

A STUDY ON DETERMINING KEY ATTRIBUTES FOR SELECTION OF MANAGEMENT INSTITUTES USING ANALYTICAL HIERARCHY PROCESS (AHP)

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ABSTRACT

The employability of MBA/PGDM students in India is of great concern. A report states that 93 percent MBA graduate is unemployable. Except for the IIMs, only a few of these management institutes are able to provide quality management education that can help their graduates secure employment. However, with the increase in nations economic growth, competition is also increasing and management institutes need to ensure good quality education to their students and services to its customers i.e. industry. This concern is getting well recognized by students and their parents more so due to the high cost of management education. The location of management institute also plays an important role in the decision. Metro cities like Delhi, second-tier cities like Jaipur and smaller cities like Udaipur have various advantages and disadvantages. Making a choice of management institute for their wards hence become a difficult task. Initially, a questionnaire is designed in view of Management institute-CSI Model and Analytical Hierarchy Process (AHP) technique is employed to allocate the relative weight of every variable in the questionnaire. With the survey data, quantitative methods are utilized in the data analysis to measure the service quality based on customer satisfaction (CS). With the computation of Customer Satisfaction Index (CSI), Management Institute location quality (MILQ) is measured. Therefore, this paper dedicates on evaluating the importance of the location of management institutes quality based on a survey of customer satisfaction.

Keywords : Management Education, MBA, Customer Satisfaction, Survey, Location, Students, Higher Education

INTRODUCTION

The phenomenal growth of MBA or its equivalent the postgraduate diploma in management has been largely triggered by the growth of the corporate sector and industrialization in India. Since Business School graduates have played a critical role worldwide in building competitiveness of enterprise and industry, MBA education has emerged the most wanted subject in higher education. On account of the acceptance of the MBAs by industry and business, the number of institutions offering the program kept on growing. High standards in the selection of students and management education have been attained at the Indian Institutes of Management (IIMs) and at very few other institutions.

The current decade has witnessed tremendous growth in the number of management institutions, with most of these being privately managed. As per the report, there are more than 1600 management institutes approved by AICTE with 128922 seat availability.

Gundersen et al (1996) and Lam et al (1996) along with many other research scholars carried out the study on the relationship of service with customer satisfaction and relevance of observing the customer satisfaction. Many analytical methods such as AHP, discriminant analysis, coefficient analysis etc are used to identify the key factors among the alternatives by analyzing the survey data's.

The organization of the paper is as follows. In section 2, the literature review of earlier researchers work has been carried out in the education industry, including higher education/ management institute. Section 3 describes the study methodology and management institute location customer satisfaction index model. In section 4, data analysis and data-based conclusions on customer satisfaction for saying management institute location service quality has been done and its importance for the industry is worked out.

LITERATURE REVIEW

In the 'World Talent Report' published on Tue, Nov 25, 2014, the Switzerland-based IMD, a top-notch global business school, stated that in 2014 India slipped to the 48th position out of 60 countries from the 29th place it held in 2005. One of the factors behind the drop was the lack of quality of scholars to match the needs of the business community. A great challenge Indian management programmers and institutes facing are that students directly move out from colleges and attend management schools without proper work experience and expectations in the job environment. The biggest bottleneck for good-quality management education is the low number of faculty members. Indian management and technical education are largely theoretical, based on logic, mathematics and encourages an old and repetitive method of studying. VignaOza and SwatyParab (2012) in their study on three pillars of quality management system in India concluded that in order to provide quality education the amount of efforts needed on the part of the educational institutes is double that is needed to be made by the educational system as a whole whereas the efforts needed on the part of the faculties is three times that of the educational system. RomiSainy and SanjeevniGangwani (2010) suggested that the most

important factor rated by both male and female student was placement and ranking.

Parasuraman, Valarie A. Zeithaml, & Leonard L. Berry (1985) presented “Five Gaps Service Quality Model”. They extended their research and in 1988 proposed the concept of SERQUAL, service quality with five dimensions of “Tangibles, Reliability, Responsiveness, Assurance and Empathy”. On the hotel industry, use of SERVQUAL was carried out by Nelson Tsang, Hailin Qu (2000), they attempted to assess the service quality in China's hotel industry, from the perspective both international tourists and hotel managers. Thanika Devi Jowaheer and Darren Lee Ross (2003) studied in Mauritius hotel guest's perception using a modified SERVQUAL. The comparison of perceptions and expectations of consumers is always taken as a critical importance to evaluate service quality. This comparison is in conformity with the definition of “Customer Satisfaction (CS)”. For the hotel industry, as its service has a high interaction with customers, CS is formed in the service process. Thus, CS depends on perceived values of Quality and customer expectations. LeBlance and Nguyen (1999) identified perceptions of price in the form of the price/quality relationship as most important factors, while Ford et al. (1999) recognized academic reputation, cost/time issues and program issues as the determinants of universities choice and also found that program issues such as range of programs of study, flexibility of degree program, major change flexibility and range of degree options are the most important factors for students to choose higher education institutions.

