CHAPTER-IV
RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

For any research study, research methodology forms a vital part of the research. The successful completion of any research work is dependent on the right selection of research methods and techniques to collect all necessary facts, figures and data. As the present study is descriptive and analytical in nature, the researcher has to rely on the field survey technique as well as on published reports, records, journals, periodicals, newspapers and magazines. The present study is concerned with the constructs i.e. internal marketing, faculty job satisfaction and student satisfaction in the education sector. In the present study, every possible attempt has been made to acquire data from both primary and secondary sources. The chapter discusses the methodology undertaken with a focus on objectives of the study, hypotheses development, questionnaire development, sampling process and data collection administration. Moreover, determination of sample size, pre-testing and the various statistical technique used to test the hypotheses formulated in the study have also been summarized in detail. The previous chapter has disclosed the research gap and problem in the area of internal marketing (IM) by an extensive review of the literature, so this chapter aims at developing the theoretical platform, which assists in plugging that gap.

4.2 RESEARCH PURPOSE

The research work has been undertaken with an aim to make an in-depth analysis to study the relationship of internal marketing practices with faculty job satisfaction. It also aims to investigate the relationship of faculty job satisfaction with student satisfaction. Furthermore, present study outlines the various internal marketing practices prevalent in select management institutions; and suggests an appropriate model and strategies of IM to management education institutions.

The competition in higher education institutions has become more than ever. To compete with the competition, the institutions need to satisfy their customer/students
Customer satisfaction can be attained if the employees of the organisation are satisfied (Kotler, 2000; Pitt, Bruwer, Nel, & Berthon, 1999; Schultz, 2002). Education institutes have the students as their external customer. The teachers are the employees of the institutes that provide services to the students. Satisfied internal customers/teachers can better serve external customers/students if attention is paid primarily to the teachers, their needs, attitudes and values (Logaj & Trnavcevic, 2006). Keller (2002) points out that ‘if management wants its lecturers to do a great job with customers, then, it must be prepared to do a great job with its lecturers” (p.651). He emphasized on the internal marketing mix to satisfy internal customer’s needs. His emphasis is laid on the strategies and techniques which can be used in order to satisfy the lecturer’s needs. In addition to this, Chang and Chang (2007) stated that an employee’s satisfaction is the main purpose of implementing internal marketing. Whereas the country’s all-around success is largely due to its educated workforce for which education institutions deserve immense credit (Jain & Bandyopadhyay, 2001). Surprisingly, the service sector has generally been left out by researchers from the marketing field (Siddiqi & Saharf, 2007). Due to this lack of past studies in higher education, the present study has proposed to explore the relationship between internal marketing, faculty job satisfaction and student satisfaction. Apart from this, although, some related research has examined the relationship between internal marketing and faculty job satisfaction (Altarifi, 2014) and the relationship between faculty job satisfaction and student satisfaction (Agrawal & Nagar, 2013; Shetty & Gujarathi, 2012) but these studies have not studied all the three constructs together.

So, in light of the above conclusions, it is imperative for educational institutions to carry out internal marketing practices with an aim to satisfy faculty, which in turn leads to satisfaction among students. The present study is intended to establish the above-mentioned relationships in select management education institutions in the higher education sector in India.

4.3 OBJECTIVES OF THE STUDY

1. To study the existing internal marketing practices in management education institutions.
2. To study the relationship between internal marketing dimensions and faculty job satisfaction.

3. To study the relationship between faculty job satisfaction and student satisfaction.

4. To suggest and recommend the effective internal marketing strategies for management to enhance its faculty and student satisfaction.

5. To suggest an appropriate internal marketing model for management education institutions to enhance faculty job satisfaction and student satisfaction.

4.4 HYPOTHESES OF THE STUDY

H$_1$: There is a significant relationship between internal marketing dimensions and faculty job satisfaction in management education institutions.

H$_2$: There is a significant relationship between faculty job satisfaction and student satisfaction.

4.5 SCOPE OF THE STUDY

The present study is descriptive in nature and has been carried out in the higher education sector in India. According to the latest report of All India Survey on Higher Education (2016-17), released by Minister of Human Resource Development (India), Chandigarh has the highest Gross Enrolment Ratio (GER) i.e. 56.1 in higher education among all states and union territories in India, later followed by Delhi (45.3), Himachal Pradesh (HP) (36.7), Haryana (29), Punjab (28.6) and Jammu and Kashmir (J&K) (25.6) among North Indian states. Consequently, the greater enrolment will lead to increase in number of faculty in respective institutes. Keeping in view this aspect of GER, these regions were further analyzed and targeted during the pilot study, particularly the management institutions. Overall, three cities named: Delhi, Chandigarh and Jammu were finally targeted for data collection as faculty and students stated that they prefer to work and get enrolled in the institutions located in these major cities when asked about their preferences for education and job location.
Furthermore, management education has become a major profession that attracts considerable attention across the world. In India, higher education especially management education is witnessing an exponential growth in terms of a number of institutes imparting management education which are usually termed as Business School (Kumar & Dash, 2011). According to the final report of All India Survey on Higher Education (2016-17) enrolment in M.B.A programme has increased from 392587 in 2012-13 to 416490 in 2016-17 and in BBA programme from 292838 in 20012-13 to 383827 in 20016-17. In addition to this, based on the previous literature review, it has also been found that there exists no study in management education institutions showing the relationship between internal marketing, faculty job satisfaction and student satisfaction. So, the present scope of the study attempts to take into account management education institutions from Northern India. All management educational institutions from Jammu region are included in the study. From Delhi and Chandigarh, top 10 management education institutions according to the rating of various business magazines like Business today and Careers 360 in 2016-17 were listed down and were contacted through emails and telephonically for getting permission for data collection. Many of them denied to permission for data collection as per that is against their institutional policy and also because of the busy work schedule of their faculty. So, the institutions that permitted to collect the data and further targeted for data collection for the study were listed down.

