-Training</th>
<th>Pre-Training Knowledge Scores Difference of Means (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>39.04</td>
<td>18.77</td>
<td>-3.53</td>
<td>0.51</td>
<td>3.012</td>
</tr>
<tr>
<td>Control Group</td>
<td>42.57</td>
<td>17.46</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparison of pre-training knowledge scores for experimental group and control group is shown in table 5.2. This comparison shows that, while
the average pre-training knowledge score for experimental group is 39.04%, the average pre-training knowledge score for control group is 42.57%. The difference of means shows that pre-training average scores for control group are higher by 3.53%, when compared to pre-training knowledge scores for the experimental group. This may be due to higher knowledge level of control group employees as compared to experimental group employees.

't' is calculated by formula,

\[ t = \frac{(M_1-M_2)}{\sqrt{\left(\frac{o_1^2}{n_1}+\frac{o_2^2}{n_2}\right)\cdot\left(1-(\gamma^2)\right)}} \]

In this case, since the samples are independent, the value of \( \gamma=0 \)

\[ t = 0.67 \]

t score of 0.67 is less than t-critical value of 2.16 at 95% significance (0.05) level and t-critical value of 3.012 at 99% significance (0.01) level. This means that even though the average knowledge score for control group employees is higher than average knowledge score of experimental group employees, this difference is not significant at 99% significance level. Hence, both experimental group and control group employees can be considered as statistically equal, when compared with respect to their knowledge scores.
Post-Training Knowledge Scores

Table 5.3: Post-training Knowledge Scores - BSES

<table>
<thead>
<tr>
<th></th>
<th>Mean knowledge score Post-training (%)</th>
<th>σ (Standard Deviation) of knowledge scores Post-Training</th>
<th>Post-Training Knowledge Scores Difference of Means (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Group</strong></td>
<td>76.29</td>
<td>16.3</td>
<td>31.98</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td>44.31</td>
<td>13.89</td>
<td></td>
</tr>
</tbody>
</table>

Comparison of post-training knowledge scores for experimental group and control group is shown in table 5.3. This comparison shows that, while the average post-training knowledge score for experimental group is 76.29%, the average post-training knowledge score for control group is 44.31%. The difference of means shows that post-training average scores for experimental group are higher by 31.98%, when compared to post-training knowledge scores for the control group.

This demonstrates movement of difference of means for knowledge scores by 35.51%, post-training in favour of the experimental group. Since, same evaluation was conducted for both experimental group and control group employees, after similar time durations, higher increase in knowledge level among experimental group employees as compared to control group employees may be attributed to training, which has been provided to experimental group employees only.
Experimental Group Knowledge Scores

Table 5.4: Experimental Group Knowledge Scores - BSES

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Mean Knowledge Score (%)</th>
<th>σ (Standard Deviation) of knowledge scores</th>
<th>Knowledge Scores Difference of Means (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>39.04</td>
<td>18.77</td>
<td>37.25</td>
<td>7.87</td>
<td>3.012</td>
</tr>
<tr>
<td>Post-Training</td>
<td>76.29</td>
<td>16.3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Experimental group knowledge scores are shown in table 5.4. This shows that for the experimental group of 24 executives, average pre-training knowledge score was 39.04% with standard deviation of 18.77. Post-training average knowledge score for experimental group has increased to 76.29% with standard deviation of 16.3. Difference of means is 37.25%. Average knowledge scores for experimental group, pre-training and post-training has improved by 95.41%. This shows that there is substantial improvement in knowledge scores of experimental group employees post-training.

