Consumer Analysis for Increasing Occupancy Rates of Tourism Hotel

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Consumer Analysis for Increasing Occupancy Rates of Tourism Hotel

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ABSTRACT

Tourism is a sector that plays an important role in the economic growth of Indonesia. Bandung as the capital of West Java province is known as the city with diverse tourism potential, both in the attractiveness of the city and surrounding natural beauty. DHR is a three stars resort hotel in the city with a strategic location. As a three stars resort hotel, DHR has been experiencing occupancy rate problems, consequently, it cannot often reach the set targets, both during high season and low season. The purpose of this study is to identify the factors of hotel performance that influences consumer staying back decision in the future. Questionnaires have been distributed to hotel guests to gather information regarding their interest and the performance assessment of the hotel services and facilities, and staying back decision in the future. Discriminant Analysis and Hypothesis Testing are used to determine which hotel performance variables will directly affect consumer staying back decision. The result of this study provide marketing strategy that should be implemented by the hotel management in order to increase its occupancy rate.

Keywords: Tourism, Marketing Strategy, Discriminant Analysis, Hypothesis Testing

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1. INTRODUCTION

DHR is a hotel in the city which located not far from the city, yet it has a beautiful natural environment. Furnished with rooms in traditional architecture of West Java, the atmosphere of the mountains, and complete facilities, the hotel has a potential as a promising tourist destination. However the hotel has been experiencing occupancy rate problems, which often cannot achieve the set targets, both during high season and low season.

To overcome the problem, hotel management have to know the level of consumers satisfaction for the hotel performance, and which factors will directly influence their staying decision. The study is conducted to provide inputs for the hotel management about things that need to be considered in relation to increase the level of consumer satisfaction.

2. LITERATURE REVIEW

2.1 Customer Satisfaction

Customer Satisfaction is the internal feelings of every individual which may reflect their satisfaction or dissastifaction resulting from the assesment of service provided to an individual in context to customer's anticipation by an organization (Leisen and Vance, 2001). Satisfied customers are produced when the service provided (as perceived by the guest) is more than that expected by the guest (Mill, 2002). When customers are satisfied, they remain loyal with the hotel and hence it will affects the purchasing behavior (Saleem and Raja, 2014). Enterprises which are able to rapidly understand and satisfy customer's needs, make greater profits than those which fail to understand and satisfy their customers (Barsky and Nash, 2003). Providing high quality services and improving customer satisfaction are widely recognized as fundamen-

tal factors boosting the performances of companies in the hotel and tourism industry (Barsky and Labagh, 1992).

2.2 Discriminant Analysis (Hair *et al.*, 2006)

Discriminant Analysis is an appropriate statistical techniques when a research problem involves a single categorical dependent variable and several metric independent variables. The results of discriminant analysis can assist in profiling the intergroup characteristics of the subjects and in assigning them to their appropriate groups.

Discriminant analysis involves deriving a variate. The discriminant variate is the linear combination of the two or more independent variables that will discriminate best between the objects in the groups defined a priori.

$$Z_{jk} = a + W_1X_{1k} + W_2X_{2k} + \ldots + W_nX_{nk} \quad (1)$$

where :

Z_{jk}: discriminant Z score of discriminant function j for object k
a: intercept
W_i : discriminant weight for independent variable i
X_{ik} : independent variable i for object k

2.3 Two-Sample Test of Hypotesis: Independent Samples (Lind *et al.*, 2008)

Hypothesis testing is a procedure based on sample evidence and probability theory to determine whether the hypothesis is a reasonable statement.

After stating the null hypothesis (H_0) and the alternate hypothesis (H_1), select a level of significance (α), and select the appropriated test statistic, then decision can be made based on decision rule.

Testing for two-independent samples are :

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_1^2/n_1 + S_2^2/n_2}} \quad (2)$$

3. RESEARCH METHODOLOGY

The study aims to determine the factors that influence consumer staying back decision. Datas are collected through the questionnaires which are compiled and based on the model of "Seven Ps" (Product, Price, Promotion, Place, Physical Evidence, People, Process). There are three groups of consumer who are involved in the research, namely a group of consumer who decided to stay back, a group of consumers who might decide to stay back, and a group of consumers groups who decide not to stay back. Proposed improvements are given based on factors that simultaneously affect all three groups and are still considered unsatisfied.

3.1 Data Collection

Consumer information is obtained through questionnaires distributed to 130 local hotel guests. Foreign hotel guests are excluded in this survey with a consideration of differences in their assesment standard. Consumer are asked to rate the performance of the hotel based on the marketing mix variables, and a decision to stay back or not.

3.2 Research Model

The model used in this study is seen as follows:

3.2.1 Consumer Performance Assessment and Interest Rate

Consumer performance assessment and interest rate for the hotel are done by using variables that are developed and based on the model 7Ps (Product, Price, Place, Promotion, People, Physical Evidence, and Process). (Zeithaml *et al*., 2013).