**Name of the Institutes**

**Jammu**

The Business School (University of Jammu)  
School of Hospitality and Tourism Management (University of Jammu)  
ICCR and HRM (University of Jammu)  
School of Business Studies (Central University of Jammu)  
Institute of Management Sciences  
Model Institute of Engineering and Technology

**Delhi**

Faculty of Management Studies (University of Delhi)
Based on the research gap, the study examines the relationship of five internal marketing practices namely Vision, Academic Staff Development, Internal Communication, Rewards and Empowerment on Faculty Job Satisfaction. Further, the relationship of Faculty Job Satisfaction and Student Satisfaction shown in Figure 4.1 below:

**Figure 4.1: Proposed Theoretical Framework of the Study**
4.7 RESEARCH DESIGN AND METHODOLOGY

A research design is basically a conceptual structure within which a research is conducted. Parahoo (1997) described the research design as a process that helps in planning how, when and from where the information has to be collected and analysed. A research design can be described as a plan which starts with the formulation of definite and unambiguous research objectives, organized methods of data collection, the clear choice of the population and samples to be studied and well thought out techniques for analyzing the collected data.

In this study, the exploratory, as well as descriptive research designs, were used as the Internal Marketing phenomenon is new to the management education institutions in India. As a result, these studies focus on identifying key issues and involve an exhaustive literature search. These are simply used to scrutinize a new field of study and the researcher is able to take a broader picture of the phenomena and can further plan on a much more deeper and focused research. On the other hand, Descriptive Research studies use the groundwork laid by the exploratory studies and therefore delves directly into an in-depth and accurate study of various dimensions and variables involved in a particular field of study, or a phenomenon under study. As per Glass and Hopkins (1984), descriptive study is a process of collecting data to provide information regarding the events and then systematically organize and tabulate this data for the further understanding of the event. Thus, based on the above discussion, both exploratory and descriptive research designs can be considered appropriate for the present study. It was important to gauge the various factors of internal marketing on faculty satisfaction in the management institutes and further assess the faculty satisfaction on student satisfaction.

This is a three-phased study, where the first phase is based on qualitative analysis and the other two phases are based on quantitative analysis.

This section explains the overall methodology used to collect the data to address the research objectives of this three-phase study. It starts with the selection and justification of the three-phased approaches of the study. Further, it provides information about the sample population for each of the phase. Lastly, it describes the instruments,
the data collection processes and the type of analyses carried out in each phase of the study.

**Justification of the Three-Phased Approach**

*Phase one* involved a semi-structured interview with faculty members of management institutes operating in Jammu. This qualitative approach has been employed with the objective to explore the various practices of the IM along with the meaning of internal marketing within select management institutes. Further, this set of data enabled the researcher to identify the various internal marketing practices effective in management institutes and to design a more effective instrument for phase two.

*Phase two* involved the development of the questionnaire for internal marketing, faculty job satisfaction and student satisfaction constructs. This quantitative approach has been employed for item analysis (through descriptive statistics) and to explore the factors of the various constructs of this study using EFA.

*Phase three* involved assessing the validity and reliability of the developed scales that emerged after EFA.

The three stages of the study have deemed necessary to best address the three research questions i.e. what is Internal Marketing, Internal Marketing in the education sector and what are the practices of IM in management education. Each phase of the study extracted essential data to assist and contribute to improvement in the developed instrument for the subsequent phase. This study aimed at filling the gap in the extant literature by providing valid IM practices for management institutions.

The objective of the present study is to examine the IM practices in management institutions and the relationship of it with faculty job satisfaction; and further the relationship of faculty job satisfaction with student satisfaction.

**4.8 SOURCES OF DATA COLLECTION**

The data for the present study was collected from the sources, primary as well as the secondary source.
The primary data is the data which is collected for the first time and has not been used before while secondary data are those which have been collected by others before and have already passed through the statistical process. For this research, the primary data was collected from faculty members of the chosen management institutes and the students enrolled in these institutes.

Secondary data were obtained from various research papers, articles, books, doctoral thesis, dissertations, annual reports, magazines etc. The information has also been obtained from various websites related to the study.

Research Instrument to collect data in this research is Questionnaire. The field data were collected through two questionnaires – The first was addressed to faculty members of the selected institutes and the second was addressed to the students enrolled in these institutions respectively.

4.9 INSTRUMENT DESIGN AND DEVELOPMENT

The study is aimed at establishing the interrelationships of three constructs in management education institutions in India. These constructs include- internal marketing, faculty job satisfaction and student satisfaction. The questionnaire uses both self-designed and standardised scales of the select constructs already used in the related studies to increase the reliability and validity. The below mention paragraphs summarise the design, sources of items/scales used in the study.

4.9.1 Internal Marketing and Faculty Job Satisfaction Questionnaire

This questionnaire comprised of three sections. The section A of the questionnaire was concerned about the profile of the faculty where the faculty was asked about gender, age, job title, educational qualification, and work experience. Section B comprises of questions pertaining to the five main dimensions of internal marketing and section C consists of questions related to faculty job satisfaction. The questionnaire consisted of a total of 47 items. The self-designed scale of internal marketing construct consists of 27 items and standardised scale of faculty job satisfaction construct consists of 20 items. The responses of the faculty members were measured by using the five-point Likert scale
ranging from ‘1=Strongly Disagree’ to ‘5=Strongly Agree’. All the questions were based on dimensions and variables identified during an extensive literature survey.