Value of t for pre-training knowledge score and post-training knowledge score for experimental group is 7.87. This is greater than t-critical value of 3.012 at 99% significance (0.01) level. Hence, when compared with pre-training knowledge scores, there is significant improvement in knowledge scores after the training for the experimental group. This demonstrates that training has resulted in enhance knowledge level for experimental group employees.
Control Group Knowledge Scores

Table 5.5: Control Group Knowledge Scores - BSES

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Mean Knowledge Score (%)</th>
<th>$\sigma$ (Standard Deviation) of knowledge scores</th>
<th>Knowledge Scores Difference of Means (D)</th>
<th>T</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>42.57</td>
<td>17.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Training</td>
<td>44.31</td>
<td>13.89</td>
<td>1.74</td>
<td>0.40</td>
<td>3.012</td>
</tr>
</tbody>
</table>

Control group knowledge scores are shown in table 5.5. This shows that for the control group of 26 executives, average pre-training knowledge score was 42.57% with standard deviation of 17.46. Average knowledge score for control group post-training has increased to 44.31% with standard deviation of 13.89. Difference of means is 1.74%.

Average knowledge scores for control group, pre-training and post-training has improved by 4.07%. This marginal improvement in knowledge scores for the control group may be attributed to on-the-job learning process by control group employees.

$t=0.40$

Value of $t$ for pre-training knowledge score and post-training knowledge score for control group is 0.40. This is lesser than $t$-critical value of 3.012 at 99% significance (0.01) level. Hence, when compared with pre-training knowledge scores, improvement in knowledge scores calculated for the control group has not been found as significant. This
demonstrates that through the natural process of on-the-job learning, improvement in knowledge level of executives is not significant. Pre-training knowledge level for both the experimental group and control group, was found to be same. Post-training the improvement in knowledge scores for experimental group is found to be significant, while improvement in knowledge scores for control group is found to be not significant at 99% significance (0.01) level. While there is improvement in knowledge level of employees due to on-the-job learning and development, however, this improvement is not significant. Since, the only difference in two groups is administration of training to experimental group and no training inputs for control group. Hence, the significant improvement of knowledge scores of experimental group can be attributed to training.

In this case, null hypotheses 1, ‘H₀₁: Training will not impact the knowledge of sales and service executives in service industry’ is rejected. As demonstrated in table 5.3, 5.4 and 5.5, training has significantly impacted the knowledge of sales executives in service industry. Thus, alternate hypotheses 1, ‘H₁₁. Training impacts the knowledge of the sales and service executives in service industry’, is accepted
Graphical Representation of Knowledge Scores

Knowledge scores for both the experimental group and the control group evaluated before training and after training can also be shown graphically, as in figure 5.3.

Figure 5.3: Graphical Representation of Knowledge Scores - BSES

Skill Evaluation Scores

Skill scores were evaluated on the basis of skill assessment sheet used by BSES at their call centre. Skill evaluations were done by a single observer to ensure consistency in evaluation. These assessments were done prior to training and 2 months post-training in a time slot of 2 weeks. Three calls of each executive were listened and evaluated and final scores were average scores of 3 calls. Executives from both
experimental group and control group were observed on defined template.

Results of skill evaluation test are given below in table:

**Pre-Training Skill Evaluation Score Comparison: Experimental Group vs Control Group**

Table 5.6: Pre-training Skill Evaluation Score Comparison: Experimental Group vs Control Group - BSES

<table>
<thead>
<tr>
<th></th>
<th>Mean skill evaluation score Pre-training (%)</th>
<th>σ (Standard Deviation) of skill evaluation scores Pre-Training</th>
<th>Pre-Training skill evaluation scores Difference of Means (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experimental Group</strong></td>
<td>34.52</td>
<td>0.14</td>
<td>- 1.85</td>
<td>0.51</td>
<td>3.012</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td>36.67</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparison of pre-training skill evaluation scores for experimental group and control group is shown in table 5.6. This comparison shows that, while the average pre-training skill evaluation score for experimental group is 34.52%, the average pre-training skill evaluation score for control group is 36.37%. The difference of means shows that pre-training average scores for control group are higher by 1.85%, when compared to pre-training skill evaluation scores for the experimental group. This may be due to higher on-the-job skill level of control group employees as compared to experimental group employees.

\[ t = 0.51 \]
t score of 0.51 is less than t-critical value of 3.012 at 99% significance (0.01) level. This means that even though the average skill evaluation score for control group employees is higher than average skill evaluation score of experimental group employees, this difference is not significant at 99% significance level. Hence, both experimental group and control group employees can be considered as statistically equal, when compared with respect to their skill evaluation scores.

