Factors Affecting the Sales in Hotel Industry
(With special reference to Radisson Jalandhar)

*Aaina Dhingra

ABSTARCT

The major service sector industry of India is the hotel industry and it is enormously important for it to grow, earn revenue and profits for its growth. Sales in a hotel are an asset to the company which provides them a competitive edge over others and at the same time provides customer satisfaction. The present study is an attempt to study the various factors affecting sales in the hotel industry with special reference to Radisson Jalandhar and to find out the most efficient ones. The data for the study has been collected using questionnaire method from the customers visiting the hotel and the hotel staff .The survey included responses from 40 respondents which was analyzed using Factor Analysis statistical technique using Statistical Package for Social Sciences version 17. The study concludes that unique combination of industry-leading products, services and global best practices, added with ambitious global expansion plans, paves the way for hotels to deliver success. The most efficient factors that lead to success of Radisson Hotel as the hotel providing best customer satisfaction are Ambience of the hotel, Brand, Quality of Service and Facilities. Thus, the hotel industry requires to keep in mind the customer tastes and expectation, to provide them world class service and boost sales in the company.

Keywords: Hotels, Sales, Growth, Competitiveness, Customer Satisfaction

1.   Introduction

Satisfaction of the customers is the top most priority of any service industry as it leads to the sale which in turn gives both revenue and profits to the company. Adopting the most suitable marketing strategy is of utmost importance for a company's survival in a competitive business scenario of today's world. Today, the major emphasis is on satisfying the customer needs. The customer tends to make decisions on buying a product or a service based on their perception of the value and satisfaction that the product or service delivers. In order to achieve this it is not enough only to first market the product and then sell it but make sure that the product being sold will meet the standards and be enough to fulfill the customer's expectations. Therefore the company must be aware and understand their customers; their needs, wants and demands. That is why many companies put a lot of effort and money into making different kinds of customer surveys analyzing their customers' behavior and learning about the different way of delivering the superior customer value and satisfaction. (Kotler & Armstrong, 2004)

The present study is an attempt to show the factors affecting sales of Radisson which are given utmost importance by the managers of Radisson Hotel for the customers who visited Radisson. The study shows the factors that are responsible for sale and concludes the most effective ones in the hotel industry.

2.   Objectives of the Study

The study has been conducted keeping in mind the following objectives:

1. To study the factors affecting sales in case of Radisson Hotel, Jalandhar
2. To find the most effective factors responsible for sale in Radisson, Jalandhar

* Assistant Professor, Apeejay Institute of Management Technical Campus, Jalandhar

3.   Database and Methodology

The research is exploratory and analytical in nature and involves both secondary and primary data.

The study has been conducted in two phases:

Phase 1 Exploratory Research: This involves studying and collecting secondary data relevant to the study which includes:

- Extensive internet research and data collection from various papers and company specific Annual Reports.
- Studying and analyzing newspapers and online articles on the changing trends in the operations with reference to companies' endeavour.

Phase 2 Conclusive Research: A detailed analysis has been done to understand the current situation with the help of:

- **Factor Analysis:** the analysis has been run on the factors which are critical in sales of Radisson Hotel Jalandhar and thus show as to why customers choose Radisson over other Hotels
- **Questionnaires:** This involved the views of various customers and staff members of the hotel. The target was to know the most suitable strategy for sales of Radisson Hotel and the reason as to why did they choose Company specific over the others.

Database

The primary data has been collected from 40 respondents including different set of customers and hotel staff. The method of investigation is the questionnaire method. The collected data has been tabulated and various responses of the respondents are analyzed with the help of software named Statistical Package for Social Sciences (SPSS) Version 17.

