

# Attributes Contributing in the Positioning: Multidimensional Analysis of Hotels in Gwalior

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## Abstract

The present study was undertaken to know the positioning of hotels in Gwalior. The basic idea was to investigate the parameters on the basis of which the customers categorise hotels. 139 subjects/respondents who were the frequent visitors of hotels served as a sample for the study. The age of the subjects was in the category of 25 to 50. Each subject was shown 36 pairs of the hotel for comparison and was asked to give their preference of the hotel over other. The data obtained from 139 subjects were analysed using multidimensional scaling (MDS) procedure. This research paper finds out the dimensionality that groups the items of service quality for hotels. It has got two dimensions for the study. Customers have perceived price and quality of services as important aspects. This paper is almost first attempt in the settings of South Asia, and it will lead in the development of offerings aspects of hotels.

**Keywords:** Hotels, Positioning, MDS, Consumer Behaviour, India

## Introduction

The image in the minds of the consumer comprises the bundle of attributes that the hotel offers to meet guests' needs and wants (or expectations). The positioning of a hotel can be viewed from two perspectives, one from the management side and second from the guests' side. The management team must have a pure hallucination about hotel's intended position and their promotional efforts must eloquent about the distinction of the hotel from other hotels.

The chief objective of this study is to conduct positioning analysis for hotels and to identify the relative positions of the hotels and their service attributes. This study uses MDS approaches for creating perceptual maps that illustrate the relative positioning of hotels and key service attributes.

The position of a hotel is determined by its visitors (customers). Customers' perception of the position of a hotel can be split into specific attributes, and that can be taken on graphs. These figures are known as perceptual maps. The position of a hotel can be graphed, and this will allow a comparison of its position about competitors, on several attributes. In this article, it is demonstrated how perceptual maps can show the ways and means to a hotel for understanding itself. Further, how these maps can assist in determining a hotel's competitive set also. The maps were constructed from the data retrieved from surveys of residents of Gwalior.

The requirement of this research study is found suitable by looking at the data in table and figure below. Table 1 shows that supply was always higher than the demand and surprising observation to note is fluctuations in demand data. Looking at the percentage change in the data which is found negative from the previous year or with very slight increment in the consumption.

**Table 1: Supply and Demand Data for Indian Hotel Industry**

Year	Supply	Demand	Occupancy (%)	% change
2000	5,36,67,268	3,06,24,774	57.1	
2001	5,43,65,257	2,72,04,967	50.0	-12.3
2002	5,49,85,502	2,83,46,674	51.6	3.0
2003	5,58,27,319	3,30,68,326	59.2	14.9
2004	5,65,51,389	3,65,42,100	64.6	9.1
2005	5,72,56,335	3,94,75,860	68.9	6.7
2006	5,80,34,136	3,96,13,849	68.3	-1.0
2007	5,89,21,269	4,02,63,351	68.3	0.1
2008	6,01,66,985	3,79,44,403	63.1	-7.7
2009	6,23,17,647	3,53,80,680	56.8	-10.0
2010	6,52,74,190	3,94,75,394	60.5	6.5

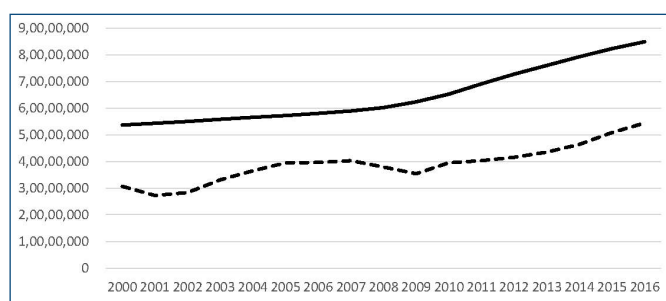
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Year	Supply	Demand	Occupancy (%)	% change
2011	6,90,97,446	4,02,62,845	58.3	-3.6
2012	7,27,47,450	4,15,47,402	57.1	-2.0
2013	7,59,89,831	4,35,12,220	57.3	0.3
2014	7,92,50,599	4,64,14,549	58.6	2.3
2015	8,23,39,100	5,08,21,213	61.7	5.4
2016	8,49,34,950	5,44,02,157	64.1	3.8

Source: Annual data reports of STR Global (2017)

It is effortless to observe from the figure one that the demand for hotels was always lower than the supply, and sometimes it was fluctuating to lower than the standard trend line also. This pattern was the main interest of researchers behind this research study. With the help of this research, researchers have made an attempt to solve the problems of hotel owners and managers.