### Post-Training Skill Evaluation Scores

<table>
<thead>
<tr>
<th></th>
<th>Mean skill evaluation score Post-training (%)</th>
<th>σ (Standard Deviation) of skill evaluation scores Post-Training</th>
<th>Post-Training skill evaluation scores Difference of Means (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>63.33</td>
<td>0.11</td>
<td>24.76</td>
</tr>
<tr>
<td>Control Group</td>
<td>38.57</td>
<td>0.11</td>
<td></td>
</tr>
</tbody>
</table>

Comparison of post-training skill evaluation scores for experimental group and control group is shown in table 5.7. This comparison shows that, while the average post-training skill evaluation score for experimental group is 63.33%, the average post-training skill evaluation score for control group is 38.57%. The difference of means shows that post-training average scores for experimental group are higher by 24.76%, when compared to post-training skill evaluation scores for the control group.
This demonstrates movement of difference of means for skill evaluation scores by 26.61%, post-training in favour of the experimental group. This demonstrates movement of difference of means for knowledge scores by 35.51%, post-training in favour of the experimental group. Since, same evaluation was conducted for both experimental group and control group employees, after similar time durations, higher increase in on-the-job skill evaluation score among experimental group employees as compared to control group employees may be attributed to training, which has been provided to experimental group employees only.

**Experimental Group Skill Evaluation Scores**

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Mean Skill Evaluation Score (%)</th>
<th>σ (Standard Deviation) of Skill Evaluation Scores</th>
<th>Skill Evaluation Scores Difference of Means (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>34.52</td>
<td>0.14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Training</td>
<td>63.33</td>
<td>0.11</td>
<td>28.81</td>
<td>11.18</td>
<td>3.012</td>
</tr>
</tbody>
</table>

Experimental group skill evaluation scores are shown in table 5.8. This shows that for the experimental group of 24 executives, average pre-training skill evaluation score was 34.52% with standard deviation of 0.14. Post-training average skill evaluation score for experimental group post-training has increased to 63.33% with standard deviation of 0.11. Difference of means, D = 28.81%. This shows that there is substantial
improvement in on-the-job skill evaluation scores of experimental group employees post-training.

Average skill evaluation scores for experimental group, pre-training and post-training has improved by 83.45%.

Value of $t$ for pre-training skill evaluation score and post-training skill evaluation score for experimental group is 11.18. This is greater than $t$-critical value of 2.16 at 95% significance (0.05) level and $t$-critical value of 3.012 at 99% significance (0.01) level. Hence, when compared with pre-training knowledge scores, there is significant improvement in on-the-job skill evaluation scores after the training for the experimental group. This demonstrates that training has resulted in increased on-the-job skill level for experimental group employees.

**Control Group Skill Evaluation Scores**

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Mean Skill Evaluation Score (%)</th>
<th>$\sigma$ (Standard Deviation) of Skill Evaluation Scores</th>
<th>Skill Evaluation Scores Difference of Means (D)</th>
<th>t</th>
<th>$t$-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>36.37</td>
<td>0.11</td>
<td></td>
<td>2.20</td>
<td>1.56</td>
</tr>
<tr>
<td>Post-Training</td>
<td>38.57</td>
<td>0.11</td>
<td></td>
<td>2.20</td>
<td>3.012</td>
</tr>
</tbody>
</table>

Control group skill evaluation scores are shown in table 5.9. This shows that for the control group of 26 executives, average pre-training skill evaluation score was 36.37% with standard deviation of 0.11. Average
skill evaluation score for control group post-training has increased to 38.57% with standard deviation of 0.11. Difference of means, D = 2.20

Average skill evaluation scores for control group, pre-training and post-training has improved by 6.04%. This marginal improvement in on-the-job skill evaluation scores for the control group may be attributed to on-the-job learning process by control group employees.

t = 1.56

Value of t for pre-training skill evaluation score and post-training skill evaluation score for control group is 1.56. This is lesser than t-critical value of 3.012 at 99% significance (0.01) level. Hence, when compared with pre-training on-the-job skill evaluation scores, improvement in skill evaluation scores calculated for the control group has not been found as significant. This demonstrates that through the natural process of on-the-job learning, improvement in on-the-job skill level of executives is not significant.