**Internal Marketing (IM) measurement** - IM is measured using 5 dimensions scale. The 3-dimensions of IM i.e. 'Vision', 'Academic Staff Development' and 'Rewards' were measured using a 15-item scale developed by Foreman and Money (1995). Fourth dimension i.e. ‘Internal Communication’ was measured using 8-items, taken from the study of Johlke and Duhan (2001), Gounaris (2008), and Altarifi (2014). The fifth dimension of IM i.e. ‘Empowerment’ was measured using 4-items from the study of Hartline and Ferrell (1996).

**Faculty Job Satisfaction (FJS) measurement** – 20-items short form (1-item per facet) of Minnesota Satisfaction Questionnaire (MSQ) developed by Weiss, Dawis, England, and Lofquist (1967) was used to measure the faculty job satisfaction, specifically intrinsic, extrinsic and general satisfaction.

4.9.2 **Student Satisfaction Questionnaire**

The questionnaire comprised of two sections. The section A of the questionnaire was concerned about the profile of the students, where students were asked about their gender, age and course they were enrolled in. Section B comprises of questions pertaining to factors of student satisfaction. The responses of the students were measured by using the five-point Likert scale ranging from ‘1=Strongly Disagree’ to ‘5=strongly.

**Student Satisfaction (SS) measurement** – Student satisfaction is measured using a self-designed 26-item scale with the help of research papers namely, DeShields, Kara, and Kaynak (2005); Hasan, Ilias, Rahman, and Razak (2009); Kayastha (2011); Maddox and Nicholson (2008); Mehdipour and Zerehkafi (2013); Shevlin, Banyard, Davies, and Griffiths (2000); and Sinclaire (2014).

4.10 **PURIFICATION OF SCALE ITEMS-CONTENT VALIDITY**

The majority of the constructs of this study have been self-designed, so the draft questionnaires for both respondents (i.e. faculty and students) have been prepared and discussed with research guide, 5 faculty members and 10 students respectively to
determine the relevance and quality of the items. On the basis of suggestions of the guide, faculty members and students, the language of both the questionnaires have been changed to make it simple and understandable. Further, four items from internal marketing construct and five items from student satisfaction construct have been deleted due to their inappropriateness or repetitiveness. Finally, the refined questionnaire has been prepared according to the changes suggested by a guide, faculty members and students in the draft questionnaires.

4.11 PILOT STUDY

The questionnaire prepared for collecting data from the faculty members and students was pretested by taking the basic relevant response from 60 faculty and 200 students from the management institutes in Jammu (Jammu & Kashmir, India). The respondents were required to indicate on a scale of 5 to 1 the degree to which they agree or disagree with the statements. The result of the pilot study further suggested minor changes in the language of a couple of questions and subsequently, they were modified for final data collection. The results of the reliability analysis established the internal consistency of the scale used for the study. The correlation analysis, regression analysis and the statistical significance gave the desired results to continue with the main study.

4.12 FINAL STUDY

4.12.1 Population of the Study

Total population of faculty and students came out to be 398 and 8026 respectively. The detail representation is given in Table 4.1 below.
Table 4.1: Management Educational Institutes Statistics

<table>
<thead>
<tr>
<th>Management Educational Institutes Statistics (Session 2016-2017)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Institute</td>
</tr>
<tr>
<td><strong>Jammu</strong></td>
</tr>
<tr>
<td>The Business School</td>
</tr>
<tr>
<td>School of Hospitality and Tourism Management</td>
</tr>
<tr>
<td>International Centre for Cross Cultural Research and Human Resource Management</td>
</tr>
<tr>
<td>School of Business Studies(Central University)</td>
</tr>
<tr>
<td>Institute of Management Sciences</td>
</tr>
<tr>
<td>Model Institute of Engineering and Technology</td>
</tr>
<tr>
<td><strong>Delhi</strong></td>
</tr>
<tr>
<td>Faculty of Management Studies</td>
</tr>
<tr>
<td>Lal Bahadur Shastri Institute of Management</td>
</tr>
<tr>
<td>Bharati Vidyapeeth Institute of Management and Research</td>
</tr>
<tr>
<td>Jagan Institute of Management Studies</td>
</tr>
<tr>
<td>Jagannath International Management School</td>
</tr>
<tr>
<td><strong>Chandigarh</strong></td>
</tr>
<tr>
<td>University Business School</td>
</tr>
<tr>
<td>University Institute of Applied Management Sciences</td>
</tr>
<tr>
<td>University Institute of Hotel and Tourism Management</td>
</tr>
<tr>
<td>Chitkara Business School</td>
</tr>
<tr>
<td>Chandigarh Business School of Administration</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
4.12.2 Sampling Method

Stratified random sampling, a form of probability sampling method has been used to collect data from the respondents. In stratified random sampling, the population is divided into different strata and from these strata randomly sample has been drawn. So, for the purpose of sampling, each institute is taken as a stratum for the study. Subsequently, proportionate stratified random sampling technique was employed to avoid under-sampling or over-sampling of any sub-group and to ensure that the size of the sample in each stratum is proportionate to the population size of the stratum when viewed against the entire population. Thereafter, the random sampling method has been applied to draw a sample from each stratum.

The selection of stratified random sampling for the present study is on the following grounds. Firstly, this method makes possible in attaining a sample from a population, that more likely represents the entire population and to be selected by ensuring no underrepresented or overrepresented of the segment. Secondly, this method minimizes discrepancy and thus increases the accuracy of the survey estimates (Cox, Mage, & Immerman, 1988). Thirdly, the method guarantees the best possible results with less amount of sampling error. Lastly, the same method has been used in the study of Siddiqi and Sahaf (2007), and Yusoff, Mcleay and Woodruffe-Burton (2015) to collect data from faculty members and business students respectively.

4.12.3 Sample Size Determination

The present study was conducted among the faculty members and students of selected management institutions. The total population of the faculty is 398. Below mentioned formulas are used to calculate sample size for the study.