Statistical Technique

Factor Analysis Model

In order to achieve our objective of identifying the factors influencing sales of the company, Exploratory Factor Analysis technique has been adopted by the present study. Factor analysis is a generic name given to a class of multivariate statistical methods whose primary purpose is to address the problem of analyzing the structure of the inter relationships among a large number of variables by defining a set of common underlying dimensions, known as factors (Hair, Anderson, & Tatham, 2003). It reduces the large number of variables in to a fewer, which are more meaningful and having same characteristics. Factor analysis is a powerful technique which can not only take care of multi co-linearity but can also describe a set of independent variables adequately by smaller set of factors. The procedure of factor analysis attempts to estimate the value for the coefficient of regression where the variables are regressed upon the factors. The coefficients of regression are referred to as factor loadings in the factor analysis.

The model for factor analysis is as follows: (Hair, 2003)

$$F_1 = W_{i1}X_1 + W_{i2}X_2 + W_{i3}X_3 + \ldots\ldots\ldots\ldots + W_{ik}X_k \qquad \ldots(5)$$

Where F_i = Estimate of ith factor

$\qquad$ W_i = Weight or factor score coefficient

$\qquad$ K = Number of variables

Terminology of Factor Analysis

(a)   Factor Loading {Li (j)}:

It is a matrix which exhibits the correlation between different combinations of variables and factors. L_i (j) is the factor loading of the variable j on the factor I, where i= 1,2,3…..n and j= 1,2,3……n. Large values of loading indicates that factors and the variable are closely related. The factor loading greater than or equal to 0.45 (ignoring signs) are treated as significant and hence are to be retained; the loading below this are considered to be poor.

(b)   Communality (h_i^2):

It is the sum of the squares of the factor loadings of the variable I on all factors.

$$h_i^2 = \sum_{j=1}^{n} L_{ij}^2 \qquad \dots (6)$$

(c)   Eigen Value:

Eigen value is the sum of the squares of the factors loadings of all variables on a factor and is denoted as:

$$\text{Eigen value of the factor } j = \sum_{i=1}^{n} L_{ij}^2 \qquad \dots (7)$$

Adequacy of the Data for Factor Analysis:

Before application of factor analysis, it is obligatory to check the adequacy of the collected data which can be ensured by using following criteria:

(a)   Construction of Correlation Coefficient Matrix

The whole analytical process is based on the matrix of correlation between the variables. It is a lower triangle matrix showing all the possible pairs of correlations among the variables included in analysis. If all the correlations between variables are small and no substantial correlations greater than 0.30 are found, factor analysis is probably inappropriate (Hair, 2003, p.99).

(b)   Kaiser- Meyer - Oklin (KMO) Measure of Sampling Adequacy

KMO is an index used to examine the appropriateness of factor analysis. High value of KMO statistic, i.e. a value from 0.5 to 1.0 is an indicator of the adequacy of data for the application of factor analysis.

(c)   Bartlett's Test of Sphericity

Bartlett's Test finds the overall significance of correlation matrix and provides the statistical probability that the correlation matrix has significant correlations among the variables. This test is often used to examine the hypothesis that the variables are uncorrelated in the population i.e. population correlation matrix is an identity matrix. The test value should be significant as it indicates that the correlation matrix is not an identity matrix and there exists high degree of correlation among the variables, so the data is suitable for factor analysis (Hair, 2003, p.99).

Determination of the Method of Factor Analysis

There are two approaches to determine the Factors namely- Principal Component Analysis (PCA) and Common Factor Analysis (CFA). Both these methods are quite different from each other as these determine the factor in totally different way. While PCA transforms an original set of variables, linearly, into a substantially smaller set of uncorrelated variables on the basis of maximum variance, CFA estimates the factors on the basis of common variance only. PCA is appropriate when the primary concern is to determine the minimum

number of factors that account for maximum variance in the data. On the other hand CFA is suggested when the primary concern is to identify the underlying dimensions of factors. Out of these two PCA is more widely used as a method of data reduction. In PCA, we extract principal components from variables while CFA leads to finding the redundancy of variables.