Pre-training on-the-job skill level for both the experimental group and control group, was found to be same. Post-training the improvement in on-the-job skill evaluation scores for experimental group is found to be significant, while improvement in on-the-job skill evaluation scores for control group is found to be not significant at 99% significance (0.01) level. While there is improvement in on-the-job skill level of employees due to on-the-job learning and development, however, this improvement is not significant. Since, the only difference in two
groups is administration of training to experimental group and no training inputs for control group. **Hence, the significant improvement of on-the-job skill evaluation scores of experimental group can be attributed to training.**

In this case, null hypotheses 2, \( H_02: \) Training will not impact on-the-job skill of sales and service executives in service industry' is rejected. As demonstrated in table 5.7, 5.8 and 5.9, training has significantly impacted on-the-job skills of service executives in service industry.

Thus, alternate hypotheses 2, \( H_12. \) Training impacts on-the-job skills of the sales and service executives in service industry', is accepted

**Graphical Representation of Skill Evaluation Scores**

Skill evaluation scores for both the experimental group and the control group evaluated before training and after training can also be shown graphically, as in figure 5.4.
Result Evaluation

Business results were evaluated in terms of customer satisfaction score, measured through percentage of customers have rated the interaction with executive as very good or excellent on a '5' point scale. This is also called at BSES as score of 'top two boxes' to measure customer delight. Customer satisfaction scores were provided by BSES, through their tracking software. Since, customer satisfaction may also be impacted by number of attributes, not only on an interaction with executive, one week data of customer responses has been taken for this study. During this period there was no noticeable reason like power grid failure was there to
impact customer perception. Customer satisfaction figures, top two box score are given in table below:

**Pre-Training Customer Satisfaction Figures – Experimental Group vs Control Group**

Table 5.10: Pre-training Customer Satisfaction Scores Comparison: Experimental Group vs Control Group - BSES

<table>
<thead>
<tr>
<th>Pre-Training Scores</th>
<th>Average Customer Rating in Top Two Box (%)</th>
<th>$\sigma$ (Standard Deviation) of Customer Rating</th>
<th>Pre-Training Customer Rating Difference of Means (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>40.33</td>
<td>15.97</td>
<td>-1.50</td>
<td>0.38</td>
<td>3.012</td>
</tr>
<tr>
<td>Control Group</td>
<td>41.83</td>
<td>10.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comparison of pre-training customer satisfaction scores for experimental group and control group is shown in table 26. This comparison shows that, while the average customer satisfaction score, rating in top two box for experimental group pre-training is 40.33%, the average customer satisfaction score, rating in top two box for control group pre-training is 41.83%. The difference of means shows that pre-training score for control group are higher by 1.50%, when compared to pre-training scores for the experimental group. This may be due to better on-the-job performance by control group employees as compared to experimental group employees.

$t = 0.38$
t score of 0.38 is less than t-critical value of 2.16 at 95% significance (0.05) level and t-critical value of 3.012 at 99% significance (0.01) level. This means that even though the average customer satisfaction score for control group employees is higher than average customer satisfaction score of experimental group employees, this difference is not significant at 99% significance level. Hence, both experimental group and control group employees can be considered as statistically equal, when compared with respect to their business performance of average customer satisfaction score.

**Post-Training Customer Satisfaction Figures – Experimental Group vs Control Group**

Table 5.11: Post-training: Customer Satisfaction Scores Comparison – Experimental Group vs Control Group - BSES

<table>
<thead>
<tr>
<th>Post-Training Scores</th>
<th>Average Customers Rating in Top Two Box (%)</th>
<th>( \sigma ) (Standard Deviation) of Customer Rating</th>
<th>Pre-Training Customer Rating Difference of Means (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental Group</td>
<td>49.86</td>
<td>13.84</td>
<td>6.39</td>
</tr>
<tr>
<td>Control Group</td>
<td>43.47</td>
<td>11.13</td>
<td></td>
</tr>
</tbody>
</table>

