CHAPTER – V

FINDINGS AND CONCLUSION

5.1 INTRODUCTION

The concept of QM is quite old and has its origin in Japan after the Second World War with emphasis on improving quality and using quality control tools in the manufacturing sector. Later, the QM concept moved to the USA, the UK, and other countries and was applied initially in the manufacturing sector. Since then, the idea of QM has been growing fast. It has now taken a shape in a series of International Standards in the ISO 9000 series. Numerous approaches of QM were suggested in order to help industries improve efficiency and competitiveness through improvement of quality. One of the most popular and often recommended approach is the philosophy of TQM that seeks to integrate all organisational functions to focus on meeting and surpassing customers’ requirements and organisational objectives.

Education is considered to be a liberating force and also a democratising force, cutting across the barriers of caste and class, smoothing out inequalities imposed by birth and other circumstances. Education is also an active agent of social transformation, economic growth and HRD. Thus education is considered to be the nerve centre of life in the present era. HE imparts in-depth knowledge and understanding so as to advance the Students to new frontiers of knowledge in different walks of life. It broadens the intellectual power of an individual with a narrow specialisation, but also gives citizens a wider perspective of the world around.

The previous chapters have discussed the concept of TQM, and analysed the primary data in line with the research questions. The results of the SERVQUAL and
Six Sigma DMAIC Methodology with respect to the Students’ perception on NAAC Quality Dimensions in Indian HLIs also exhibited in a detailed manner. This chapter discusses the various findings and lists suggestions for enhancing the Quality Status of Indian HLIs. The study also lists various issues and areas which are not within its scope, and taken up for further research.

5.2 STATEMENT OF THE PROBLEM

Quality has been a central issue for researchers in the field of education for quite some years now. Still the application of TQM in HLIs is questionable and the implementation rate is very negligible in comparison to other sectors like industry, service, etc. According to estimates made in 2009-10 by “The Associated Chambers of Commerce and Industry of India” (ASSOCHAM), over 5 lakh Students choose to go abroad every year to pursue quality HE. According to the Times Higher Education, the Global Rating of Indian HLIs is very low with regard to the International quality parameters. The passing of “Foreign Education Bill” will not only dramatically enhance the profile of the HE in India, but also help to save outflow of 7.5 billion of foreign exchange per annum as a large number of Indian Students are going abroad for receiving HE. This changing scenario will create stiff competition for Indian HLIs for its survival. Though the numbers of Universities and Colleges have increased substantially, the quality aspects are estimated as inadequate. In this scenario, this study which aims at assessing the present status of TQM in HLIs will be of much relevance and help the policy makers with its findings and suggestions. For the purpose of undertaking this research work, the following objectives are identified.

5.3 RESEARCH OBJECTIVES OF THE STUDY

For this purpose, various objectives are listed and the specific objectives are:
1. To identify whether there is any significant difference in Students’ perception on \textit{NAAC} quality dimensions in India.
2. To identify whether there is any significant relationship between \textit{NAAC} quality dimensions and \textit{TQM} status.
3. To study whether there exists Institution-wise difference in Students’ perception on \textit{NAAC} quality dimensions in India.
4. To find out whether there is any difference exists between Gender, Discipline and Academic Level on \textit{NAAC} quality dimensions in respect of Govt. and Private Colleges in India.

\textbf{5.4 HYPOTHESES}

Based on the above objectives, ten main null hypotheses have been formulated for the purpose of this study.

\(H_0^1\): There is no significant difference in Students’ perception on \textit{NAAC} quality dimensions in India.

\(H_0^2\): There is no significant difference in mean score between male and female Students with regard to perception on \textit{NAAC} quality dimensions in India.

\(H_0^3\): There is no significant difference in mean score between Govt. and Private College Students with regard to perception on \textit{NAAC} quality dimensions in India.

\(H_0^4\): There is no significant difference in mean score between \textit{UG}, \textit{PG} and \textit{RS} with regard to perception on \textit{NAAC} quality dimensions in India.

\(H_0^5\): There is no significant difference in mean score between Arts and Science Students with regard to perception on \textit{NAAC} quality dimensions in India.

\(H_0^6\): There is no significant relationship between \textit{NAAC} quality dimensions and \textit{TQM} status in India.
H₀⁷: There is no significant perception difference between Govt. and Private College Students on NAAC quality dimensions in India.

H₀⁸: There is no significant difference between male and female Students on NAAC quality dimensions in respect of Govt. and Private College Students in India.

H₀⁹: There is no significant difference between UG, PG as well as RS on NAAC quality dimensions in respect of Govt. and Private College Students in India.

H₀¹⁰: There is no significant difference between Arts and Science Students on NAAC quality dimensions in respect of Govt. and Private College Students in India.

5.5 METHODOLOGY

“Status of Total Quality Management in Higher Learning Institutions in India: A Social Perspective Study with Reference to Accredited Arts and Science Colleges” is a study based on primary data. The primary data has been collected from the Students in Southern States through questionnaires and SERVQUAL Techniques are adopted. This study has also applied Six Sigma Techniques through DMAIC Methodology.

The present study has measured the Students’ perception on the basis of seven NAAC Quality Dimensions. The Students in Indian HLIs have been categorised into four, namely, Male and Female Students, Govt. and Private College Students, UG, PG and RS, and Arts and Science Students. The total number of Students enrolled in NAAC Accredited Arts and Science Colleges in Southern States is 7,81,530 as on 31st December, 2011. For the purpose of collecting data from 62 NAAC accredited Arts and Science Colleges, this study has selected 22,500 Students by adopting “Disproportionate Stratified Random Sampling Technique”.

5.6 PROCESSING AND ANALYSIS OF DATA

The data collected from various sources have been classified and tabulated by applying appropriate statistical techniques. The statistical tools used for analysis are Reliability Analysis, Mean, Standard Deviation, One Sample ‘t’ test, Independent Sample ‘t’ Test, ANOVA followed by Duncan Multiple Range test, Pearson Correlation Analysis, Discriminant Analysis and MANOVA.