**Fig. 1: Graphical Illustration of Gap between Supply and Demand in Indian Hotel Industry**

Source: Annual data reports of STR Global (2017)

## Literature Review

Whenever customer books a room (or any other amenity) in a hotel, it represents a decision about a purchase which is based on the perception of the client of the characteristics represented by that hotel. These attributes are both tangible (the physical property, overall ambience) and intangible (services offered). Typical attributes might include low price, convenient location, and helpful and courteous staff members. Market position of the hotel is constituted by the package of attributes, which are offered by the hotel. It is assumed that these sets viewed about other competitors (hotels). Hotels which have a similar bundle of attributes are considered to be in the same competitive set. While the hotels offer a different group of attributes are taken into account on other dimensions (Shostack, 1977; Aaker & Shansby, 1982).

The part of the positioning that derives directly from the hotel's (product's/ brands) physical attributes is its real position (Lewis, 1990). The other portion of the positioning is subjective, involving individuals perceptions of a hotel or personal property's intangible attributes. These attributes can only be experienced during the stay at the hotel.

Rathmell (1974) has stated that most of the hotel's attributes are intangible, making it difficult for a customer to distinguish among competitive offerings. To enable customers to make that difference, marketers attempt to establish a position using specific images or slogans and the brand names, that signify some of the intangible attributes.

Lewis (1981) cited in Dev, Morgan, and Shoemaker (1995) has advised that a favourable position comprises three elements, it differentiates the brand, it 'locates' the brand on specific benefit dimension, and it creates an image. Lewis (1981) continued "... To syndicate these elements, the positioning statement should be designed to create a picture reflecting the perception of the hotel that management wishes its target market to hold and reflecting promises on which the brand can deliver and make good." It can be said that the fundamental way to understand the position of a hotel is in how its customers review it.

Green and Wind (1975) have determined that by using marketing research, manager and owners of hotels can determine which attributes are considered valuable by the customers in choosing a hotel. It is also established that how they (customers) are viewing a hotel in light of those attributes.

## Cognition for Hotels

Glock and Nicosia (1963) define the consumer behaviour (for hotels) as the selection or purchase behaviour adopted in a particular time or period. Engel, Miniard, and Blackwell (1995) stated in their paper that consumer behaviour could be defined as directly related to the acquisition, consumption, and disposal of products and services, activities, and include actions triggered by the decision-making process before and after. Consumer behaviour is the way people use or will be engaged in with the activities of market goods, and commodities including tangible and intangible products, services and knowledge (Berkman & Gilson, 1981).

Sheth, Mittal, and Newman (1999) pointed out that consumers have different understanding towards different products. This difference arises from the characteristics of the product itself to give consumers the response generated by various stimuli, so the product features affect the consumer an important factor in the product evaluation. Bilkey and Nes (1982) confirmed that the message conveyed by the product into two parts, and the intrinsic and extrinsic. The central message include product design, function and many others also. The extrinsic messages include price, brand, guarantee etc. Consumers often use the information to evaluate products. However, consumers, because of the time and cost considerations or subject to limited knowledge and in assessing the product, may not use all of the information, paying attention to those who can bring significant benefits to the property.

The attitude of consumers proposed process includes two states: emotional and cognition. Every person involved in making a purchase decision has an attitude mixed with personal motivation, perception, and preference factors. These personal factors are affected by age, income, education, personal style, and attitudes of risk. Thus, consumer's cognition can be defined as individuals of the same things, are subject to different environmental situations and personal characteristics of the external and internal factors, which have different perception and buying behaviour.

## Multidimensional Scaling

Positioning analysis frequently uses perceptual maps to identify the positions of competitive products or brands. Multivariate statistical approaches, such as multidimensional scaling (MDS) have been widely seen to create perceptual maps (Myers, 1996). Multidimensional scaling uses similarity or preference data that are ratings or ordinal scales in the pair-wise situations (Aaker, Kumar, & Day, 2007; Verma, 2012).

MDS is a popular method for brand or product positioning (Kaul & Rao, 1995) and has been used for subjects such as hospitality and tourism (e.g., Dev *et al.*, 1995; Kim & Agrusa, 2005) and marketing (Wilkes, 1977; Winer & Moore, 1989; Cha, Kim, & Lee, 2009). This method can produce perceptual or positioning maps. This paper concludes with implications for the managers and directions for further researches on hotel management.