One of the most representative models is American Customer Satisfaction Index model (ACSI model), put forward by Fornell (2005)

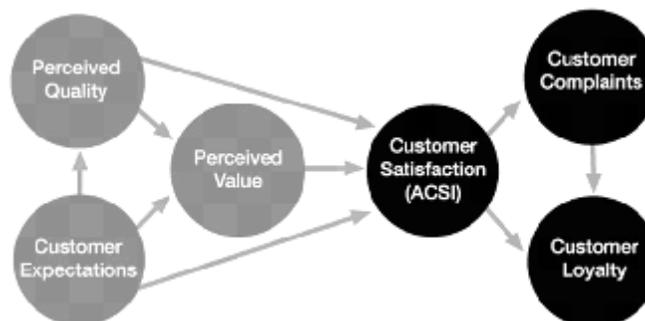


Figure 1 American Customer Satisfaction Index Model

In the ACSI model, there are factors affecting the customer satisfaction are on the left side (customer expectations, perceived quality, and perceived value), satisfaction (ACSI) in the centre, and the resultant of satisfaction is on the right side (customer complaints and customer loyalty).

Inspired by the ACSI model with the feature of selection of management institutes and importance of location, a management institute location service quality based on Customer Satisfaction Index (MILCSI) is built to acquire the customer perceived management institute location service quality and key factors are assessed which determine the MILCSI.

STUDY METHODOLOGY

Based on the MILSCI model, students looking for higher education in management were interviewed and asked the basic question – What are the important features of management institute and their location they consider to take admission for higher studies in management. The survey was conducted on random selection basis and 220 students were approached during the month of Oct-Dec 2017 at various graduate institutions at Udaipur, Bhopal, Jaipur and Delhi. Based on the responses, the four major factors that make the significant contribution to customer satisfaction are

1. Placements
2. Course Fees
3. Faculty Profile
4. Salary Package

Based on the above information, the MBACSI has been proposed as under :

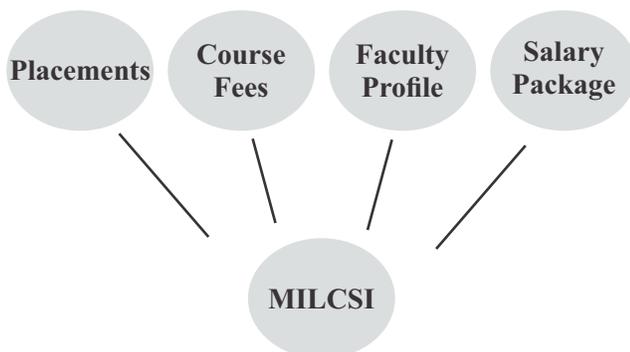


Figure 2: MBA institute Selection Customer Satisfaction Index Model

To understand and compare the gaps on these critical factors, Analytical Hierarchical Process (AHP) has been used to understand the quality parameters of three locations at Delhi, Jaipur and Udaipur. These three locations are taken as an alternative for any management institute and the criterion for selection are Placements, Course Fees, Faculty profile and Salary Package.

The AHP hierarchy for this decision is shown below in Figure 3.

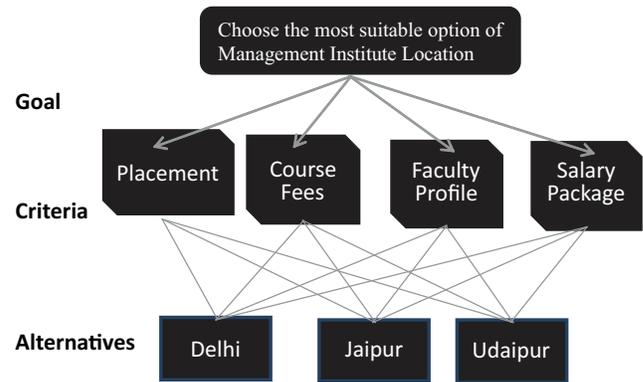


Figure 3: AHP process for selection of Management Institute Location

The Method of Applying AHP Process :

As the decision makers continue with the AHP, they determined the priorities for the management institute location in consideration with respect to each of the decision criteria, and priorities for each of the criteria with respect to their importance in reaching the goal. The priorities then combined throughout the hierarchy to give an overall priority for each management institute location. The management institute with the highest priority is the most suitable alternative, and the ratios of the management institute location priorities indicate their relative strengths with respect to the Goal.