The Quality status of Indian HIs on NAAC Quality Dimensions has been tested on the basis of Students’ perception. The types of analysis are based on SERVQUAL and Six Sigma Techniques are presented below:

1. The differences in Students’ perception on all NAAC quality dimensions in India has been tested by using One Sample ‘t’ test, Independent Sample ‘t’ test and ANOVA followed by Duncan Multiple Range Test.

2. The most influential NAAC quality dimensions have been identified by using Pearson Correlation Analysis through DMAIC Methodology in Six Sigma Techniques.

3. Variation in Students’ perception between Govt. and Private Colleges on NAAC quality dimensions in India has been analysed by using Discriminant Analysis.

4. The difference between Gender, Discipline and Academic Level on NAAC quality dimensions in respect of Govt. and Private College Students in India has been analysed by using MANOVA.
5.7 FINDINGS

TQM can be understood as a general management philosophy and set of tools which allows an Institution, to pursue quality path and a means for attaining the objectives, with quality being a continuous improvement ascertained by consumers’ contentment with the services they have received. TQM can be applied by HLIs but it must be modified to fully recognise some unique aspects of education. (It is a service industry, invisible and intangible).

Service quality sub-dimensions should be developed specifically to suit the industry due to the inability to identify a common set of sub-dimensions and it is related to satisfaction. In the case of HE, it is viewed as perceived excellence. From the analysis, this study has made inferences based on the Students’ overall perception on NAAC Quality Dimensions in Indian HLIs. The Six Sigma inferences are also presented. The findings are presented in the following sections.

These four research objectives were addressed by testing 10 Main Hypotheses and 42 Sub-Hypotheses, developed in Chapter IV. Hypotheses 1 through 5 relate to Research Objective 1, Hypotheses 6 relates to Research Objective 2, Hypotheses 7 relates to Research Objective 3 and Hypotheses 8 through 10 relate to Research Objective 4.

5.7.1 Perception Difference between Students on NAAC Quality Dimensions

– Research Objective 1

The first objective was achieved as a result estimates the perception difference among the students in various accredited Arts and Science Colleges in Southern India is identified. The primary dimensions of NAAC quality dimensions are Curricular
Aspects, Teaching, Learning and Evaluation, Infrastructure and Learning Resources, Research, Consultancy and Extensions, Student Support and Progression, Governance and Leadership and Innovative Practices, as identified in the literature review, supported by Khattab and Fraij, (2011); Malik, et al. (2010); Katiliute, (2010); Kwek, et al. (2010) and Vaniarajan and Vijayadurai, (2010), and supported by the statistical analysis.

Out of seven NAAC quality dimensions, “Student Support Progression” (SSP) dimension has influenced more in estimating the level of perception among students. This result agree with the findings of Nadiri, (2006) and Chua, (2004) that have identified as the most important for the Students to gain competitive advantage with respect to their fellow students.

**TABLE 5.1** presents the Perception difference between Students on factors of NAAC quality dimensions.

**TABLE 5.1**

Perception Difference between Students on Factors of NAAC Quality Dimensions

<table>
<thead>
<tr>
<th>Perception on NAAC Quality Dimensions</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA8</td>
<td>3.63</td>
</tr>
<tr>
<td>TLE8</td>
<td>3.63</td>
</tr>
<tr>
<td>ILR9</td>
<td>3.57</td>
</tr>
<tr>
<td>RCE9</td>
<td>3.64</td>
</tr>
<tr>
<td>SSP2</td>
<td>3.73</td>
</tr>
<tr>
<td>GL2</td>
<td>3.58</td>
</tr>
<tr>
<td>IP1</td>
<td>3.68</td>
</tr>
</tbody>
</table>

*Source: Computed Results based on Primary Data using SPSS*
The mean value 3.63 mentioned in the table indicates the fact that the Students’ perception on one of the dimensions namely “Curricular Aspects” (CA) is strongly influenced by “Curriculum is relevant to the Regional/National Developmental needs” (CA8) factor. The result empirically supports the earlier study of Hussain, et al. (2011) in which it is concluded that curriculum development influences the Students’ perception more.

The mean value 3.63 mentioned in the table denotes the fact that the Students’ perception on one of the dimensions namely “Teaching, Learning and Evaluation” (TLE) is strongly influenced by “Faculty Recruitment Process is Systematic and Rigorous” (TLE8) factor. This result empirically supports the earlier study of Malik, et al. (2010) concludes that Students’ satisfaction is influenced by multiple quality dimensions.

The mean value 3.57 mentioned in the table denotes the fact that the Students’ perception on one of the dimensions namely “Infrastructure and Learning Resources” (ILR) is strongly influenced by “Infrastructural Facilities are Augmented from Time to Time” (ILR9) factor. This finding is different from Khan, (2006).

The mean value 3.64 mentioned in the table denotes the fact that the Students’ perception on one of the dimensions namely “Research, Consultancy and Extension” (RCE) is strongly influenced by “Render Consultancy Services to Industries, Government, NGO/Community/ Public” (RCE9) factor.

The mean value 3.73 mentioned in the table denotes the fact that the Students’ perception on one of the dimensions namely “Student Support and Progression” (SSP) is strongly influenced by “Ensures Institutional Information
Access and Dissemination” (SSP2) factor. This result empirically supports the earlier studies of Nadiri, (2006) and Chua, (2004)

- The mean value 3.58 mentioned in the table denotes the fact that the Students’ perception on one of the dimensions namely “Governance and Leadership” (GL) is strongly influenced by “Conducts Self-Appraisal of Teaching and Non-Teaching Staff” (GL2) factor.

- The mean value 3.68 mentioned in the table denotes the fact that the Students’ perception on one of the dimensions namely “Innovative Practices” (IP) is strongly influenced by “Mechanism Developed for Quality Assurance within the Existing Academic and Administrative System” (IP1) factor.