Following is the sample size formula proposed by Krejcie and Morgan (1970), the sample size at 95% confidence level and 5% margin of error, has been calculated as:

\[
S = \frac{X^2 \cdot NP (1-P)}{d^2 (N-1) + X^2 \cdot P (1-P)}
\]
Where,

\( S \) = required sample size

\( N \) = the given population size.

\( X^2 \) = the table value at 95% level of confidence for degree of freedom equal to one

i.e. 3.841

\( P \) = Population proportion (assumed to be 0.50).

\( d^2 \) = Proportion of degree of accuracy i.e. \((0.05)^2\).

Substituting the values in the above formula:

\[
S = \frac{3.841 \times 398 \times 0.50 (1-0.50)}{(0.05)^2 (398-1) + 3.841 \times 0.50 (1-0.50)}
\]

\( S = 195.71 \)

\( S = 196 \)

Thus, as per Krejcie and Morgan (1970) formulae, the minimum required sample size from faculty for the present study is 196.

In addition, an alternative simplified formula to calculate sample sizes suggested by Yamane (1967) has been applied at a 95% confidence level and margin of error = 0.05 is assumed for the equation below:

\[
n = \frac{N}{1 + N (e)^2}
\]

Where,

\( n \) = required sample size

\( N \) = given population size, and

\( e \) = margin of error.

Substituting the values in the above formula:

\[
n = \frac{398}{1 + 398 (0.05)^2}
\]

\( n = 199.49 \)

\( n = 200 \)
The Yamane's formula yields the minimum of 200 required sample size from faculty for the present study.

The total population of the students is 8026. By substituting the values in the Krejcie and Morgan (1970) formula, the sample size for students came out to be 367 at 95% confidence level and 5% margin of error as shown below:

\[
S = \frac{X^2 NP (1-P)}{d^2 (N-1) + X^2 P (1-P)}
\]

\[
S = \frac{3.841\times8026\times0.50(1-0.50)}{(0.05)^2 (8026-1) + 3.841\times0.50 (1-0.50)}
\]

\[
S = 366.601
\]

\[
S=367
\]

In addition to this, according to Yamane (1967) formula at 95% confidence level and margin of error=0.05, the minimum required sample size form the students came out to be 381 as shown below:

\[
n = \frac{N}{1 + N (e)^2}
\]

\[
n = \frac{8026}{1 + 8026 (0.05)^2}
\]

\[
n=381.01
\]

\[
n=381
\]

Moreover, it is recommended that every item minimum requires 5 respondents (Hair, Sarstedt, Ringle, & Mena, 2012) to confirm the appropriateness of the sample size. In addition to this, according to Kline (2005), the sample size should be at least five times bigger than the investigated variable number and should be at least 200 in total. So, the optimal ratio approach of 5 observations for each item has also been considered. Appropriateness of the above-calculated sample size also stands confirmed for using
techniques like multiple regression and factor analysis (Barlett, Kotrlik, & Higgins, 2001).

Finally, 200 of sample size for faculty and 381 of sample size for students is decided for the study on the basis of the above-mentioned calculation and recommendation.

Proportionate distribution of the faculty among selected institutes has been performed, the process of which is shown in Table 4.2 below.

Proportionate = Sample Size/Population Size × Stratum Size

**Table 4.2: Proportionate Distribution of the Sample Size (Faculty)**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Faculty</th>
<th>Relative Percentage of Faculty (%)</th>
<th>Required Sample Size</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jammu</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Business School</td>
<td>14</td>
<td>(14/398)x100 =3.51</td>
<td>(200x3.51)/100 =7.02</td>
<td>7</td>
</tr>
<tr>
<td>School of Hospitality and Tourism Management</td>
<td>7</td>
<td>(7/398)x100 =1.75</td>
<td>(200x1.75)/100 =3.50</td>
<td>4</td>
</tr>
<tr>
<td>International Centre for Cross Cultural Research and Human Resource Management</td>
<td>7</td>
<td>(7/398)x100 =1.75</td>
<td>(200x1.75)/100 =3.50</td>
<td>4</td>
</tr>
<tr>
<td>School of Business Studies(Central University)</td>
<td>18</td>
<td>(18/398)x100 =4.52</td>
<td>(200x4.52)/100 =9.04</td>
<td>9</td>
</tr>
<tr>
<td>Institute of Management Sciences</td>
<td>10</td>
<td>(10/398)x100 =2.51</td>
<td>(200x2.51)/100 =5.02</td>
<td>5</td>
</tr>
<tr>
<td>Model Institute of Engineering and Technology</td>
<td>10</td>
<td>(10/398)x100 =2.51</td>
<td>(200x2.51)/100 =5.02</td>
<td>5</td>
</tr>
<tr>
<td><strong>Delhi</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty of Management Studies</td>
<td>24</td>
<td>(24/398)x100 =6.03</td>
<td>(200x6.03)/100 =12.06</td>
<td>12</td>
</tr>
</tbody>
</table>
Proportionate distribution of the students among selected institutes has been performed, the process of which is shown in Table 4.3 below.