PAIRWISE COMPARISONS

Since there are three alternatives (Delhi, Jaipur and Udaipur) and each one compared to each of the others, the decision maker's experts made pairwise comparisons with respect to each Criterion: Delhi vs. Jaipur, Delhi vs. Udaipur, and Jaipur vs. Udaipur. For each comparison, the experts first judge which member of the pair is weaker with respect to the Criterion under

consideration. Then they assign a relative weight to the other criteria.

Table 1 : Significance value description

| Significance values | Value Description |
|---------------------|---|
| 1 | Status of both factors' equal importance |
| 3 | Status of Factor 1 is more important than Factor 2 |
| 5 | Status of Factor 1 is far more important than Factor 2 |
| 7 | Status of Factor 1 is highly significant compared to Factor 2 |
| 9 | Status of Factor 1 is very highly significant compared to Factor 2 |
| 2,4,6,8 | Intermediate values of degrees in the above description in the choice between two factors |

Source: Saaty, 2008

In problem-solving with AHP, object (problem) is determined first, then AHP solution steps are implemented starting from the object. Solution phase with AHP operates in the following way (Timor 2011;18, Önder and Önder 2014;23-24);

- Step 1 : Decision problem is defined and purpose is determined.
- Step 2 : Necessary decision criteria are set to achieve the objective.
- Step 3 : Possible decision alternatives are determined.

Step 4 : The hierarchical structure of decision problems are created.

Step 5 : Paired comparison of the criteria for each level of the hierarchy and the degree of importance of criteria is determined by taking advantage of eigenvectors.

Step 6 : The consistency of the comparison matrix obtained in the previous step is determined.

AHP, with Consistency Rate (CR) obtained, provides the opportunity to test the priority vector which was obtained and hence the consistency of one-to-one comparisons which were made between the criteria's. AHP attributes the essence of CR calculation to the number of criteria and the comparison of a factor which is called Basic Value.

Step 7 : Severity of the alternatives and criteria (weights) are determined. Alternative having the highest weight is the best alternative, criteria having the highest weight is the best criteria.

Paired comparison of criteria has been carried out with alternatives, calculation of priority done with the concept of thenormalized eigenvector. Thereafter, the Consistency Index (CI) is calculated and consistency ratio (CR) derived to confirm the consistency in the pairwise comparison.

The one paired comparison calculation is demonstrated as below.

Table 2: Pairwise comparison of all criteria

| Step 1: Pairwise comparison for "Placement" | | | | | |
|---|-----------------------|---------------------|--------|-------------|----------|
| | | | | | Priority |
| Matrix 1 | Placement | Delhi | Jaipur | Udaipur | |
| | Delhi | 1 | 3 | 5 | 0.63699 |
| | Jaipur | 1/3 | 1 | 3 | 0.25828 |
| | Udaipur | 1/5 | 1/3 | 1 | 0.10473 |
| | CI: 0.01925555 | CR: 0.036712 | | Sum: | 1.00000 |

Step 2: Calculation of priority (i.e., normalized eigenvector)

| Matrix 2 | Placement | Delhi | Jaipur | Udaipur | Eigenvector | Normalized Eigenvector |
|----------|-----------|----------|----------|-------------|-------------|------------------------|
| | Delhi | 3 | 7.666667 | 19 | 29.66667 | 0.63967 |
| | Jaipur | 1.266667 | 3 | 7.666666667 | 11.93333 | 0.25731 |
| | Udaipur | 0.511111 | 1.266667 | 3 | 4.77778 | 0.10302 |

| Matrix 3 | Placement | Delhi | Jaipur | Udaipur | | |
|----------|-----------|----------|----------|-------------|-----------|---------|
| | Delhi | 28.42222 | 70.06667 | 172.777778 | 271.26667 | 0.63695 |
| | Jaipur | 11.51852 | 28.42222 | 70.06666667 | 110.00741 | 0.25830 |
| | Udaipur | 4.671111 | 11.51852 | 28.42222222 | 44.61185 | 0.10475 |

| Matrix 4 | Placement | Delhi | Jaipur | Udaipur | | |
|----------|-----------|----------|----------|-------------|-------------|---------|
| | Delhi | 2421.951 | 5973.045 | 14730.79457 | 23125.79045 | 0.63699 |
| | Jaipur | 982.053 | 2421.951 | 5973.044774 | 9377.04886 | 0.25828 |
| | Udaipur | 398.203 | 982.053 | 2421.951111 | 3802.20707 | 0.10473 |

Step 3: Calculation of consistency index (CI)