5.7.2 Perception Difference between Male and Female Students on NAAC Quality Dimensions

While comparing the Perception difference between male and female Students, it is identified that out of seven NAAC quality dimensions, the male Students are highly influenced by the factors such as “Curricular Aspects” (CA) dimension, which is supported by the earlier research work by Khan, (2008). The female Students are highly influenced by “Student Support and Progression” (SSP) dimension, which is supported by the earlier research work of Ham and Hayduk, (2003).

While comparing the Perception difference between male and female Students on factors of NAAC quality dimensions, it is identified from the table that the male Students are highly influenced by the factors such as “Participative Learning Techniques” (TLE2), “Effective & User-Friendly Library Operations” (ILR5),
“Health Services Optimally to make the Campus Safe for Students” (SSP7) and “Ambience for Creativity, Innovation and Quality” (IP2) compared to the other factors which have significant values. This result empirically supports the earlier study of Khan, (2008).

**TABLE 5.2** presents the Perception Difference between Male and Female Students on factors of NAAC quality dimensions.

**TABLE 5.2**

Perception Difference between Male and Female Students on Factors of NAAC Quality Dimensions

<table>
<thead>
<tr>
<th>Quality Dimensions</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>-</td>
<td>Moderate perception difference is found on CA1, CA3, CA4, CA5, CA7, CA8, CA9 and CA10.</td>
</tr>
<tr>
<td>TLE</td>
<td>Moderate perception difference is found on TLE1, TLE2, TLE5, TLE6, TLE8 and TLE9.</td>
<td>-</td>
</tr>
<tr>
<td>ILR</td>
<td>Moderate perception difference is found on ILR1, ILR2, ILR3, ILR4, ILR5, ILR6, ILR7 and ILR8.</td>
<td>-</td>
</tr>
<tr>
<td>RCE</td>
<td>Moderate perception difference is found on RCE9.</td>
<td>Moderate perception difference is found on RCE1, RCE2, RCE3, RCE4, RCE5, RCE6, RCE7 and RCE8.</td>
</tr>
<tr>
<td>SSP</td>
<td>Moderate perception difference is found on SSP6 and SSP7.</td>
<td>Moderate perception difference is found on SSP1, SSP2, SSP3, SSP4, SSP5 and SSP9.</td>
</tr>
<tr>
<td>GL</td>
<td>Moderate perception difference is found on GL1, GL2, GL4, GL5, GL6, GL7, GL8 and GL9.</td>
<td></td>
</tr>
<tr>
<td>IP</td>
<td>Moderate perception difference is found on IP1, IP2 and IP3.</td>
<td>Moderate perception difference is found on IP6, IP7, IP18, IP9 and IP10.</td>
</tr>
</tbody>
</table>

*Source: Computed Results based on Primary Data using SPSS*
It is identified from the table that the female Students are highly influenced by the factors such as “Implementation of Choice-Based Credit System and Inter-departmental Mobility is Limited” (CA10), “Establishment of Specific Research Units/Centres” (RCE4), “Organise student cultural activities” (SSP9), “Specific complaints/legal enquiry about the Institutions functioning” (GL6) and “Provide an active support and strengthen the neighbourhood communities” (IP10) compared to the other factors which have significant values. The factors which have significant values are supported by Tan and Kek, (2004) and Hamid and (Pihie, 2004).

5.7.3 Perception Difference between Govt. and Private College Students on NAAC Quality Dimensions

While comparing the Perception difference between Govt. College and Private College Students, it is identified that out of seven NAAC quality dimensions, the Govt. College Students are highly influenced by “Student Support and Progression” (SSP) dimension and the Private College Students are highly influenced by “Teaching, Learning and Evaluation” (TLE) dimension. This result empirically supports the earlier research work of Khan, (2008).

While comparing the Perception difference between Govt. and Private College Students on factors of NAAC quality dimensions, it is identified from the table that the Govt. College Students are highly influenced by the factors such as “Faculty takes initiative in the curriculum development process and demonstrates creativity and innovation in teaching methodology” (CA9), "Early declaration of results” (TLE4) and “Access to library beyond working hours with networking” (ILR2) compared to the other factors which have significant values. This result empirically supports the earlier research work of Norwani, (2005).
TABLE 5.3 presents the Perception Difference between Govt. College and Private College Students on factors of NAAC Quality Dimensions.

**TABLE 5.3**
Perception Difference between Govt. College Students and Private College Students on Factors of NAAC Quality Dimensions

<table>
<thead>
<tr>
<th>Quality Dimensions</th>
<th>Govt.</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>CA</em></td>
<td>Moderate perception difference is found on <em>CA1</em> and <em>CA9</em>.</td>
<td>Moderate perception difference is found on <em>CA5</em>, <em>CA6</em> and <em>CA10</em>.</td>
</tr>
<tr>
<td><em>TLE</em></td>
<td>Moderate perception difference is found on <em>TLE4</em> and <em>TLE5</em>.</td>
<td>Moderate perception difference is found on <em>TLE7</em>.</td>
</tr>
<tr>
<td><em>ILR</em></td>
<td>Moderate perception difference is found on <em>ILR2</em>, <em>ILR3</em> and <em>ILR7</em>.</td>
<td>Moderate perception difference is found on <em>ILR4</em> and <em>ILR10</em>.</td>
</tr>
<tr>
<td><em>RCE</em></td>
<td>-</td>
<td>Moderate perception difference is found on <em>RCE1</em>, <em>RCE2</em>, <em>RCE3</em>, <em>RCE4</em>, <em>RCE5</em>, <em>RCE6</em>, <em>RCE7</em>, <em>RCE9</em> and <em>RCE10</em>.</td>
</tr>
<tr>
<td><em>SSP</em></td>
<td>-</td>
<td>Moderate perception difference is found on <em>SSP1</em>, <em>SSP2</em>, <em>SSP3</em>, <em>SSP4</em>, <em>SSP5</em>, <em>SSP8</em>, <em>SSP9</em> and <em>SSP10</em>.</td>
</tr>
<tr>
<td><em>GL</em></td>
<td>-</td>
<td>Moderate perception difference is found on <em>GL1</em>, <em>GL2</em>, <em>GL3</em>, <em>GL4</em>, <em>GL5</em>, <em>GL6</em>, <em>GL7</em>, <em>GL8</em>, <em>GL9</em> and <em>GL10</em>.</td>
</tr>
<tr>
<td><em>IP</em></td>
<td>-</td>
<td>Moderate perception difference is found on <em>IP1</em>, <em>IP2</em>, <em>IP3</em>, <em>IP4</em>, <em>IP5</em>, <em>IP6</em>, <em>IP7</em>, <em>IP8</em>, <em>IP9</em> and <em>IP10</em>.</td>
</tr>
</tbody>
</table>