**Table 4.3: Proportionate Distribution of the Sample Size (Students)**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Students</th>
<th>Relative Percentage of Students (%)</th>
<th>Required Sample Size</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Jammu</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Business School</td>
<td>190</td>
<td>(190/8026)×100 = 2.4</td>
<td>(381×2.4)/100 = 9.14</td>
<td>9</td>
</tr>
<tr>
<td>School of Hospitality and Tourism Management</td>
<td>170</td>
<td>(170/8026)×100 = 2.1</td>
<td>(381×2.1)/100 = 8</td>
<td>8</td>
</tr>
<tr>
<td><strong>Chandigarh</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University Business School</td>
<td>25</td>
<td>(25/398)×100 = 6.28</td>
<td>(200×6.28)/100 = 12.56</td>
<td>13</td>
</tr>
<tr>
<td>University Institute of Applied Management Sciences</td>
<td>18</td>
<td>(18/398)×100 = 4.52</td>
<td>(200×4.52)/100 = 9.04</td>
<td>9</td>
</tr>
<tr>
<td>University Institute of Hotel and Tourism Management</td>
<td>13</td>
<td>(13/398)×100 = 3.26</td>
<td>(200×3.26)/100 = 6.52</td>
<td>6</td>
</tr>
<tr>
<td>Chitkara Business School</td>
<td>30</td>
<td>(30/398)×100 = 7.53</td>
<td>(200×7.53)/100 = 15.06</td>
<td>15</td>
</tr>
<tr>
<td>Chandigarh Business School of Administration</td>
<td>42</td>
<td>(42/398)×100 = 10.55</td>
<td>(200×10.55)/100 = 21.10</td>
<td>21</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>398</td>
<td>100</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td>Students</td>
<td>Percentage</td>
<td>Rank</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------------</td>
<td>----------</td>
<td>------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>Tourism Management</td>
<td>105</td>
<td>1.3%</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>International Centre for Cross Cultural Research and Human Resource Management</td>
<td>625</td>
<td>7.8%</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>School of Business Studies (Central University)</td>
<td>260</td>
<td>3.2%</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Institute of Management Sciences</td>
<td>120</td>
<td>1.5%</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Model Institute of Engineering and Technology</td>
<td>120</td>
<td>1.5%</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Delhi**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Students</th>
<th>Percentage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty of Management Studies</td>
<td>400</td>
<td>5.0%</td>
<td>19</td>
</tr>
<tr>
<td>Lal Bahadur Shastri Institute of Management</td>
<td>480</td>
<td>6.0%</td>
<td>23</td>
</tr>
<tr>
<td>Bharati Vidyapeeth Institute of Management and Research</td>
<td>1440</td>
<td>17.9%</td>
<td>68</td>
</tr>
<tr>
<td>Jagan Institute of Management Studies</td>
<td>960</td>
<td>12.0%</td>
<td>46</td>
</tr>
<tr>
<td>Jagannath International Management School</td>
<td>360</td>
<td>4.5%</td>
<td>17</td>
</tr>
</tbody>
</table>

**Chandigarh**

<table>
<thead>
<tr>
<th>Institution</th>
<th>Students</th>
<th>Percentage</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Business School</td>
<td>296</td>
<td>3.7%</td>
<td>14</td>
</tr>
<tr>
<td>University Institute of Applied Management Sciences</td>
<td>400</td>
<td>5.0%</td>
<td>19</td>
</tr>
<tr>
<td>University Institute of Hotel and Tourism Management</td>
<td>360</td>
<td>4.5%</td>
<td>17</td>
</tr>
<tr>
<td>Chitkara Business School</td>
<td>1180</td>
<td>14.7%</td>
<td>56</td>
</tr>
<tr>
<td>Chandigarh Business School of Administration</td>
<td>680</td>
<td>8.4%</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>8026</td>
<td>100%</td>
<td>381</td>
</tr>
</tbody>
</table>
4.12.4 Distribution of Questionnaires

The researcher has approached directly to the faculty after getting the permission from the selected institutes and handed over the hard copy of questionnaire personally to them. Many of the faculty members asked to email the soft copy of the questionnaire to them. So, the questionnaire in the Google forms was dropped in their respective email ids. For students, the hard copy of the questionnaire was distributed to them during classes. Considerably, much care has been taken to collect the information from the respondents. Apart from this, the questionnaires were cross-checked whether all the information concerning different sections is properly filled or not.

4.12.5 Adequacy of Survey Response

As discussed above, the required sample size for the final study is 200 from faculty and 381 from students, but for the purpose of the main study a total of 300 questionnaires among faculty and 450 among students were randomly distributed, out of which 226 from faculty and 421 from students were returned back having response rate of 75.33% and 93.55% respectively. After the screening of incomplete responses and outliers in the dataset, a total of 206 responses from faculty and 370 from students were found usable for further analysis. The reason for distribution more questionnaires than the required sample size is done to ensure that the sufficient number of properly completed questionnaires are received (Boer, Delnoij, & Rademakers, 2011; Gumanga & Kwame-Aryee, 2012; Isguven, Yoruk, & Cizmecioglu, 2015) after cushioning for the rejection of outliers (Gopalakrishnan, Muncherji, & Dhar, 2009).

4.12.6 Appropriateness of Sample for SEM Analysis

The standard and sophisticated statistical analysis including structural equation modeling recommend a sampling of 200 as fair, and 300 as good (Tabachnick & Fidell, 1996). But usually, N = 100–150 is considered the minimum sample size for conducting SEM (Tinsley & Tinsley, 1987; Anderson & Gerbing, 1988; Ding, Velicer, & Harlow, 1995; Tabachnick & Fidell, 2001). In addition to this, the sample size of a minimum of 200 observations is appropriate for conducting structural equation modeling analysis (Kelloway, 1998; Hair, Anderson, Tatham & Black, 1998; Kline, 2005; Weston & Gore,
2006; Hair, Black, Babin, Anderson, & Tatham, 2006). Also, Cliff (1987) recommends a sample size of 150 for 40 variables (item statements) on a scale. Furthermore, Pallant (2005) suggested that for structural equation modelling using AMOS, sample size should be at least five times the number of indicators. Hair, Anderson, Babin, & Black (2010) suggests that the minimum sample size is 100 when considering models containing five or fewer constructs, each with more than three items with high item communalities (0.6 or higher); 150 when models contain seven or fewer constructs and modest communalities (0.5); 300 when models contain seven or fewer constructs and low communalities (0.45), and/or multiple under identified (fewer than three items) constructs; and 500 when models contain a large number of constructs, some with lower communalities, and/or having fewer than three measured items. It is generally regarded that 100 is the practical minimum size for using SEM (Hair et al., 2010).

