CHAPTER III

RESEARCH METHODOLOGY

Overview

III.1 Research Design
III.2 Scope of the Research
III.3 Sampling Design
III.4 Data Collection Design
III.5 Conceptual Framework
III.6 Research Questions and Hypotheses
III.7 Validity
III.8 Reliability
III.9 Limitations of Research
III.1 RESEARCH DESIGN

There are three broad types (Malhotra, 2006) of research designs used, namely, exploratory, descriptive and causal. The latter two are referred to as conclusive research.

Causal research: This design is defined as “research designed to collect raw data and create data structures and information that will allow the researcher to model cause-and-effect relationships between two or more market (or decision) variables”. Causal studies aim to explain causality between environmental factors to create a framework for decision makers to understand that “if ... happens, then ... will occur”. It often involves a technique of collecting data that gives precise and accurate information, since only factors linked to the hypothesis want to be studied. Causal research design was employed for current research based on service quality research model constructed for this research.

III.2 SCOPE OF THE RESEARCH

The scope of the research broadly encompassed sub themes like Management education, Category of Institution, Variables impacting satisfaction with intangibles, satisfaction with tangibles, satisfaction with learning & development, service quality of Management education institution and demographic profile.

III.3 SAMPLING DESIGN

In statistical surveys, when sub-populations within an overall population vary, it is advantageous to sample each sub-population (stratum) independently. Stratification (web 3.1) is the process of dividing members of the population into homogeneous sub-groups before sampling. The strata
should be mutually exclusive: every element in the population must be assigned to only one stratum. The strata should also be collectively exhaustive: no population element can be excluded. Then random or systematic sampling is applied within each stratum. This often improves the representativeness of the sample by reducing sampling error.

The formula for estimating sample size (Malhotra, 2006) when population is unknown is:

\[ n = \frac{\sigma^2 \cdot z^2}{D^2} \]

where \( n \) = estimated sample size; \( \sigma \) = standard deviation (value obtained from pilot study); \( D \) = acceptable level of error (significance level); \( Z \) = standard variate.

(i) **Survey of Students:**

*Population:* The population comprised students pursuing BBA / MBA degree programs in Salem district.

*Frame:* The frame comprised students pursuing BBA / MBA degree programs under full-time category in affiliated institutions in Salem district.

*Sampling Method:* Proportionate Stratified sampling was employed wherein strata comprised three categories, namely, institutions offering only UG programs, institutions offering only PG programs, and institutions offering both UG and PG programs.

*Sample size:* The standard deviation value of ‘learning and development’, one of the key dimensions, obtained from pilot study of 50 students was \( \sigma = 0.63417 \). The estimated sample size was computed using formula and was found to be 618 respondents (students). The sample size details are shown in Table 3.1. In the case of students the exact population was not officially available. Students pursuing full-time management education programs in affiliated institutes number a maximum of 60 per batch (section) per year. However, all seats may not have been
filled and there may be students who might have dropped out. 99.03% of the filled-in questionnaires was found to be valid and taken for data analysis. The estimated and actual sample sizes were 618 and 612 students respectively.

Table 3.1
Sample Size for Students

<table>
<thead>
<tr>
<th>Course</th>
<th>Colleges</th>
<th>Percentage (%)</th>
<th>Estimated Sample size (proportionate)</th>
<th>Rejections</th>
<th>Actual sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG</td>
<td>3</td>
<td>14</td>
<td>87</td>
<td>1</td>
<td>86</td>
</tr>
<tr>
<td>PG</td>
<td>14</td>
<td>67</td>
<td>414</td>
<td>3</td>
<td>411</td>
</tr>
<tr>
<td>Both</td>
<td>4</td>
<td>19</td>
<td>117</td>
<td>2</td>
<td>115</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100</td>
<td>618</td>
<td>6</td>
<td>612</td>
</tr>
</tbody>
</table>

Source: Researcher

(ii) Survey of Faculty:

*Population*: The population comprised full-time faculty serving in management education institutions offering BBA / MBA degree programs in Salem district.

*Frame*: The frame comprised full-time faculty serving in management education affiliated institutions offering BBA / MBA degree programs in Salem district.