Comparison of post-training customer satisfaction scores for experimental group and control group is shown in table 5.11. This comparison shows that, while the average customer satisfaction score, rating in top two box for experimental group post-training is 49.86%, the average customer satisfaction score, rating in top two box for control group post-training is 43.47%. The difference of means shows that post-
training score for experimental group are higher by 6.39%, when compared to post-training scores for the control group. This demonstrates movement of difference of means for customer satisfaction scores, percentage of customers rating in top two boxes in 7.89%, post-training in favour of the experimental group. Since, business result of customer satisfaction scores was evaluated for both experimental group and control group employees, during same time duration; steeper increase in customer satisfaction score among experimental group employees as compared to control group employees may be attributed to training, which has been provided to experimental group employees only.

**Experimental Group Customer Satisfaction Figures – Percentage of Customers rating in top two box**

Table 5.12: Experimental Group – Customer Satisfaction Scores - BSES

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Average Customers Rating in Top Two Box (%)</th>
<th>(\sigma) (Standard Deviation) of Customer Rating</th>
<th>Difference of Means – Average Customer Rating (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>40.33</td>
<td>15.97</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Training</td>
<td>49.86</td>
<td>13.84</td>
<td>9.53</td>
<td>3.50</td>
<td>3.012</td>
</tr>
</tbody>
</table>

Experimental group customer satisfaction scores are shown in table 5.12. This shows that for the experimental group of 24 executives, average percentage of customers rating executives in top-two box pre-training was 40.33 with standard deviation of 15.97. Post-training
customer rating in top two boxes for experimental group post-training has increased to 49.86% with standard deviation of 13.84. Difference of means, $D = 9.53\%$. This shows that there is substantial improvement in customer satisfaction scores of experimental group employees post-training.

Average customer rating in top two boxes for experimental group, pre-training and post-training has improved by 23.63%.

$t = 3.50$

Value of $t$ for pre-training customer satisfaction score and post-training customer satisfaction score for experimental group is 3.50. This is greater than $t$-critical value of 3.012 at 99% significance (0.01) level. Hence, when compared with pre-training customer satisfaction scores, there is significant improvement in customer satisfaction scores after the training for the experimental group. This demonstrates that training has resulted in enhance customer satisfaction scores for experimental group employees.
Control Group Customer Satisfaction Figures – Percentage of Customers rating in top two box

Table 5.13: Control Group: Customer Satisfaction Scores - BSES

<table>
<thead>
<tr>
<th>Control Group</th>
<th>Average Customers Rating in Top Two Box (%)</th>
<th>σ (Standard Deviation) of Customer Rating</th>
<th>Difference of Means – Average Customer Rating (D)</th>
<th>t</th>
<th>t-critical at 99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>41.83</td>
<td>10.01</td>
<td>1.64</td>
<td>0.38</td>
<td>3.012</td>
</tr>
<tr>
<td>Post-Training</td>
<td>43.47</td>
<td>11.13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Control group customer satisfaction scores are shown in table 5.13. This shows that for the control group of 26 executives, average percentage of customers rating executives in top-two box pre-training was 41.83 with standard deviation of 10.01. Customer rating in top two boxes for control group post-training has increased to 43.47% with standard deviation of 11.13. Difference of means, D = 1.64

Average customer rating in top two boxes for control group, pre-training and post-training has improved by 3.92%. This marginal improvement in customer satisfaction scores for the control group may be attributed to on-the-job learning process by control group employees leading to their improved performance or some extraneous factor.

\[ t = 0.38 \]

Value of t for pre-training and post-training customer satisfaction score for control group is 0.38. This is lesser than t-critical value of 3.012 at 99% significance (0.01) level. Hence, when compared with pre-training
customer satisfaction score, improvement in customer satisfaction score calculated for the control group has not been found as significant. This demonstrates that through the natural process of on-the-job learning, improvement in business performance in terms of customer satisfaction score of executives is not significant.