Perceptual mapping is a tool of marketing research that has been extensively used to position products and services for customers (Kohli & Leuthesser, 1993). Goods or services are displayed as points on a map. Perceptual mapping is often used to help management find a positioning approach. MDS provides a graphical representation of the objects in a common space. The graphical representation can be easily explained and quickly understandable. The output of the MDS usually describes relationships in the plots. Each plot has a few dimensions, depending on the degree of similarities between respondents' perceptions of selected products (brands). The badness of fit between the data and the final configuration can be indicated by the stress parameter (Kruskal & Wish, 1978; Verma, 2012). The suitable number of dimensions can be determined by plotting the stress values contrary to the number of dimensions.

The MDS naturally uses non-attribute data based on the similarities ratings of the products or goods under consideration of the study. For similarity data collection, participants were asked to rate or rank the similarities of all pairs of brands (e.g., all pairs of hotels) are listed to determine which hotel is the most similar to each other and which are the most dissimilar). These measures are often used to obtain respondents' choice data (e.g., each respondent is required to rank the hotels from the most preferred to the least preferred, to make paired comparisons and indicate which hotel in a pair is preferable).

Metric or non-metric methods can analyse the similarity and preference data. Metric MDS uses either rating or interval data, while non-metric MDS requires data which is ranked ordinally. The metric ratings of all hotels about a set of service characteristics were input to an MDS analysis. The output of the MDS analysis is a perceptual map that illustrates the relationships between hotels and service components. MDS can include all properties to generate perceptual maps.

## Research Methodology

The research was conducted in Gwalior, a city in Madhya Pradesh, India. The research is descriptive in nature. The basic purpose of the study is describing the opinion of residents about different hotels. Hence, this study sets forth two main objectives:

- To understand the positioning of the various hotels in Gwalior.

- To identify the relative positions of the hotel and their service attributes of differentiation.

For a good relevance of results of this study research team has collected the data with the help of a well-structured questionnaire.

### Sample Design

Sampling method for this study was nonprobability judgemental sampling.

### Sampling Frame

In total, 197 questionnaires were distributed, and the study has got 74% response rate. It means 146 questionnaires were received back. Few of them were either incomplete or filled wrong. Finally, only 139 questionnaires were used for further analysis. The data was collected from in and around Gwalior.

### Sampling Unit

As sampling was judgemental, it was decided that respondents should be frequent users of hotels, minimum once in a month. The purposes may be different, i.e. using rooms as accommodations, for conferences, meetings, lunch, dinner, parties and so on.

### Tools for Data Collection

A well-structured questionnaire was developed. The questionnaire was divided into two parts; one was about ratings of hotels and second was about socio-economic background of respondents. For data collection purpose the place visited by a team where at least one member of researchers was present at the location of data collection. In whole nine hotels were compared in this study. Using the formulae of pairwise comparisons and therefore, 36 questions were asked in the questionnaire (where  $N$  is number of items in pair wise comparisons).

### Data Analysis

Verma (2012) stated that the best possible solution would result in two dimensions only if less than 14 items

compared in the analysis. Model of this study has also got the two dimensions, and it is confirmed by the stress value of the model. Based on the stress value, the two-dimensional solution is the best as in this case the stress value is the least and closest to zero, 0.09768 (see Table 2). Names of these two dimensions are:

Dimension 1 (on X axis): Price

Dimension 2 (on Y axis): Quality of service

These dimensions are the attributes of these hotels, drawn either through researchers' experience or knowledge of the market through a survey of the customers, or a combination of these methods.