*Source: Computed Results based on Primary Data using SPSS*
The Private College Students are highly influenced by the factors such as “Implementation of Choice-based credit system and Interdepartmental mobility is limited” (CA10), “Library resources are effectively used to augment teaching and learning” (TLE7), “Appropriate Facilities for differently-abled student” (ILR10) “Publicise the expertise available for consultancy services” (RCE6), “Organise student cultural activities” (SSP9), “Institutional initiatives for mobilisation of resources” (GL8) and “Promotes inclusive practices for social justice and better stakeholder relationships” (IP6) compared to the other factors which have significant values. The factors which have significant values are supported by Khan, (2008) and Kelso, (2008).

5.7.4 Perception Difference between UG, PG and RS on NAAC Quality Dimensions

While comparing the Perception difference between UG, PG and RS, it is identified that out of seven NAAC quality dimensions, the UG Students are highly influenced by “Innovative Practices” (IP) dimension and the RS are highly influenced by “Governance and Leadership” (GL) dimension, The results agree with the findings of Ham and Hayduk, (2003) and Clemes et al. (2001).

While comparing the Perception difference between UG, PG and RS on factors of NAAC quality dimensions, it is identified from the table that the UG Students are highly influenced by the factors such as “ICT is effectively used with computers” (TLE3), “Library resources are augmented every year with newer edition and titles” (ILR7), “Health services optimally to make the campus safe for Students” (SSP7) and “Conducts program for professional development of staff” (GL7) compared to the other factors which have significant values. These results agree with the findings of Clemes et al. (2001).
TABLE 5.4 presents the Perception Difference between UG, PG and RS on factors of NAAC Quality Dimensions.

### TABLE 5.4
Perception Difference between UG, PG and RS on Factors of NAAC Quality Dimensions

<table>
<thead>
<tr>
<th>Quality Dimensions</th>
<th>UG</th>
<th>PG</th>
<th>RS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CA</strong></td>
<td>-</td>
<td>Moderate perception difference is found on CA3 and CA9.</td>
<td>Moderate perception difference is found on CA1, CA2, CA4 and CA5, CA6, CA8 and CA10.</td>
</tr>
<tr>
<td><strong>TLE</strong></td>
<td>Moderate perception difference is found on TLE3, TLE5, TLE7 and TLE10.</td>
<td>Moderate perception difference is found on TLE9.</td>
<td>Moderate perception difference is found on TLE1, TLE2, TLE4 and TLE6.</td>
</tr>
<tr>
<td><strong>ILR</strong></td>
<td>Moderate perception difference is found on ILR2, ILR3, ILR4, ILR5, ILR6, ILR7 and ILR8.</td>
<td>-</td>
<td>Moderate perception difference is found on ILR10.</td>
</tr>
<tr>
<td><strong>RCE</strong></td>
<td>-</td>
<td>Moderate perception difference is found on RCE2, RCE6, RCE7 and RCE9 and RCE10.</td>
<td>Moderate perception difference is found on RCE3, RCE4 and RCE5.</td>
</tr>
<tr>
<td><strong>SSP</strong></td>
<td>Moderate perception difference is found on SSP7.</td>
<td>-</td>
<td>Moderate perception difference is found on SSP1, SSP4, SSP5, SSP6, SSP9 and SSP10.</td>
</tr>
<tr>
<td><strong>GL</strong></td>
<td>Moderate perception difference is found on GL7.</td>
<td>Moderate perception difference is found on GL8.</td>
<td>Moderate perception difference is found on GL2, GL4, GL5, GL6, GL9 and GL10.</td>
</tr>
<tr>
<td><strong>IP</strong></td>
<td>-</td>
<td>-</td>
<td>Moderate perception difference is found on IP2, IP3, IP4, IP5, IP6, IP7, IP8 and IP10.</td>
</tr>
</tbody>
</table>

*Source: Computed Results based on Primary Data using SPSS*
The PG Students are highly influenced by the factors such as “Faculty takes initiative in the curriculum development process and demonstrates creativity and innovation in teaching methodology” (CA9), “Faculty development programs are initiated and utilised” (TLE9), “Encourage and promote research culture” (RCE2) and “Institutional initiatives for mobilisation of resources” (GL8) compared to the other factors which have significant values. These results agree with the findings of Clemes et al. (2001).

The RS are highly influenced by the factors such as “Number of value-added courses offered” (CA2), “Wide publicity and transparency in the admission process” (TLE1), “Appropriate Facilities for differently-abled student” (ILR10), “Establishment of specific research units/centres” (RCE4), “Percentage Progression of the Students to further studies and for employment” (SSP4), “Optimal utilisation of budget” (GL10) and “Promotes inclusive practices for social justice and better stakeholder relationships” (IP6) compared to the other factors which have significant values. These results agree with the findings of Clemes et al. (2001).

5.7.5 Perception Difference between Arts and Science Students on NAAC Quality Dimensions

While comparing the Perception difference between Arts and Science Students, it is identified that out of seven NAAC quality dimensions, the Arts Students are highly influenced by “Innovative Practices” (IP) dimension. The result agrees with the findings of Clemes et al. (2001).