So, from the above suggestions provided it is considered that sample size of 206 and 370 is sufficient enough for conducting SEM analysis in AMOS.

4.12.7 Ethical Considerations

A strict code of ethics was followed in collecting data from selected institutes. Creswell (2009) argue that ethical considerations must be an integral aspect of any particular study. Dependable ethical principles were observed in the course of conducting the research. Saunders, Lewis, & Thornhill (2009) add that gaining permission and consent to collect data is a very important aspect of any study. All data collection instruments were therefore made to contain an informed consent form. Prior to data collection, however, emails were dropped to the selected institutes for their approval for data collection. Further, a student ID card and a request letter duly signed by the head of the department and research supervisor for data collection were submitted to the institutes at the time of data collection. In addition to this, personal data pertaining to any of the respondents were not collected.
DATA SCREENING AND STATISTICAL ANALYSIS TECHNIQUES USED IN THE STUDY

The data so collected was entered into an SPSS 21 data sheet and was checked twice by the researcher to eliminate any data entry errors. Several data analyses techniques have been used to analyse data to bring out precise results. Initially, the study has used descriptive statistics to provide the detail description of the sample. Further, Exploratory Factor Analysis (EFA) and Scree test to identify the various factors pertaining to internal marketing, faculty job satisfaction and student satisfaction constructs. In the later stage, Confirmatory Factor Analysis (CFA) has been applied for developing a measurement model and Structural Equation Management (SEM) has been used for developing a structural model. The tools used for data analyses are discussed as under:

4.13.1 Descriptive Statistics

Descriptive statistics i.e. means, standard deviations, percentages, skewness and kurtosis have calculated to provide basic information about the scales used in the study and to provide a description of the sample (Kline, 2005). Mean is used to know the exact value of each observation (Tull & Hawkins, 1993). The mean is quoted along with standard deviation. The mean describes the central location of the data and standard deviation describes the spread of the same from the central location. The standard deviation is applied to find the amount of variation in the responses. Percentages have been applied to examine the demographics, response rate and institute-wise distribution of respondents in the research areas under study. Further, the normality of the data has been checked to examine the shape of the data distribution for a variable and its association to the normal distribution (Hair, Black, Babin, & Anderson, 2009). It is examined through the coefficients of skewness and kurtosis. The threshold values of coefficients of skewness and kurtosis are -1 to +1 for skewness and -2.2 to +2.2 for kurtosis as suggested by Sposito, Hand, & Skarpness (1983).
4.13.2 Outliers

Outliers are the observations that deviate noticeably from the majority of the data, which appear to be isolated and inconsistent with the rest of the data set. A visual inspection of SPSS Box Plots has been used to identify extreme outliers for each of the individual items. It is a type of graph used to show the shape of the distribution, any data which lies beyond the extreme values are treated as outliers.

4.13.3 Exploratory Factor Analysis

Exploratory factor analysis (EFA) is a class of procedures primarily used for data reduction and summarisation by considering key statistics such as KMO, Bartlett's test of sphericity, commonalities, Eigen values, factor loadings, scree test and percentage of variance explained (Malhotra, 2008). First of all, Kaiser-Meyer-Olkin (KMO) value is applied to determine the relevance of data for applying factor analysis. The value of KMO statistic lies between 0 and 1. According to Kaiser (1974), the sample is considered adequate if the value of KMO is greater than 0.5, while the values between 0.7 to 0.8 are considered good and values above 0.8 are considered very good. Besides this, another important measure to check sample adequacy is the Anti-image correlations matrix calculated by SPSS software. All the items on the diagonal of this matrix should be greater than 0.5 (Field, 2005). Bartlett test of sphericity (BTS), a statistical technique, is used to assess the presence of correlation among the variables (Hair et al., 2009). The significant value specifies that the data is not zero identity matrix and suitable for applying EFA. Further, for factor identification under EFA as is done on the basis of factor loadings (FL), Eigen value (EV) and communality value (CV) in the study. Hair et al. (2009) suggested that factor loadings greater than ±0.30 are considered to meet the minimal level, loadings of ±0.40 are considered more important, and if the loadings are ±0.50 or greater, they are considered practically significant. The study adopted a factor loading value of greater than 0.50 to retain the correlated variables. Eigen value denotes the total amount of variance explained by each factor is executed to decide the number of factors. The values ≥ to 1 is considered so that each of the factors accounts for at least as much variance as one of the original variables. Communality value (greater than 0.50) is examined to find out the extent to which the variables are explained by the factors. The
study applies principal component analysis with varimax rotation. The principal component analysis is implemented as the focus of the study is to determine the minimum number of factors that account for maximum variance. Further, varimax rotation, the most popular orthogonal method, which enhances the interpretability of the factors by reducing the number of variables with high loading on a factor has been used (Hair et al., 2009; Malhotra & Dash, 2010). The items which were loading inappropriately are deleted and the analysis is further repeated, until a clear pattern matrix that explains a high percentage of total item variance is obtained (Ford, MacCallum, and Tait, 1986; Kim & Mueller, 1978). The factor analysis has been performed for the dimension reduction of various constructs in the study namely; internal marketing, faculty job satisfaction and student satisfaction. In total, 4 factors of internal marketing, 3 factors of faculty job satisfaction and 5 factors of student satisfaction were extracted.

4.13.4 Scree Test

The most common approach to determining the number of factors to retain in exploratory factor analysis is the scree test (Hoyle & Duvall, 2004). Therefore, the determination of a number of factors has been done on the basis of the Scree plot. According to Malhotra (2008) Scree test is a plot of the Eigen values against the number of factors in order of extraction. The shape of the plot is used to determine the number of factors. Typically, the plot has a distinct break between the steep slope of factors, with large Eigen values and a gradual trailing off associated with the rest of the factors. This gradual trailing off is referred as the Scree. Experimental evidence indicates that the point at which the Scree begins denotes the true number of factors.