**Table 2: Iteration History for the 2-Dimensional Solution (in squared distances), Young's S-stress formula 1 is used**

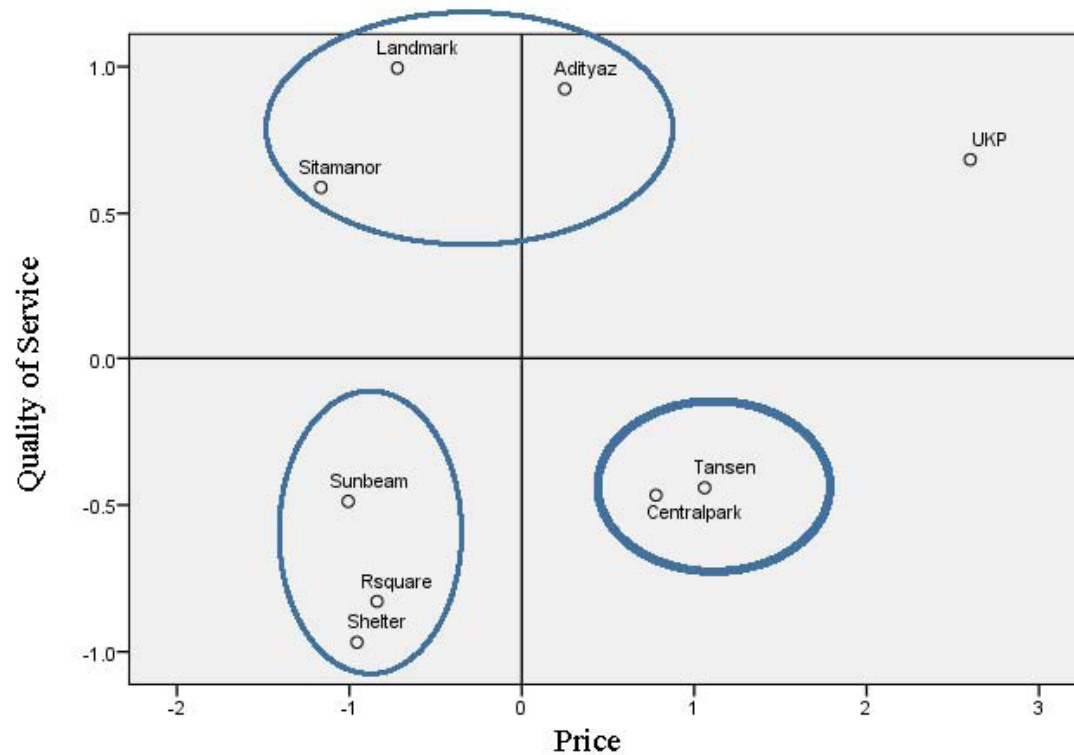
<i>Iteration S-stress Improvement</i>	
1	.19772
2	.15292 .04481
3	.13363 .01929
4	.12085 .01277
5	.11125 .00961
6	.10362 .00763
7	.09828 .00533
8	.09604 .00225
9	.09509 .00095
Iterations stopped because S-stress improvement is less than .001000 Stress = 0.09768; RSQ = 0.95245	
Stress and squared correlation (RSQ) in distances. RSQ values are the proportion of variance of the scaled data (disparities) in the partition (row, matrix, or entire data) which is accounted for by their corresponding distances. Stress values are Kruskal's stress formula 1.	

While looking at Table 2, it can be commented that the highly priced hotels are Usha Kiran Palace and Tansen Residency. Oppositely, Hotel Sita Manor and Sun Beam are found to be least priced hotels. For the second dimensions, Hotel Landmark was found most quality conscious, and it is followed by Hotel Adityaz and Usha Kiran Palace. Vice versa, Hotel Shelter and Regency Square were least bothered about the quality of service.

**Table 3: Stimulus Coordinates**

Stimulus number	Stimulus Name	Dimensions	
		1	2
1	Central Park	0.7784	-0.4663
2	Tansen Residency	1.0604	-0.4412
3	Usha Kiran Palace	2.6013	0.6833
4	Sun Beam	-1.0069	-0.4875
5	Landmark	-0.7214	0.9953
6	Adityaz	0.2493	0.9241
7	Sita Manor	-1.1649	0.5883
8	Regency Square	-0.8398	-0.8282
9	Shelter	-0.9563	-0.9678

As discussed earlier also, the objective of the study was to create perceptual maps showing the relative positions of the various hotels. Probabilistic multi-dimensional scaling algorithm was applied to derive the coordinates for the perceptual map. MDS algorithm was obtained from computer programme ALSCAL. If both the dimensions compared together, then Usha Kiran Palace is the only hotel which is considered as high price and superior quality hotel. Hotel Landmark, Adityaz, and Sita Manor are considered in the category of mid-priced and superior quality of service. Interestingly, Hotel Tansen and Central Park were observed as high priced but lower quality of service. Lastly, Hotel Sun Beam, Regency Square, and Shelter got the place in the grid of low priced and lower quality of service.

**Fig. 2: Derived Stimulus Configuration, Euclidean Distance Model**

## Conclusions

Gaining competitive advantage is always important. In this situation, hotel owners and managers must position their brands in the minds of their consumers to obtain a competitive advantage. Service differentiation is a crucial element to sustaining the market leadership (which has been determined by the many attributes). The study identified the relative positioning of the hotels based

on the survey conducted among the respondents on 36 pair-wise comparisons. This study explores competitive standings and key strengths of each hotel.

A major limitation of the study could be the tools of data analysis. Some advanced methods and algorithms like – MultiScale, PREFSCAL, and PROXSCAL are available for data analysis. Future researchers can also use Correspondence Analysis (CA) and Multiple Correspondence Analysis (MCA). Results of multiple

correspondence analysis can be helpful for the hotels to gain insights into their competitors, their services, and their preferences.

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