TABLE 5.5 presents the Perception difference between Arts and Science Students on factors of NAAC Quality Dimensions.
<table>
<thead>
<tr>
<th>Quality Dimensions</th>
<th>Arts</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CA</strong></td>
<td>Moderate perception difference is found on <strong>CA2</strong>.</td>
<td>Moderate perception difference is found on <strong>CA1</strong>, <strong>CA4</strong>, <strong>CA5</strong>, <strong>CA8</strong>, <strong>CA9</strong> and <strong>CA10</strong>.</td>
</tr>
<tr>
<td><strong>TLE</strong></td>
<td>Moderate perception difference is found on <strong>TLE1</strong>, <strong>TLE2</strong>, <strong>TLE4</strong> and <strong>TLE5</strong>.</td>
<td>Moderate perception difference is found on <strong>TLE10</strong>.</td>
</tr>
<tr>
<td><strong>ILR</strong></td>
<td>Moderate perception difference is found on <strong>ILR2</strong>, <strong>ILR3</strong>, <strong>ILR4</strong>, <strong>ILR5</strong>, <strong>ILR6</strong>, <strong>ILR7</strong>, <strong>ILR8</strong> and <strong>ILR9</strong> at 1% level.</td>
<td>-</td>
</tr>
<tr>
<td><strong>RCE</strong></td>
<td>-</td>
<td>Moderate perception difference is found on <strong>RCE1</strong>, <strong>RCE2</strong>, <strong>RCE3</strong>, <strong>RCE5</strong>, <strong>RCE6</strong>, <strong>RCE7</strong> and <strong>RCE10</strong>.</td>
</tr>
<tr>
<td><strong>SSP</strong></td>
<td>Moderate perception difference is found on <strong>SSP6</strong> and <strong>SSP7</strong>.</td>
<td>Moderate perception difference is found on <strong>SSP1</strong>, <strong>SSP2</strong>, <strong>SSP3</strong>, <strong>SSP4</strong>, <strong>SSP5</strong>, <strong>SSP9</strong> and <strong>SSP10</strong>.</td>
</tr>
<tr>
<td><strong>GL</strong></td>
<td>Moderate perception difference is found on <strong>GL1</strong>, <strong>GL2</strong>, <strong>GL4</strong> and <strong>GL5</strong>.</td>
<td>Moderate perception difference is found on <strong>GL9</strong>.</td>
</tr>
<tr>
<td><strong>IP</strong></td>
<td>Moderate perception difference is found on <strong>IP1</strong>, <strong>IP2</strong>, <strong>IP3</strong> and <strong>IP4</strong>.</td>
<td>Moderate perception difference is found on <strong>IP7</strong>, <strong>IP8</strong>, <strong>IP9</strong> and <strong>IP10</strong>.</td>
</tr>
</tbody>
</table>

Source: Computed Results based on Primary Data using SPSS

While comparing the Perception difference between Arts and Science Students on factors of NAAC quality dimensions, it is identified from the table that the Arts Students are highly influenced by the factors such as “Number of value-added courses offered” (CA2), “Participative Learning Techniques” (TLE2), "Library resources are augmented every year with newer editional and titles” (ILR7), “Health services optimally to make the campus safe for Students”(SSP7), “Conducts self-appraisal of teaching and Non-teaching staff” (GL2) and “Make special efforts to achieve gender balance amongst Students and staffs” (IP4) compared to the other factors which have significant values.
The Science Students are highly influenced by the factors such as “Effective Feedback Mechanism is utilized for updating course content” (CA5), “Student grievances regarding evaluation results are addressed” (TLE10), “Mutual benefits accrued due to consultancy services” (RCE7), “Percentage Progression of the Students to further studies and for employment” (SSP4), “Budgetary provisions for academic and administrative activities” (GL9) and “Anticipate public concerns with current and future program offerings and operations” (IP8) compared to the other factors which have significant values. These results agree with the findings of Ham and Hayduk, (2003) and Clemes et al. (2001).

5.7.6 Relationship between NAAC Quality Dimensions and TQM status

– Research Objective 2

From the six sigma results, it is inferred that out of the seven NAAC quality dimensions, the “Innovative Practices” (IP) dimension is the most influential factor between the pre and post-estimation period during XI Plan.

**TABLE 5.6** presents the Results of Relationship between factors of NAAC Quality Dimensions and TQM status.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Items</th>
<th>Value (%)</th>
<th>SEPTEMBER 2009</th>
<th>SEPTEMBER 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CA10</td>
<td>20.8</td>
<td>55.6</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TLE8</td>
<td>40.8</td>
<td>65.3</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ILR9</td>
<td>27.0</td>
<td>60.1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>RCE8</td>
<td>41.3</td>
<td>59.8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SSP3</td>
<td>43.3</td>
<td>66.4</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>GL1</td>
<td>42.6</td>
<td>66.9</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>GL4</td>
<td>47.1</td>
<td>61.7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>IP8</td>
<td>32.4</td>
<td>58.2</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>IP10</td>
<td>36.2</td>
<td>62.0</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Computed Results based on Primary Data using SPSS*
• The Table value denotes that out of the 10 factors of “Curricular Aspects” (CA), “Implementation of Choice-based credit system and Inter-departmental mobility is limited” (CA10) is the most influential factor.

• The Table value denotes that out of the 10 factors of “Teaching, Learning and Evaluation” (TLE), “Faculty recruitment process is systematic and rigorous” (TLE8) is the most influential factor.

• The Table value denotes that out of the 10 factors of “Infrastructure and Learning Resources” (ILR), “Infrastructural facilities are augmented from time to time” (ILR9) is the most influential factor.

• The Table value denotes that out of the 10 factors of “Research Consultancy and Extension” (RCE), “Received significant quantum of research grants from external agencies” (RCE8) is the most influential factor.