Pre-training business performance of customer satisfaction score for both the experimental group and control group was found to be same. Post-training the improvement in business performance of customer satisfaction score for experimental group is found to be significant, while improvement in business performance for control group is found to be not significant at 99% significance (0.01) level. While there is improvement in business performance of employees due to on-the-job learning and development, however, this improvement is not significant. Since, the only difference in two groups is administration of training to experimental group and no training inputs for control group. Hence, the significant improvement of business performance of customer satisfaction score of experimental group can be attributed to training.

In this case, null hypotheses 3, ‘Hₐ3: Training will not impact business performance of sales and service executives in service industry’ is rejected. As demonstrated in table 5.11, 5.12 and 5.13, training has significantly impacted the business performance of service executives in service industry.
Thus, alternate hypotheses 3, ‘$H_3$. Training impacts the performance on key business parameters’, is accepted.

**Graphical Representation of Customer Satisfaction Scores**

Customer satisfaction scores for both the experimental group and the control group evaluated before training and after training are shown in figure 5.5.

Figure 5.5: Graphical Representation of Results: Customer Satisfaction Score - BSES
CORRELATION BETWEEN OUTPUT PARAMETERS

The shift in all output parameters of knowledge scores, on-the-job skill scores and monthly sales per person was found to be significant at 99% significance level for the experimental group. Correlation between intermediate output parameter of knowledge scores and on-the-job skill evaluation scores and final business result of customer satisfaction score for the experimental group has been calculated to evaluate cause-effect relationship between various output parameters.

Correlation between knowledge scores and on-the-job skill evaluation scores

Correlation between knowledge scores and skill evaluation scores for the experimental group was calculated, as shown in table 5.14.

Table 5.14: Correlation between knowledge and skill evaluation scores for experimental group - BSES

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Knowledge Score (%)</th>
<th>Skill Evaluation Score (%)</th>
<th>Y</th>
<th>6 P.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>39.04</td>
<td>34.52</td>
<td>0.65</td>
<td>0.48</td>
</tr>
<tr>
<td>Post-Training</td>
<td>76.29</td>
<td>63.33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Correlation between knowledge and skill score movement pre-training and post-training for experimental group was measured at 0.65.

Probable error was calculated using following formula:

\[ P.E.\gamma = 0.6745 \left(\frac{\gamma^2}{\sqrt{n}}\right) \]

Probable error (PE) was measured at 0.08.
6 \textit{PE} = 0.48.

Since $6\text{PE} < \gamma$ for knowledge score and skill evaluation scores for experimental group, the correlation between knowledge score and skill evaluation score is statistically significant. This can be attributed to improvement in on-the-job skill of the employee due to his increased knowledge level. Increase in knowledge may have resulted in increased understanding and ability to perform the job at hand, resulting in better on-the-job skill. This correlation is evident from table 5.14. Hence, null hypotheses, $H_04$: On-the-job skills of sales and service executive will not be significantly related to their knowledge' is rejected and alternate hypotheses $H_14$. On-the-job skills of sales and service executive are significantly related to knowledge of executive', is accepted in this case.

**Correlation between knowledge scores and customer satisfaction score for the experimental group**

Correlation between knowledge scores and customer satisfaction score, percentage of customers rated the call in top two box for the experimental group was calculated, as shown in table 5.15.

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Knowledge Score (%)</th>
<th>Average Customers Rating in Top Two Box (%)</th>
<th>$\gamma$</th>
<th>$6 \text{P.E.}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>39.04</td>
<td>40.33</td>
<td>0.30</td>
<td>0.75</td>
</tr>
<tr>
<td>Post-Training</td>
<td>76.29</td>
<td>49.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Correlation between knowledge and customer satisfaction scores, that is average percentage of customers rated in top two boxes for experimental group was measured at 0.30.

Probable error (PE) was calculated using formula shown above and is measured at 0.12.

$6 \text{ PE} = 0.75$.