The present study has preferred PCA over CFA because here our concern is to find minimum number of factors needed to account for the maximum portion of the variance represented in the original set of variables. The aim of the PCA is the construction of factors out of a given set of variables X_J 's (j= 1,2,3…..k) of new variables (F_i) called principal component which are linear combinations of the X_j.

$$F_1 = a_{11} X_1 + a_{12} X_2 + ……….. + a_{1k} X_k$$
$$F_2 = a_{12} X_1 + a_{22} X_2 + ……… + a_{2k} X_k$$
$$F_k = a_{k1} X_1 + a_{k2} X_2 + ……… + a_{kk} X_k \qquad … (9)$$

This method use standardized variables i.e. $Z_j = \dfrac{\left(X_j - \overline{X}_j\right)^2}{\sigma_j}$ $\qquad … (10)$

Here a_{ij} called factor loadings are worked out in such a way that the extracted principal components satisfy two conditions: (i) principal components are uncorrelated (ii) the first principal component (F_1) has the maximum variance, the second principal component (F_2) has the next maximum variance and so on.

Determination of Number of Factors

In order to summarize the information contained in the original variables, a smaller number of factors should be extracted although it is possible to compute as many as components as the number of variables. The number of factors extracted has been determined on the basis of the criterion of Eigen value or Latent Root criterion. The factors having latent root or Eigen values greater than 1 are considered significant and the factors with latent roots less than 1 are considered insignificant and are disregarded (Hair, 2003).

Factor Rotation

Factor rotation matrix is an important constituent of factor analysis. It is the matrix of the coefficients used to express the standardized variables in terms of factors. These coefficients express the correlation between the factors and the variables. A coefficient with a large absolute value shows that the variable and the factor are closely related. Although initial unrotated factor matrix indicates the relationship between the factors and the individual variables, it seldom results in the factors that can be interpreted. So it is good to apply the rotation of matrix to clarify and simplify the data structure. Since the unrotated factors may not provide a meaningful pattern of variable loadings, rotation must be done to obtain some theoretically meaningful factors (Hair, 2003). There are two methods of rotation- Orthogonal Rotation and Oblique Rotation. Orthogonal Rotation is the rotation of the factors in which the axis are maintained at the right angles. The three approaches to this type of rotation are quartimax, varimax and equimax. On the contrary in case of Oblique Rotation the axis are not maintained at the right angles and the main approaches are direct oblimin, quartimin and promax. Out of the two rotation methods the first approach i.e. Orthogonal Rotation has been used by the present study due to its superiority over the other approach because of the fact that it does not allow the factors to correlate and produce the factors which are uncorrelated (Costello and Osborne, 2005).

Varimax approach of Orthogonal Factor Rotation has been applied by the present study. This approach simplifies the columns of factor matrix and provides the maximum simplification. Where as the quatrimax approach simplifies the rows of the factor matrix and

equimax approach simplifies the rows as well as the columns. However, Varimax approach has gained wide spread acceptance and is considered to be more analytical in obtaining orthogonal rotation of factors (Hair, 2003).

Interpretation of Factors

The identification of the variables which have large loadings on the same factor leads to the interpretation of factors. Those factors which have more number and large size of loadings is considered the most significant. The interpretation should start with the first variable on the first factor and move horizontally from left to right, looking for the highest loading for that variable on any factor. When the highest loading is identified, it should be underlined if significant. After underlining all the variables on their respective factors, it is must to watch the communalities. The variables with low communalities, if loaded on any factor should be ignored. The communality shows the amount of variance that a variable shares with all other variables being considered. It's size can be treated as an index for assessing how much variance in a particular variable is accounted for by the factor solution. Communalities are considered high if they are 0.8 or greater but this is unlikely to occur in real data. Generally accepted communalities are in between 0.40 to 0.70 (Costello and Osborne, 2005). On each factor, like signs means that variables are positively related and opposite signs mean that variables are negatively related.

Factor Labeling

After the interpretation of factors, they should be labeled with appropriate label so that they can be vivid and eloquent. Affixing the labels is a meticulous step and is to be done by the researchers on the basis of their own intuition. The label should be symbolic, descriptive casual and precise and should help avoid confusion.