• The Table value denotes that out of the 10 factors of “Student Support and Progression” (SSP), “Special coaching classes conducted for appearing in various competitive examinations” (SSP3) is the most influential factor.

• The Table value denotes that out of the 10 factors of “Governance and Leadership” (GL), “Availability of Management decision to staff and Students” (GL1) and “Conducts Performance Appraisal regularly” (GL4) are the most influential factors.

• The Table value denotes that out of the 10 factors of “Innovative Practices” (IP), “Anticipate public concerns with current and future program offerings and operations” (IP8) and “Provide an active support and strengthen the neighbourhood communities” (IP10) are the most influential factors. These findings are consistent with Kaushik and Khanduja, (2010).
5.7.7 Perception between Govt. and Private College Students on NAAC Quality Dimensions – Research Objective 3

- 60.2% of the Govt. College Students have been classified based on the perception on NAAC Quality dimensions than Private College Students in India. This finding has been consistent with the contention of earlier work by Vaniarajan and Vijayadurai, (2010).

5.7.8 Perception Difference between Gender, Academic Level and Discipline in respect of Govt. and Private College Students on NAAC Quality Dimensions – Research Objective 4

- 98.1% of the Male and Female Students have positive perception on NAAC Quality Dimensions in respect of Govt. and Private Colleges in India.

- 97.8% of the UG, PG as well as RS have positive perception on NAAC Quality Dimensions in respect of Govt. and Private Colleges in India.

- 99.3% of the Arts and Science Students have high positive perception on NAAC Quality Dimensions in respect of Govt. and Private Colleges in India. These findings have consistent with the contention of earlier work by Vaniarajan and Vijayadurai, (2010).

5.8 SUGGESTIONS

- The present study suggests that the Students are highly influenced by the “Student Support and Progression” dimension in accredited Arts and Science Colleges in Southern India. The support services provided by the Colleges have not reached the Students. Also, the result indicates that the level of perception towards “Innovative Practices”, “Research, Consultancy and Extension” and “Curricular Aspects” dimensions are found to be very low among
the Students. Hence, the management must inspire the Students to participate in their curriculum development process, Research Projects and community-orientation activities.

- The study indicates that the Students are highly influenced by “Curriculum is relevant to the regional/national developmental needs”. The concept of uniform curriculum in all the Colleges as suggested by UGC has not enthused the students. The curriculum should be designed taking into account the regional/national developmental needs. Also, the result indicates that the level of perception towards the factors such as “Curriculum design is practical oriented and challenging”, “Implementation of Choice-based credit system and Inter-departmental mobility is limited” and “Classes regularly conducted” are found to be very low among the Students. Academicians must encourage the Students to attend the regular classes and made to cope up with the practical oriented curriculum and the choice-based credit system.

- The study reveals that the Students are highly influenced by “Faculty recruitment process is systematic and rigorous”. As the recruitment of faculty becomes systematic, the Students have got the benefit of more classes regularly without any interference. Also, the result indicates that the level of perception towards the factors such as “Student grievances regarding evaluation results are addressed”, “Wide publicity and transparency in the admission process” and “Examination processes are transparent and reliable” are found to be very low among the Students. Hence, the management should make necessary arrangements for solving Students’ grievances regarding evaluation results, extensive admission and examination process.
The research work concludes that the Students are highly influenced by “Infrastructure facilities and updation from time to time”. Also, this result indicates that the level of perception towards the factors such as “Appropriate Facilities for differently-abled Student”, “Adequate Common facilities available” and “Effective & user-friendly library operations” are found to be very low among the Students. Administration has to arrange for facilities such as Staff room, Health Centre, Vehicle Parking, Guest House, Canteen, Telephone, Internet Café, Transport, Drinking Water, Gym, swimming pool, auditorium, linking EDUSAT, virtual classrooms, play ground with sports equipment etc. required for the Students in order to absorb the full content of the curriculum in a most efficient manner.

The study points out that the Students are highly influenced by “Render consultancy services to Industries, Government, NGO/Community/ Public”. As the benefits of consultancy services facilitate more supporting systems for the Students in the form of books, periodicals, outside exposures, computers etc., the Students give more weightage to this factor. Also, this result indicates that the level of perception towards the factors such as “Research facilities are enhanced through research projects”, “Establishing research committees for promoting and directing research”, “Initiate research by collaborating with other research Organizations/industry” and “Establishment of specific research units/centres” are found to be very low among the Students. Hence, the academicians must encourage the Students to engage in various research projects from UGC, Indian Council of Social Science Research (ICSSR) and Council of Scientific and Industrial Research (CSIR). This will enhance the employability skills among them to seek suitable jobs. The employability
factor is the major concern expressed by Confederation of Indian Industries (CII) and ASSOCHAM.

- The study brings to light the fact that the Students are highly influenced by “Ensures Institutional information access and dissemination” relating to admission process, availability of choices, fees structures and other career development activities. Also, the result indicates that the level of perception towards the factors such as “Access to and use of recreational /leisure time activities to Students”, “Organise Student cultural activities” and “Percentage Progression of the Students to further studies and for employment” are found to be very low among the Students. The management must boost-up the Students to organise the cultural activities, workshops and seminars related to employment opportunities even in holidays.

- The analysis concludes that the Students are highly influenced by “Conducts self-appraisal of teaching and Non-teaching staff”. The present system of evaluating the teachers’ performance has not inspired the Students. Also, this result indicates that the level of perception towards the factors such as “Optimal utilisation of budget”, “Budgetary provisions for academic and administrative activities” and “Conducts programme for professional development of staff are found to be very low among the Students. Hence, the administrators should conduct various faculty development programmes through optimum use of funds.