*Sampling Method*: Proportionate Stratified sampling was employed wherein strata comprised three categories, namely, institutions offering only UG programs, institutions offering only PG programs, and institutions offering both UG and PG programs.
**Sample Size:** The standard deviation value of ‘learning and development’, one of the key dimensions, obtained from pilot study of 50 faculty was \( \sigma = 0.2638 \). The estimated sample size was computed using formula and was found to be 107 respondents (faculty). The sample size details are shown in Table 3.2. In the case of faculty the exact population was not officially available. Faculty in such institutes should ideally be in the ratio of 1 faculty for every 15 students. However, all full-time faculty vacancies may not have been filled and there may be faculty on medical / sabbatical leave. 98.1% of the filled-in questionnaires was found to be valid and taken for data analysis. The estimated and actual sample sizes were 107 and 105 faculty respectively.

### Table 3.2

**Sampling for Faculty**

<table>
<thead>
<tr>
<th>Course</th>
<th>Total No. of Colleges</th>
<th>Percentage (%)</th>
<th>Estimated Sample size (proportionate)</th>
<th>Rejections</th>
<th>Actual sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG</td>
<td>3</td>
<td>14</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>PG</td>
<td>14</td>
<td>67</td>
<td>72</td>
<td>2</td>
<td>70</td>
</tr>
<tr>
<td>Both</td>
<td>4</td>
<td>19</td>
<td>20</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>100</td>
<td>107</td>
<td>2</td>
<td>105</td>
</tr>
</tbody>
</table>

Source: Researcher
(iii) *Interviews with Heads of Departments*:

Census study was attempted for Heads of Department. The population and actual sizes for interviews were 21 and 16 Heads of Departments respectively as shown in Table 3.3.

### Table 3.3

**Heads of Department**

<table>
<thead>
<tr>
<th>Course</th>
<th>No. of Colleges / Head of Department</th>
<th>Unavailable</th>
<th>Refusals</th>
<th>Actual Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PG</td>
<td>14</td>
<td>0</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Both</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>2</td>
<td>3</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: Researcher

### III.4 DATA COLLECTION DESIGN

*Primary Data Collection Method*: Survey method was employed for students and faculty while interviews were conducted with Heads of Department at management education institutions offering full-time BBA / MBA degree programs in affiliated colleges in Salem.

*Primary Data Collection Instrument*: Undisguised structured questionnaire was employed for survey while unstructured interviews were conducted with Heads of department.
III.5 CONCEPTUAL FRAMEWORK

The conceptual model for this study is shown in Figure 3.1. This model tests the influence of intangible aspects of service quality (i.e., reliability, responsiveness, assurance, empathy) and with the tangible aspects of service quality as a direct influence on an individual’s overall perception of service quality. This model is based on an adaptation of service quality studies in the hospitality industry which was adapted by Parasuraman et al. (1991) SERVQUAL measurement. This model also tests the influence of holistic education.

Conceptual framework of the current research was based upon research gaps and exhaustive review of literature. The rationale behind constructing this framework was that it attempts to facilitate a more holistic model relating to service quality of the Institution by adding more determinants. The model has been inspired and partly adapted from (i) the adapted SERVQUAL model of Soutar (1996), Pariseau (1997), Chua (2004), (ii) Perceived service quality model of Morales (1999), (iii) Transformation system model of Sahney (2004), and (iv) Holonic model of Karapetrovic (1999).


Factors affecting service quality comprised three determinants and eight sub-determinants. The sub-determinants in turn comprised 30 variables.
In the case of survey of faculty, 26 variables were identified from survey of literature. These 26 variables comprised Innovative strategies, Tie-ups with foreign institutions, Reputation of the Institution, Institution-Corporate interaction, Institution’s vision & mission, Academic freedom, Participation in decision-making, Online / Digital resources, Peers, Resources for new initiatives, Professional networks, Opportunities for personal growth and development, Recognition of research and other achievements, Quality of students, Residential Accommodation, Campus maintenance, Class Room & Labs, Library facilities, Reprography (Xerox) facility, Support services, Office and administration, Campus technology, Program curriculum, Training Programs, Pursuing cross-disciplinary work, and Research Work.

Four variables were added to the study keeping in mind current scenario, namely, Deputation to external events, Balance between work and life, Compensation, and Job security.