DISCUSSION AND RESULTS

Present study has tried to find out the factors considered by customers while visiting Radisson Hotel Jalandhar as to why they choose Radisson among the other hotels with the help of **Exploratory Factor Analysis**. The statements measured on the **likert scale** of 7 are explained as follows:-

Statement 1: Radisson Hotel Jalandhar has pleasant interior

Statement 2: Radisson Hotel Jalandhar has very attractive lobby

Statement 3: The hotel has smart and active staff

Statement 4: The furniture, fixtures and lights are enchanting and soothing.

Statement 5: The name of its chain attracts customers

Statement 6: Personal customer care is a positive feature of Radisson Jalandhar.

Statement 7: Radisson Jalandhar provides a large variety of cuisines.

Statement 8: Radisson runs on its brand value

Statement 9: There is a wide range of facilities like salon, spa , swimming pool and luxuries in Hotel Radisson

Statement 10: Radisson Hotel gives the customer feel good experience

Exploratory factor analysis technique was applied to the above data. The **correlation matrix** is given in Table 1.1 which shows the coefficients of correlation between all the variables. The correlation matrix exhibits the simple correlation among all the pairs of variables selected for the analysis. Factor analysis is said to be correctly applied if this matrix contains sufficient number of correlation coefficient values more than 0.30. From Table 1.1, it is visible that many of the variables are highly correlated. Hence, the data is deemed to be fit for factor analysis.

Table 1.1
Correlation Coefficient Matrix of Exploratory Variables

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10
V1	1.000	.520	.166	.517	.043	.293	.085	-.166	-.133	.505
V2	.520	1.000	.051	.753	.000	.199	-.121	-.276	-.035	.771
V3	.166	.051	1.000	-.208	.434	.436	-.036	-.275	.173	-.084
V4	.517	.753	-.208	1.000	.123	.055	-.111	-.274	-.190	.654
V5	.043	.000	.434	.123	1.000	-.053	.041	-.276	.219	.064
V6	.293	.199	.436	.055	-.053	1.000	.092	-.080	.229	.086
V7	.085	-.121	-.036	-.111	.041	.092	1.000	.000	.096	.128
V8	-.166	-.276	-.275	-.274	-.276	-.080	.000	1.000	-.166	-.188
V9	-.133	-.035	.173	-.190	.219	.229	.096	-.166	1.000	.043
V10	.505	.771	-.084	.654	.064	.086	.128	-.188	.043	1.000

Source: Author's own calculations based on data using SPSS (Version 17)

The significance and adequacy of data results are shown below. The high value of the **KMO** index is a symbol of adequacy. The value is considered high if it lies between 0.5 to 1. For the data used in the study the KMO statistic comes out to be 0.502 which is reasonably high to ensure the appropriateness of the factor analysis.

The significant value of **Bartlett test Chi square** indicates that the correlation coefficient matrix is not an identity matrix. The value of Bartlett's Test of Chi square for the present data is equal to 142.958 with Degrees of Freedom (df) equal to 45 and significance 0.000. So, here the overall inference is that the data is quite suitable for the application of technique of factor analysis to study the main factors considered by consumers while visiting Radisson.

Figure 1.1
Significant Values KMO and Bartlett's Test

Significance Values KMO and Bartlett's Test	
Kaiser-Meyer- Oklin Measure of Adequacy	0.502
Bartlett Test of Chi-Square	142.958
df	45
Significance	.000

Table 1.2 Total Variance Explained by Initial Eigen Values

Components	Total	% of Variations explained	Cumulative variations explained
1	**3.052**	30.52	30.52
2	**1.911**	19.11	49.63
3	**1.207**	12.06	61.69
4	**1.085**	10.85	72.54
5	0.904	9.03	81.58
6	0.702	7.02	88.60
7	0.432	4.32	92.92
8	0.421	4.21	97.13
9	0.186	1.87	98.99
10	0.101	1.00	100

Source: Author's own calculations based on data using SPSS (Version 17)

The factor analysis run on the data extracts four factors whose Eigen values are more than one and hence can be taken as the major factors. The cumulative explained variations by the four factors are 72.54 percent. Individual variations by the factors are shown in the Table 1.2.