- The study suggests that the Students are highly influenced by “Mechanism developed for quality assurance within the existing academic and administrative system”. This results in clear understanding of academic and
administrative structure. Also, the result indicates that the level of perception on factors such as “Promotes inclusive practices for social justice and better stakeholder relationships”, “Promote social responsibilities and citizenship roles among the Students” and “Anticipate public concerns with current and future program offerings and operations” is found to be very low among the Students. Administrators should encourage the Students to serve the society through receiving donations and make necessary arrangements to get financial assistance from various financial Institutions.

- It is understood from the findings that the Male Students are highly influenced by “Curricular Aspects” dimension. This is due to the fact that the male students are adopting to the changing system. Also, they are involved more in the competency development, creativity and innovation aspects rather than the other factors. As the Male Students are giving least importance to the level of perception towards on “Student Support and Progression” dimension, the management should motivate the male Students to attend the special coaching classes for competitive examinations and to organise the cultural activities during their leisure time.

- The study indicates that the Female Students are highly influenced by “Student Support and Progression” dimension. This is due to the fact that the female students have focused more on their future activities than the male students. Hence, the academicians must take necessary steps to educate the girl students to cope up with practical oriented extra classes during holidays and extended hours.
The research work points out that the Govt. College Students are highly influenced by “Student Support and Progression” dimension. As the cost and value of the education is going up, the Govt. should focus its attention in implementing various Student Support Services such as wide distribution of Institutional information, placement and counselling services, than the Private Colleges. Hence, efforts should be taken by the Govt. Colleges for recruiting the highly talented teachers.

The study reveals that the Private College Students are highly influenced by “Teaching, Learning and Evaluation” dimension, as they are incurring huge expenditure for their education. Administrators should motivate the Students to participate in student support services for reducing the drop-out rate of students in the Colleges.

The study concludes that the UG Students are highly influenced by “Innovative Practices” dimension. This is due to the fact that the Students have concentrated on community-orientation activities to strengthen the neighbourhood communities. Administrators should encourage the Students to participate in student support services such as organising student cultural activities in the Colleges.

The study indicates that the RS are highly influenced by “Innovative Practices”. This is due to the fact that the Students have concentrated on community-orientation activities to strengthen the neighbourhood communities. Academicians should encourage the Students to participate in governance and leadership practices such as “Conducts self-appraisal of teaching and Non-teaching staff, Specific complaints/legal enquiry about the
Institutions functioning and Institutional initiatives for mobilisation of resources”. Administrators should also encourage the Students to promote social responsibilities and citizenship roles and ambience for creativity, innovation and quality. Though the Institutions are providing necessary infrastructure, the level of participation is less among PG Students. For this purpose, it is suggested that Students’ attention can be maintained by periodically giving them something to do in the class. The most common is a small group exercises. The teacher can tell the Students to form groups of 2 or 3; when the groups are in place, the teacher can pose a short problem and inform the group to come up with a response.

- The study has identified that the Arts Students have higher positive perception on “Innovative Practices” than the Science Students. This is due to the fact that the Management which provides fund allocation and implements various TQM initiatives has not proportionately allotted fund to the science departments. The problem of inadequacy of infrastructure facilities in the science department should be attended immediately. For this purpose, a clustering formula should be introduced, so that the facilities available in one Department can be utilized by other departments within the same campus. This will improve the science Students’ perception to a larger extent.

- The study has shed light to the fact that the “Innovative Practices” is the most influential NAAC Quality Dimension in Students’ perspective level. The Management has to concentrate more on:
  - Implementation of Choice-based credit system and Inter-departmental mobility is limited
Faculty recruitment process is systematic and rigorous

Infrastructural facilities are augmented from time to time

Promoting social responsibilities and citizenship roles

Received significant quantum of research grants from external agencies

Special coaching classes conducted for appearing in various competitive examinations

Availability of Management decision to staff and students

Anticipate public concerns with current and future program offerings and operations

The Students in Govt. Colleges have significant difference in perception on Curricular Aspects, Teaching, Learning and Evaluation, Infrastructure, Student Support and Innovative Practices. This is due to the fact that Govt. Colleges are strictly following the rules and regulations of UGC, Ministry of HRD and other governing bodies which facilitate better Infrastructure, Teaching and Learning process, Innovative Practices, etc. The Govt. has to take immediate steps to regulate and supervise the Private Institutions for improving the Quality status.