In the case of survey of students, 29 variables were identified from survey of literature. These 29 variables comprised Innovative strategies, Quality of faculty, Reputation of Institution, Career Placements, Choice of specialization, Counselling, Online / Digital resources, Scholarships, Social & Environmental Sensitivity, Value-Added Courses, Admission process, Assessment system, Examination system, Recognition of achievements, Prompt response from Management, Residential accommodation, Library facilities, Reprography (Xerox) facility, Resources for learning, Sports/Recreation, Program curriculum, Training Programs, Clubs / Forums, Creativity, Entrepreneurial skills, Field assignments, Guest Lectures, Industrial Visits, and Co-curricular & Extra-curricular activities.

One variable was added to the study keeping in mind current scenario, namely, Alumni Interaction.
The Endogenous Variables were: Intangibles; Tangibles; Learning and Development, and Service Quality.

The Exogenous Variables were: Assurance; Empathy; Reliability; Responsiveness; Tangibles; Ambience; Spaces and utilities; Training; and Activities in multiple domains.

The brief meaning of dimensions and variables impacting service quality of management education institution is presented here:

Service Quality Dimensions:

1. **Assurance**: Ability to convey trust and confidence
2. **Empathy**: Ability to be approachable
3. **Reliability**: Perform promised service dependably and accurately
4. **Responsiveness**: Willingness to help customers promptly
5. **Tangibles**: Physical facilities and facilitating goods
6. **Ambience**: Atmosphere of the place
7. **Spaces and utilities**: Area & Facilities
8. **Training**: State of being trained
9. **Activities in multiple domains**: Performing things in different areas / disciplines.

Service Quality Variables:

1. **Resources for learning**: Study materials, Library, On-line/Digital Resources
2. **Innovative strategies**: The successful generation, development and implementation of new and novel ideas
3. **Reputation of institution**: Branding
4. **Program Curriculum**: Syllabus, course work
5. **Training Programs**: Program designed for training in specific skills

6. **Career Placements**: Professional means by which assisting students to find a job matching

7. **Quality of faculty**: Teaching skill, pedagogy

8. **Co-curricular and Extra-curricular activities**: Activities that education organization creates for students

9. **Recognition of achievements**: Appreciation for students’ success in academic, co-curricular and extra-curricular activities.

10. **Library facilities**: An organized collection of books, other printed materials, and in some cases special materials such as manuscripts, films and other sources of information

11. **Reprography (Xerox) facility**: Photo copy

12. **Online / Digital resources**: Surfing

13. **Creativity**: Phenomenon whereby a person creates something new

14. **Response from Management**: Reaction to issues / concerns raised by students.

15. **Guest Lectures**: Lectures delivered by special guests

16. **Industrial Visits**: Visiting companies and get insight of on the internal working environment of the company

17. **Admission process**: Process followed to intake the students

18. **Assessment system**: Evaluation process

19. **Examination system**: Method to assess the students

20. **Field assignments**: Assignment based on field work

21. **Choice of specialization**: Course on area of interest

22. **Entrepreneurial skills**: Developing skill to start on own

23. **Clubs / Forums**: Place for discussion
24. **Scholarships**: Award of financial aid for a student to further their education

25. **Counselling**: Providing academic, career, college access, and personal/social competencies

26. **Alumni Interaction**: Meeting with passed out students of the institution

27. **Social & Environmental Sensitivity**: Networking with external environment

28. **Sports/Recreation**: All forms of competitive physical activity which through casual or organized participation

29. **Residential Accommodation**: Loading facility

30. **Value Added Courses**: Course out of regular syllabus

**III.6 RESEARCH QUESTIONS AND HYPOTHESES**

**III.6.1 Research Questions**

RQ1: Do intangible service factors have an effect on students’ perceived satisfaction with intangibles?

RQ2: Do tangible service factors have an effect on students’ perceived satisfaction with tangibles?

RQ3: Do training and activities in multiple domains have an effect on students’ perception satisfaction with Learning & Development?

RQ4: Does students’ perceived satisfaction with intangibles have an effect on service quality of institution?

RQ5: Does students’ perceived satisfaction with tangibles have an effect on service quality of institution?
RQ6: Does students’ perceived satisfaction with Learning & Development have an effect on service quality of institution?