Eigen value is the indicator of the variance associated with the factors. The factor which has Eigen value more than 1 has been taken as significant.

The perusal of Table 1.2 makes it clear, that in our study there are four components which have Eigen value more than 1 and as high as 3.052, 1.911, 1.207 and 1.085 respectively. So these four components are treated to be significant. The first component accounts for 30.52 percent variations and rest three accounts for 19.11 percent, 12.06 percent and 10.85 percent variations respectively. All the four components jointly explain 72.54 percent of variations which are sufficient enough to explain.
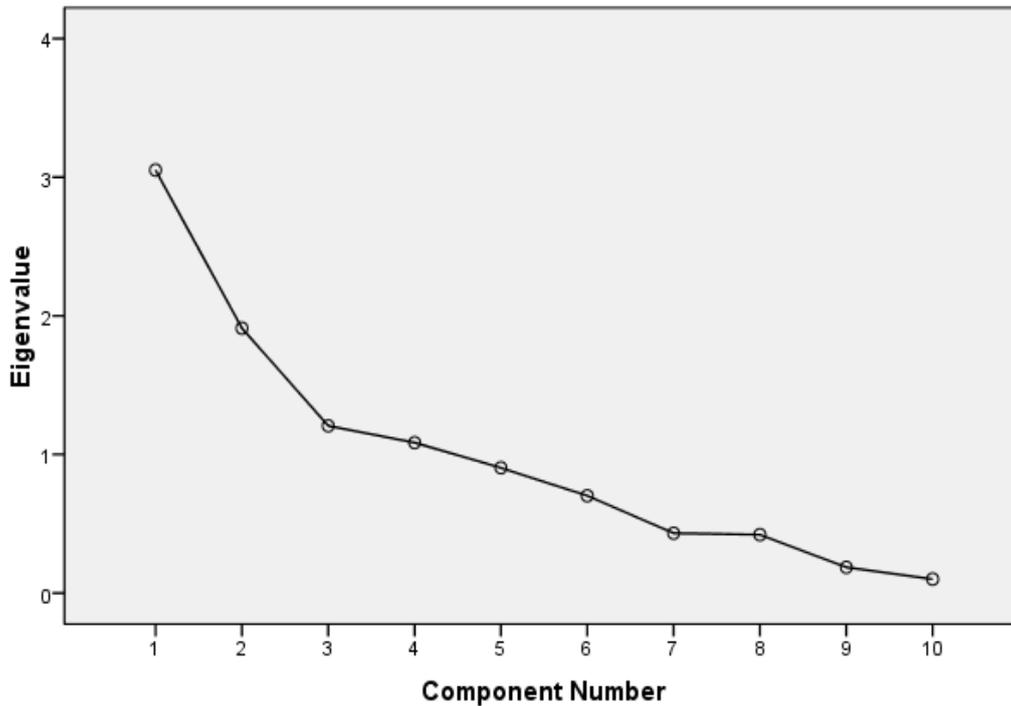
Figure 1.2
Eigen Value Graph

Table 1.3
Component Matrix (without Rotation)

Variable	Components			
	1	2	3	4
V1	.735	.020	.275	-.120
V2	.898	-.123	-.006	-.084
V3	.108	.824	.028	-.348
V4	.846	-.293	-.191	.002
V5	.160	.583	-.551	.193
V6	.281	.501	.649	-.293
V7	-.003	.136	.445	.767
V8	-.414	-.418	.407	-.084
V9	-.033	.568	.049	.384
V10	.837	-.159	.048	.276

Source: Author's own calculations based on data using SPSS (Version 17)