Since $6 \text{ PE} > \gamma$ for knowledge score and customer satisfaction scores for control group, the correlation between knowledge score and customer satisfaction score is not statistically significant. Customer satisfaction rating is the resultant of customer perception of interaction with employee. While employee knowledge may have increased substantially, as is evident from table 5.4, this has not led to similar increase in customer satisfaction scores. This may be attributed to lag between improvement in employee knowledge and improvement in employee on-the-job skill level. Thus while there is improvement is intermediate output parameter of employee knowledge and employee on-the-job skill and final outcome of business parameter of customer satisfaction score, however, improvement in business parameter has not been as significant as in case of employee knowledge. This correlation may improve, with increased employee ability to implement the knowledge in real work environment. This is evident from table 5.15. Hence, null hypotheses, $H_05$: Performance on business parameters of sales and service executive
will not be significantly related to their knowledge’ is accepted in this case.

**Correlation between skill evaluation scores and customer satisfaction score for the experimental group**

Correlation between skill evaluation scores and customer satisfaction score, percentage of customers rated the call in top two box for the experimental group was calculated, as shown in table 5.16.

Table 5.16: Correlation between skill evaluation scores and customer satisfaction scores for experimental group - BSES

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>Skill Evaluation Score (%)</th>
<th>Average Customers Rating in Top Two Box (%)</th>
<th>Y</th>
<th>6P.E.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Training</td>
<td>34.52</td>
<td>40.33</td>
<td>0.70</td>
<td>0.41</td>
</tr>
<tr>
<td>Post-Training</td>
<td>63.33</td>
<td>49.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Correlation between skill evaluation score and customer satisfaction scores, which is average percentage of customers rated in top two boxes for experimental group was measured at 0.70.

Probable error (PE) was calculated using formula shown above and is measured at 0.068.

6 PE = 0.41.

Since 6PE < γ for skill evaluation score and customer satisfaction scores for control group, the correlation between skill evaluation score and customer satisfaction score is found to be statistically significant. This can be attributed to improvement in business result of customer
satisfaction score for the employee due to increased on-the-job skill level of the employee. Increase in on-the-job skill may have resulted in increase in employee ability to perform the job at hand, effective customer handling in this case, resulting in better performance on-the-job and increased productivity in terms of customer satisfaction scores. This correlation is evident from table 5.16. Hence, null hypothesis, ‘H06: Performance on business parameters of sales and service executive will not be significantly related to their on-the-job skills’ is rejected and alternate hypothesis ‘H16: Performance on business parameters of sales and service executives is significantly related to their on-the-job skill’ is accepted in this case.

CONCLUSION
The control group and experimental group are clearly segregated, as they had different supervisors, though sitting at same location. Only difference between control group and experimental group was administration of training to experimental group, which was absent in control group. The output parameters of training at intermediate stage were evaluated in terms of knowledge scores and skill evaluation scores, which can be primarily influenced by training inputs. The correlation of these output parameters was calculated between knowledge scores and skill evaluation scores with the ultimate business objective of customer satisfaction score, percentage of customers rated the call in top two box.
The data clearly demonstrate that there is a significant improvement in intermediate results of training i.e. knowledge scores (table 5.4) and skill evaluation scores (table 5.8) for the experimental group. However, the improvement in case of control group for knowledge scores (table 5.5) and skill evaluation scores (table 5.9) is not statistically significant. Data further shows that there has been significant change in ultimate business critical parameter of customer satisfaction score (table 5.12) for experimental group, while the change in customer satisfaction score (table 5.13) for control group is not significant. This improvement in intermediate results of knowledge score and skill evaluation score and ultimate result of customer satisfaction score can be attributed to training, which is the only difference in two groups.

The data also clearly demonstrates that there is significant correlation between intermediate parameters of knowledge scores and skill evaluation score (table 5.14) and skill evaluation scores and business result of customer satisfaction score (table 5.16) for the experimental group. Hence, in this organization, the linkage between training and intermediate results of knowledge and skill evaluation scores and skill evaluation score and business result of customer satisfaction score is established.

However, the linkage between intermediate result of knowledge score and ultimate business critical parameter of customer satisfaction (table 5.15) could not be established clearly, i.e. change in knowledge of employee
may not necessarily result in change in improvement of business performance.