4.13.5 Correlation Analysis

The correlation analysis is the statistical tool used to measure the closeness of the relationship between two or more variables. It is represented by Pearson’s correlation coefficient and is denoted by ‘r’. In other words, Pearson’s correlation coefficient is a statistical measure of the strength of a linear relationship between paired data. Furthermore, positive values denote a positive linear correlation between the variables and negative values denote negative linear correlation. Zero value denotes no linear
correlation. In the present study the strength of the correlation is described by using the guide that Ratner (2009) suggests for the absolute value of ‘r’:

- Values between 0 and 0.3 (0 and −0.3) indicate a weak positive (negative) linear relationship.
- Values between 0.3 and 0.7 (0.3 and −0.7) indicate a moderate positive (negative) linear relationship.
- Values between 0.7 and 1.0 (−0.7 and −1.0) indicate a strong positive (negative) linear relationship.

For the present study, correlation analysis has been initiated to check the relationship between internal marketing practices and faculty job satisfaction. Further, between faculty job satisfaction and student satisfaction.

4.13.6 Regression Analysis

Regression analysis is a statistical technique used to determine the relationship between a single dependent (criterion) variable and one or more independent (predictor) variables. The analysis yields a predicted value for the criterion resulting from a linear combination of the predictors (Palmer & O’Connell, 2009). It is represented by the coefficient of determination which is denoted by $R^2$. This coefficient estimates the amount of variance in the criterion score accounted for by a linear combination of the predictor variables. Higher the value is for $R^2$, the less error or unexplained variance and, therefore, the better the prediction. $R^2$ is dependent on the multiple correlation coefficients (R), which describes the relationship between the observed and predicted criterion scores. In the present study the strength of the variance explained is described by using the guide that Palmer and O’Connell (2009) suggests for the absolute value of ‘$R^2$’:

- When $R^2 = 1.00$, there is no difference between the predicted and observed scores and represents a perfect prediction with no error and no unexplained variance.
- When $R = 0.00$, there is no relationship between the predictor(s) and the criterion and no variance in scores has been explained. The chosen variables cannot predict the criterion.

The goal of model selection is to develop a model that results in the highest estimated value for $R^2$.

### 4.13.7 Confirmatory Factor Analysis

CFA was first developed by Joreskog and has built upon and replaced older methods of analyzing construct validity (Joreskog, 1969). It has been used for confirming the various constructs. Confirmatory Factor Analysis (CFA) uses a multivariate technique to test whether a pre-specified relationship exists between the manifest and latent variables and how well measured variables represent a latent construct (Demirbag, Tatoglu, Tekinkus, & Zaim, 2006). In confirmatory factor analysis, the researcher begins with hypotheses prior to the analysis. These models or hypotheses specify which variables will be correlated with which factors and hypotheses formulated are based on a strong theoretical and empirical foundation. The researcher is able to explicitly test hypotheses concerning the factor structure of the data due to having the predetermined model specifying the number and composition of the factors. In the present study, CFA has been conducted with maximum likelihood estimation (MLE) to refine and evaluate the factor structure of all the scales. CFA has an ability to assess the construct reliability and validity of the measurement model by calculating Factor Loadings, Average Variance Extracted (AVE) and Construct Reliability (CR). Moreover, path value criteria that are standardised regression weight (SRW) has been used to ensure that the observed variables load as predicted by the expected number of factors. The standardised regression weight (SRW) reflects the change in the dependent variable for each unit change in the independent variable (Hair et al, 2009). The variables with SRW less than 0.50 have been deleted (Hair et al, 2006).

Further, the fitness of all the measurement models has been verified with various indices of goodness of fit, such as Chi-Square - Degrees of Freedom Ratio (CMIN/DF), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Comparative Fit
Index (CFI), Normed Fit Index (NFI), Incremental Index of Fit (IFI), Tucker-Lewis Index (TLI), Root Mean Squared Error (RMR) and Root Mean Square Error of Approximation (RMSEA), P for Test of Close Fit (PCLOSE). For the model to be fit, at least one absolute criterion and one incremental fitness criteria should meet the prescribed limits (Hair et al., 2006). The modification index has been used wherever applicable by correlating error terms to improve the model fit (Anderson & Gerbing, 1988; Gerbing & Anderson, 1984; Hermida, 2015; Steele, 2008). Error terms have been correlated within the factor with the recommendations provided by the existing literature (Steele, 2008).

The brief discussion of all other fitness indices and their acceptable range are given in Table 4.4.

**Table 4.4: Criteria for Establishing Goodness of Fit**

<table>
<thead>
<tr>
<th>Goodness of Fit Measure</th>
<th>Cut off Value</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Root Mean Square Residual (RMR)</td>
<td>≤ 0.05</td>
<td>Hulland, Chow, &amp; Lam (1996), Vaseer &amp; Shahzad (2016)</td>
</tr>
<tr>
<td>Goodness of Fit Index (GFI)</td>
<td>&gt; 0.08</td>
<td>Baumgartner &amp; Homburg (1995), Doll, Xia, &amp; Torkzadeh (1994), Graham (2016), Vaseer &amp; Shahzad (2016)</td>
</tr>
</tbody>
</table>
### Normed Fit Index (NFI)

- **Value**: $> 0.90$

### Incremental Fit Index (IFI)

- **Value**: $> 0.90$

### Tucker Lewis Index (TLI)

- **Value**: $> 0.90$

### Root Mean Square Error Approximation (RMSEA)

- **Value**: Ideally $< 0.05$ but not $> 0.08$

### P for Test of Close Fit (PCLOSE)

- **Value**: $> 0.05$
- **Reference**: Hu & Bentler (1999)

*Source- Based on a Review of Literature*

#### 4.13.8 Data Reliability

The study measures the reliability of varied construct using Cronbach’s alpha and composite reliability (CR).