TABLE 5.7 projects the Summary of Hypotheses and Inferences with respect to Students’ perception on NAAC Quality Dimensions.
<table>
<thead>
<tr>
<th>H. No</th>
<th>Hypotheses</th>
<th>Inferences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>There is no significant difference in Students’ perception on <strong>NAAC</strong> Quality Dimensions in India.</td>
<td>Higher positive perception with regard to Student Support and Progression than the other <strong>NAAC</strong> Quality Dimensions.</td>
</tr>
<tr>
<td>2.</td>
<td>There is no significant difference in mean score between Male and Female Students with respect to perception on <strong>NAAC</strong> Quality Dimensions in India.</td>
<td>The female Students have higher positive perception than the male Students.</td>
</tr>
<tr>
<td>3.</td>
<td>There is no significant difference in mean score between Govt. and Private College Students with respect to perception on <strong>NAAC</strong> Quality Dimensions in India.</td>
<td>The Govt. College Students have higher positive perception than the Private College Students.</td>
</tr>
<tr>
<td>4.</td>
<td>There is no significant difference in mean score between <strong>UG, PG</strong> and <strong>RS</strong> with respect to Perception on <strong>NAAC</strong> Quality Dimensions in India.</td>
<td>The <strong>UG</strong> Students have higher positive perception on <strong>ILR, RCE, SSP</strong> and <strong>IP</strong> and the <strong>RS</strong> have higher positive perception on <strong>TLE</strong> and <strong>GL</strong>.</td>
</tr>
<tr>
<td>5.</td>
<td>There is no significant difference in mean score between Arts and Science Students with respect to perception on all <strong>NAAC</strong> Quality Dimensions in India.</td>
<td>The Arts Students have high positive perception on <strong>CA, ILR, RCE, GL</strong> and <strong>IP</strong>.</td>
</tr>
<tr>
<td>6.</td>
<td>There is no significant relationship between <strong>NAAC</strong> Quality Dimensions and <strong>TQM</strong> Status.</td>
<td>The “Innovative Practices” is the most influential <strong>NAAC</strong> Quality Dimensions in Students’ perception on <strong>TQM</strong> status.</td>
</tr>
<tr>
<td>7.</td>
<td>There is no significant perception difference between Govt. and Private College Students on <strong>NAAC</strong> Quality Dimensions in India.</td>
<td>60.2% of the Govt. College Students have been classified based on the perception on <strong>NAAC</strong> Quality dimensions than Private College Students in India.</td>
</tr>
<tr>
<td>8.</td>
<td>There is no significant difference between male and female Students on <strong>NAAC</strong> Quality Dimensions in respect of Govt. and Private College Students in India.</td>
<td>98.1% of the Male and Female Students have positive perception on <strong>NAAC</strong> Quality Dimensions in respect of Govt. and Private College Students in India.</td>
</tr>
<tr>
<td>9.</td>
<td>There is no significant difference between <strong>UG, PG</strong> as well as <strong>RS</strong> on <strong>NAAC</strong> Quality Dimensions in respect of Govt. and Private College Students in India.</td>
<td>97.8% of the <strong>UG, PG</strong> as well as <strong>RS</strong> have positive perception on <strong>NAAC</strong> Quality Dimensions in respect of Govt. and Private College Students in India.</td>
</tr>
<tr>
<td>10.</td>
<td>There is no significant difference between Arts and Science Students on <strong>NAAC</strong> Quality Dimensions in respect of Govt. and Private College Students in India.</td>
<td>99.3% of the Arts and Science Students have high positive perception on <strong>NAAC</strong> Quality Dimensions in respect of Govt. and Private College Students in India.</td>
</tr>
</tbody>
</table>

Source: Interpretation results based on primary data using SPSS.
5.9 CONCLUSION

Quality is a buzz word in today’s world of education. It has become an important ideology of education. There are some genuine apprehensions among academics and social critics on the negative impact of managerial and market approaches to quality processes. There are fears that quality processes may result in loss of academic autonomy and creativity, that standardization may become the order and that ‘appearance’ may assume more importance than ‘substance’. These apprehensions may not be without basis. But, the positive side of quality assurance needs further strengthening. Quality makes the education more relevant of its social transformative and individual development role. There are many steps that can be listed out to ensure the quality of education in HE. These are transitory in nature and one must continuously look for new ways of achieving the objective of quality education.

Achieving the four research objective of this study leads to many contributions for improving the theoretical and managerial understanding of the HE sector.

5.9.1 Theoretical Contributions

The first Research Objective which calls for identifying whether there is any significant difference in Students’ Perception on NAAC quality dimensions in India has paved the way for understanding several issues. This study which provides a more detailed analysis of Students’ perception on the Quality Status of HE adds additional information to the existing literature in HE. Also, it sheds light to the fact that there is a strong relationship between Student support system and quality of HE.
The achievement of the second Research Objective has shed light on the fact that there exists a strong relationship between the dimensions prescribed by NAAC and Total Quality status. More specifically, the existing literature on HE gains this additional information namely Innovative Practices factor influences strongly the perceptual level among the Students. Consequently, this study provides a more comprehensive understanding of the relationships between satisfaction, service quality, price, image etc.

The achievement of the third Research Objective has contributed to the existing literature by providing crucial information for the policy makers to understand that the Public Funding Institutions is playing a major role and the Private HLIs needs more attention with regard to providing quality education for the citizens of this country.

The achievement of the fourth Research Objective which analyses the demographical characteristics of the Students such as Gender, Academic Level and Discipline in relation to constructs such as service quality and satisfaction has given strong clues for the policy makers for improving the quality status of HE system. Also, it provides the valuable framework for HE management to aid them in identifying the variables that are important to the Students when they evaluate their academic experience.

5.9.2 Managerial Contributions

By achieving all the four Research Objectives, this study has highlighted the managerial implications which indicate that, to achieve sustainability in the present day scenario, where many foreign players are likely to have their shops in India, the
educational managers are expected to apply a market-oriented approach which is adopted in many profit-oriented service organisations. It is also identified that the dimension of service quality varies across industries and cultures. The education management should note that the primary and sub-dimensional structures must be developed meticulously to suit their own specific Institution and other unique features, for accurately measuring the Students’ perception. The results of the study suggest that improvement in the level of Students’ perception on service quality would enhance students’ satisfaction levels.

5.10 LIMITATIONS OF THE STUDY

- This study is restricted to only NAAC accredited Arts and Science Colleges only in Southern States and has not included other Institutions.

- The study has got the data only from the Students and omitted other stakeholders namely Teachers, Administrators and others.

- The study has not considered the HLIs which are not accredited by NAAC, though they may perform better than the accredited Colleges.

- The data was obtained from NAAC source as on 31ˢᵗ December, 2011.

- There is no equal proportion of Students between male and female, Govt. and Private, UG, PG and RS in the sample.

- The results of the study may not be conclusive and accurate as the data collected is of qualitative nature.
5.11 SUGGESTIONS FOR FURTHER RESEARCH

- This study relates to only the present status of TQM in NAAC accredited Colleges. Future research can be taken up on the status of Non-accredited Colleges.

- Further research can also be carried out in Technological Universities, Colleges and in schools.

- This study has analysed only the Students’ perception. Hence, further research can be carried out on other stakeholders namely teachers, administrators and others in HLIs.

- This study has applied Six Sigma Techniques to identify the relationship between TQM and NAAC Quality Dimensions. Likewise, the other TQM techniques like Quality Function Deployment, Continuous Process Improvement, EFQM and Benchmarking can also be applied.

- A comparative study may be attempted between the Central Universities and State Universities.