RQ7: Do demographic variables have an impact on service quality of institution?

III.6.2 Research Hypotheses

Hypotheses from service quality research model were:

H_{01a}: Reliability has no effect on students’ perceived satisfaction with intangibles.

H_{01b}: Responsiveness has no effect on students’ perceived satisfaction with intangibles.

H_{01c}: Assurance has no effect on students’ perceived satisfaction with intangibles.

H_{01d}: Empathy has no effect on students’ perceived satisfaction with intangibles.

H_{02a}: Space and utilities has no effect on students’ perceived satisfaction with tangibles.

H_{02b}: Ambience has no effect on students’ perceived satisfaction with tangibles.

H_{03a}: Training has no effect on students’ perceived satisfaction with Learning & Development.

H_{03b}: Activities in multiple domains has no effect on students’ perceived satisfaction with Learning & Development.

H_{04}: Perceived satisfaction with intangibles has no effect on students’ perceived satisfaction with service quality of institution.
Figure 3.1

Conceptual Framework

Source: Compiled by researcher.
H_{05}: Perceived satisfaction with tangibles has no effect on students’ perceived satisfaction with service quality of institution.

H_{06}: Perceived satisfaction with Learning & Development has no effect on students’ perceived satisfaction with service quality of institution.

Other Hypotheses were:

H_{07}: There is no significant difference between male and female students with respect to perception about service quality of institution.

H_{08}: There is no significant difference between BBA and MBA students with respect to perception about service quality of institution.

H_{09}: There is no association between category of institution and students’ perception about service quality of institution.

H_{10}: There is no association between current semester and students’ perception about service quality of institution.

H_{11}: There is no significant difference between male and female faculty with respect to perception about service quality of institution.

H_{12}: There is no association between faculty designation and perception about service quality of institution.
H13: There is no association between faculty’s academic work experience and perception about service quality of institution.

H14: There is no significant difference between faculty’s mean ranks towards reliability dimension of service quality of management education institution.

H15: There is no significant difference between faculty’s mean ranks towards responsiveness dimension of service quality of management education institution.

H16: There is no significant difference between faculty’s mean ranks towards assurance dimension of service quality of management education institution.

H17: There is no significant difference between faculty’s mean ranks towards empathy dimension of service quality of management education institution.

H18: There is no significant difference between mean faculty’s ranks towards ambience dimension of service quality of management education institution.

H19: There is no significant difference between faculty’s mean ranks towards space and utilities dimension of service quality of management education institution.

H20: There is no significant difference between faculty’s mean ranks towards activities in multiple domains dimension of service quality of management education institution.

III.7 VALIDITY

Content Validity: Dimensions of service quality are same for surveys involving faculty and students. However the variables impacting service quality of management education institution differ keeping in mind the background of respondents (faculty and students). The variables
chosen have been sourced from literature wherein the validity of using such variables has already been demonstrated.

*Construct validity:* Construct validity is how well the items on the inventory represent the variable. The SERVPERF variables have been well established in literature. Thus there is widespread acceptance of using the 5 SERVPERF dimensions, namely, reliability, responsiveness, assurance, empathy and tangibles. Many research studies have also used the modified versions of SERVPERF and SERVQUAL.

### III.8 RELIABILITY

*Cronbach Alpha Reliability Test:* Reliability (*Malhotra, 2006*) refers to the extent to which a scale produces consistent results if repeated measurements are made. The coefficient alpha, or Cronbach alpha, is the average of all possible spilt-half coefficients resulting from different ways of splitting the scale items. This coefficient varies from 0 to 1, and a value of 0.7 or less generally indicates unsatisfactory internal consistency reliability as espoused by *Nunnally (1978).* The reliability coefficient (cronbach alpha) was found to be 0.889 for faculty survey comprising 30 items and 0.826 for student survey comprising 30 items. Both the alpha values were more than the minimum acceptable value of 0.7.

### III.9 LIMITATIONS OF RESEARCH

The limitations of the research were: (a) the study is focused on service quality of institution only and other dynamics of service marketing and management are not under its purview, (b) There may be changes in the service sector / education sector environments in the future which in turn may influence changes in service quality levels, expectations and perceptions.