(1) Calculate the weighted rating for each row in matrix 1

| | |
|--------|------|
| Row 1: | 1.94 |
| Row 2: | 0.78 |
| Row 3: | 0.32 |

(2) Approximation of Lambda(max)

| | |
|----------|----------|
| Row 1: | 3.038511 |
| Row 2: | 3.038511 |
| Row 3: | 3.038511 |
| Average: | 3.038511 |

| | | | | | | |
|---|----------|--|--|--|--|--|
| (3) Calculate consistency index (CI) | | | | | | |
| CI = (Lambda(max) - n) / (n-1), where n is the number of elements that we compared in matrix 1. | | | | | | |
| CI = | 0.019256 | | | | | |
| Step 4: Calculation of consistency ratio (CR) | | | | | | |
| CR = | 0.036712 | | | | | |

Similarly, the pairwise comparison of the criteria carried out and the results are as under

Table 3: Pairwise comparison for all criteria

| Step 1: Pairwise comparison for all criteria | | | | | | |
|--|-----------------|------------|-------------|-----------------|----------------|----------|
| | | | | | | Priority |
| Matrix 1 | Criteria | Placement | Course Fees | Faculty Profile | Salary Package | |
| | Placement | 1 | 5 | 1/3 | 5 | 0.33480 |
| | Course Fees | 1/5 | 1 | 1/5 | 3 | 0.13703 |
| | Faculty Profile | 3 | 5 | 1 | 1/3 | 0.32593 |
| | Salary Package | 1/5 | 1/3 | 3 | 1 | 0.20224 |
| CI: | 0.79713367 | CR: | 0.904292309 | | Sum: | 1.00000 |

Table 4: Final Priority with Criteria and Alternatives

Final Priority with criteria and alternatives

| Management Institute Location Choice | Criterion | Criterion Weight | Alternative's weight | Weighted Score | Decision |
|--------------------------------------|-----------------|------------------|----------------------|-------------------|-----------------|
| Delhi | Placement | 0.334797934 | 0.636985564 | 0.213261451 | |
| | Course Fees | 0.137034994 | 0.080961232 | 0.011094522 | |
| | Faculty Profile | 0.325925869 | 0.636985572 | 0.207610076 | |
| | Salary Package | 0.202241202 | 0.730644613 | 0.147766445 | |
| | | | Sum | 0.57973249 | <-- BEST |
| Jaipur | Placement | 0.334797934 | 0.258284999 | 0.086473284 | |
| | Course Fees | 0.137034994 | 0.188394097 | 0.025816584 | |
| | Faculty Profile | 0.325925869 | 0.258284994 | 0.084181761 | |
| | Salary Package | 0.202241202 | 0.188394135 | 0.038101056 | |
| | | | Sum | 0.234572686 | <-- Second Best |
| Udaipur | Placement | 0.334797934 | 0.104729437 | 0.035063199 | |
| | Course Fees | 0.137034994 | 0.730644671 | 0.100123888 | |
| | Faculty Profile | 0.325925869 | 0.104729434 | 0.034134032 | |
| | Salary Package | 0.202241202 | 0.080961252 | 0.016373701 | |
| | | | Sum | 0.18569482 | <-- Last |

DATA ANALYSIS AND CONCLUSION

Based on the AHP analysis on the three paying guest house in conversation and evaluated for the four factors namely Placement, course fees, faculty profile and packages, overall satisfaction weight has been 57.97% for Delhi, 23.45% for Jaipur and 18.56 % for Udaipur. Thus, with the current as is status, Delhi is almost preferred location among the students for management institute, followed by Jaipur and Udaipur.

On the individual basis, on Placement, Delhi has 63.69% score, Jaipur has 25.82% and Udaipur has only 10.47%. Thus Udaipur and Jaipur based institutes need to improve their placement strategies.

On Course Fees preference, Udaipur has 73.06 %, Jaipur has 18.83 % and Delhi has 8.09 % scores. Thus, the institutes located at Delhi are expected to be expensive and data confirm the trend.

For Faculty Profiles, Delhi has 63.69%, Jaipur has 25.82 % and Udaipur has 10.47 % score, being one of the important aspects for management institutes, management of Jaipur and Udaipur management institutes need to improve the intake and quality of faculties to attract the students.

For Salary Packages, Delhi has 73.06%, Jaipur has 18.83% and Udaipur has 8.03% score, thus clearly management institutes at Jaipur and Udaipur need to improve their placement cell and work on companies with higher packages.

This study used AHP techniques and customer scorings depending on customer satisfaction. Even though similar studies have been conducted in the past years, this study contributes to the literature due to the absence of such study in the management institutes location importance for students. In this respect, the execution of the study is of great importance. Furthermore, the administrations of management institutes at these three locations can also obtain information by benefiting from the study results for improvement and taking competitive advantage.

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