**Cronbach’s Alpha:** The test of consistency in the measurement of a variable is known as the reliability of the instrument. It is also known as Reproducibility. As per Carmines and Zeller (1979), reliability is defined as the degree to which a test or an instrument provides the same results on repeated measurements. Therefore, it can be said that if a test or a measure produces the same result on applying it repeatedly, it is said to be reliable (Hair, Black, Babin, Anderson, & Tatham, 1998). Reliability was established through Cronbach’s alpha, its value ranges from 0 to 1 with scores greater than .70 considered acceptable (Nunnally & Bernstein, 1994). The most commonly used measure to estimate the internal consistency of the scale items is Cronbach’s alpha. It ranges from 0 to 1 and the
value greater than or equal to 0.70 is considered to be acceptable. In the present study, it is calculated in the SPSS 21 software.

(ii) **Composite Reliability (CR):** Composite reliability is a more precise evaluation of the reliability. Hair et al. (2012) considered composite reliability better indicator than Cronbach’s alpha as it is free from the assumption of equal item reliabilities. The CR values greater than or equal to 0.70 is considered to be acceptable. Composite reliability of a scale can be calculated by the formula given by Hair et al. (2009) as under:

\[
\text{Composite reliability} = \frac{(\text{Sum of standardised loading})^2}{(\text{Sum of standardised loading})^2 + \text{Sum of error variance})}
\]

**4.13.9 Data Validity**

Before testing the model fit, it is important to establish the Validity of the measurement model. As per Saunders et al. (2009), validity is the degree to which the questionnaire or the model measures what it intended to measure. For overall validity check, the following measures were checked – Content Validity, Construct Validity, Convergent Validity and Discriminant Validity.

(i) **Content Validity:** Content validity (also known as face validity) is defined as the degree to which an instrument covers all the necessary dimensions of the constructs being studied (Cooper & Schindler, 2003). It is used to measure the thoroughness of the theoretical concepts and should reflect what it intends to measure (Zikmund, Babin, Carr, & Griffin, 2010). It is not possible to measure content validity through any statistical analysis. Therefore, content validity was duly assessed by reviewing the literature and discussion with experts and researchers working on similar topics. In the present study, a literature review of the constructs, faculty and students opinion during the pilot survey were undertaken to establish the content validity of faculty and student satisfaction questionnaire.
(ii) **Construct Validity**: The construct validity measuring the extent to which a single scale measures the same construct has been examined through factor analysis. An Eigen value equal to one is taken as a criterion for significance of a factor. If Eigen values of all the factors are greater than one, this indicates strong construct validity. It can also be established through convergent validity.

(iii) **Convergent Validity**: The items that are the indicators of a specific construct should converge or share a high proportion of variance in common, which is known as convergent validity. The various ways to estimate the relative amount of convergent validity among item measures are as under;

(a) **Factor Loadings**: Convergent validity was verified using factor loadings from confirmatory factor analysis. According to Hair et al. (2010), factor loadings estimates should be greater than 0.5 or ideally, 0.70 or higher, indicates a higher level of convergence.

(b) **Variance Extracted**: In CFA, the average percentage of variance extracted (VE) among a set of construct items is a summary indicator of convergence. AVE should be 0.50 or greater to suggest adequate convergent validity. If the single factor explains less than 50% variance then the dataset is said to have no common method bias (Gaskin, 2012). CMB refers to a bias in dataset due to something external to the measures. A study that has significant common method bias is one in which majority of the variance can be explained by a single factor (Gaskin, 2012).

(iv) **Discriminant Validity**: It is the extent to which a construct is truly distinct from other constructs. High discriminant validity provides evidence that a construct is unique and captures some phenomena, which other measures do not. If the average variance extracted (AVE) for each construct is greater than its maximum shared variance (MSV) and Square root of AVE greater than inter-construct correlations, discriminant validity is supported.

Threshold values of reliability and validity as suggested by Bagozzi (1980) and Hair et al. (2010) are shown below:
Reliability

- CR > 0.7

Convergent Validity

- AVE > 0.5

Discriminant Validity

- MSV < AVE

- Square root of AVE greater than inter-construct correlations

To validate the assessments of reliability, convergent validity and discriminant validity, a tool developed by Gaskin (2012) were utilised, namely the validity master stats tool package.

4.13.10 Structural Equation Modeling (SEM)

Structure Equation Modeling is also know as ‘Covariance Structure Analysis’ and ‘Latent Variable Analysis’ and is used to analyse the strength of the relationships between each of the dimensions presented in the proposed conceptual model. The Analysis of Moment Structures, or AMOS 16, a computer program was used to test the hypothesized relations. To meet the several assumptions required by structural equation modeling, the data have been checked for missing values, outliers, univariate and multivariate normal distributions, reliability and validity. The goodness of fit is checked by using different indices such as chi-square, the significance of chi-square, CMIN/DF, GFI, AGFI, CFI, TLI, RMR and RMSEA (Hair et al., 2009). The present study uses SEM to suggest a model and to examine the relationship between internal marketing practices and faculty job satisfaction, and further between faculty job satisfaction and student satisfaction in the management of educational institutions.

4.14 CHAPTER SUMMARY

In this chapter, the purpose of the study, research objectives and hypotheses have been discussed in detail. This is followed by an elaborated explanation of research design
and methodology including sampling framework, sample size, tools of data collection and finally explanation of various statistical techniques used for the analysis of study which mainly includes correlation, regression, factor analysis, reliability, validity, CFA and SEM analysis.
REFERENCES