Table 1.4
Varimax Rotated Factor Loading Matrix

FACTORS / VARIABLES	F-1	F-2	F-3	F-4	Communalities
V1	**0.710**	-0.044	0.353	0.011	**0.630**
V2	**0.892**	0.085	0.701	-0.118	**0.828**
V4	**0.881**	0.096	-0.160	-0.164	**0.838**
V10	**0.866**	0.077	-0.063	0.210	**0.805**
V5	0.006	**0.839**	-0.014	0.041	**0.706**
V8	-0.281	**0.660**	0.058	0.028	**0.519**
V3	-0.122	0.511	**0.724**	-0.110	0.813
V6	0.158	-0.084	**0.885**	0.145	0.837
V7	0.029	-0.067	-0.009	**0.894**	0.805
V9	-0.149	0.423	0.208	**0.479**	0.473
Eigen Values*	**2.969**	**1.696**	**1.520**	**1.150**	
% of Variance Explained	**29.68**	**16.16**	**15.2**	**11.5**	
% of cumulative Variance Explained	**29.68**	**45.84**	**61.04**	**72.54**	

Source: Author's own calculations based on data using SPSS (Version 17)

Table 1.3 exhibits the principal components without rotation. However, the final results are to be seen after rotation which has been done by **Varimax Rotation**.

Table 1.4 highlights the exact results of the study. It minimizes the number of variables which have high loading on a factor and lead to good interpretation of factors.

The **communalities** show the amount of variance the variables share with each other. They are the proportion of variance explained by common factors. The size of communality is the index for assessing how much variance in a particular variable is accounted for by the factor solution. Large size of communalities indicates that a large amount of variance in a variable has been extracted by the factor solution. Communalities are considered high if they have value more than 0.40 and close to 0.70.

Factor Interpretation and Factor Labeling

The whole set of variables can be summed up into four main factors i.e. F-1, F-2, F-3 and F-4 which are sufficient enough to explain the cumulative variations to the tune of 72.54 percent which is reasonably significant. The four factors which come out to be most significant in our study are explained as follows.

Factor- 1 Ambience

This is the most significant factor which explains 30.52 percent of total variations. As many as four variables are loaded on this factor and all the variables are positively loaded. Variable V1, V2, V4 and V10 are loaded on F-1 with values as high as 0.710, 0.892, 0.881 and 0.866. . This factor reveals that the Radisson administration and staff should focus and must consider these variables most which are interiors, attractive lobbies, furniture, fixtures, lights and a feel good experience to customers.

Factor- 2 Brand

The second factor is the Brand explaining 19.11 percent variations. This means that this factor is important as factor one. Two variables are loaded on this factor. These are V5 and V8 loaded with loadings equal to 0.839 and 0.660 respectively. The interpretation is that, the customers see the chain that the hotels belongs to and visit it due to its brand value. The variables in this case are –Name of the chain and Brand Value

Factor-3 Quality of Service

The third factor which explains 12.07 percent of variations is also very important. It has the loading of again two variables which is equal to 0.724 and 0.885. These are variables V3 and V6 which respectively stand for smart and active **staff** and personal **customer care**.

Factor- 4 Facilities

The fourth factor explains 10.85 percent of variations. The two variables loaded on this factor are V7 and V9 with loading equal to 0.894 and 0.479. It means that people prefer going to this hotel as it has large variety of cuisines and luxuries like spa, bar, swimming pool etc.

Conclusion

Hotel industry is an industry which requires great ideas, great momentum and exciting strategies. A unique combination of industry-leading products, services and global best practices, added with ambitious global expansion plans, paves the way for hotels to deliver success.

The most efficient factors that lead to success of Radisson Hotel as the hotel providing best customer satisfaction are Ambience of the hotel, Brand, Quality of Service and Brand.

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About the Author:

Aaina Dhingra, MBA in Retail Management with specialization in Marketing field from Panjab University Chandigarh. She is presently serving as Assistant Professor in Apeejay Institute of Management Technical Campus, Jalandhar. She has distinguished academic record and was a gold medalist in MBA. She specializes in research area of marketing and retail in India. She has first division with distinction during her B.Tech in Computer Science and Engineering. She has commitment to her research work and has quite a few publications in national journals.