The variables are :
VAR01: Diversity of room type
VAR02: Adequate room facilities
VAR03: Room facilities are functioning properly
VAR04: Other supporting facilities (meeting room, beauty spa, etc.)
VAR05: Food and beverages quality
VAR06: Hotel is easily reached with the help of GPS / signpost
VAR07: Ease in terms of transportation
VAR08: Adequate parking area
VAR09: Prices fit for a three-star resort hotel
VAR10: Discount for several rented rooms
VAR11: Promotion through print media
VAR12: Room cleanliness
VAR13: Good air circulation
VAR14: Security in the hotel

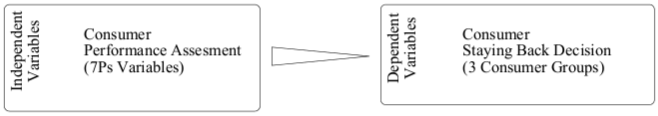


Figure 1. Research Model.

VAR15: Leisure in the hotel
VAR16: Beauty of surrounding
VAR17: Employee appearance
VAR18: Good room lighting
VAR19: Sports facilities
VAR20: Interesting interior design
VAR21: Recreational facilities
VAR22: Hotel landscaping
VAR23: Employee hospitality
VAR24: Employee responsiveness
VAR25: Ease of payment process
VAR26: Ease of booking process
VAR27: The speed of check in and check out process

The scales used for this question are:

Performance Assesment	Interest Rate
1: Very Bad	1: Very Not Important
2: Bad	2: Not Important
3: Good	3: Important
4: Very Good	4: Very Important

3.2.2 Consumer Stay Back Decision

The data of consumer decision to stay back 1s obtained through the following questions: Do you want to stay back at DHR hotel?

The scale used for this question is:
1: Not interested
2: Probably
3: Assuredly

3.3 Data Processing

3.3.1 Discriminant Analysis

This method aims is to find independent variables that significantly affect and distinguish between groups of dependent variable.

Variables used in Discriminant Analysis is as follows:
- Independent Variables consisting of 27 variables on hotel performance assessment by consumer.
- Dependent Variable is decision to stay back from the consumer.

The data will be processed by using SPSS software.

3.3.2 Hypotesis Testing

Interest rate datas and DHR Hotel's level of performance are processed together with two sample hypothesis testing to determine consumer's satisfactory level for each variable that is derived from Discriminant Analysis process.

4. RESULT

4.1 Assessing Variables' Feasibility for Discriminant Analysis

Initial Discriminant Analysis processing, will be find out any independent variables that significantly affect and distinguish between groups of consumer (not interested to stay back, probably stay back, and assuredly stay back). To assess the feasibility of independent variables used in Discriminant Analysis, tests are carried out as follows:

The results in Table 1 show that only two of independent variables (VAR02, VAR10) have Sig.value < 0.05, which means that those variables are feasible for further processing due to significantly differentiate groups of consumer stay interest. The Wilks' Lambda value show the importance of independent variable to the discriminant function (a smaller value indicate more important).

4.2 Forming Variables for Discriminant Analysis

At the next stage of datas processing it appears that the discriminant function is only formed by two variables, namely VAR10 and VAR02 (Table 2) , with significant value 0.002 and 0.001 (<0.05) (Table 3).

Table 1. Tests of equality of group means

	Wilks' Lambda	F	df1	df2	Sig.
VAR01	1.000	.000	2	127	1.000
VAR02	**.933**	**4.565**	**2**	**127**	**.012**
VAR03	.988	.747	2	127	.476
VAR04	.995	.299	2	127	.742
VAR05	.994	.361	2	127	.698
VAR06	.983	1.099	2	127	.336
VAR07	.986	.898	2	127	.410
VAR08	.984	1.062	2	127	.349
VAR09	.999	.075	2	127	.928
VAR10	**.908**	**6.447**	**2**	**127**	**.002**
VAR11	.984	1.065	2	127	.348
VAR12	.999	.068	2	127	.934
VAR13	.959	2.684	2	127	.072
VAR14	.994	.399	2	127	.672
VAR15	.998	.144	2	127	.866
VAR16	.987	.810	2	127	.447
VAR17	.999	.073	2	127	.929
VAR18	.989	.710	2	127	.494
VAR19	.999	.043	2	127	.958
VAR20	.999	.094	2	127	.911
VAR21	.993	.456	2	127	.635
VAR22	.996	.271	2	127	.763
VAR23	.968	2.104	2	127	.126
VAR24	.992	.493	2	127	.612
VAR25	.987	.810	2	127	.447
VAR26	.989	.701	2	127	.498
VAR27	.989	.674	2	127	.511

Table 2. Variables entered

Step	Entered	Wilks' Lambda			
		Statistic	df1	df2	df3
1	VAR10	.908	1	2	127.000
2	VAR02	.864	2	2	127.000

Table 3. Variables significance

Step	Wilks' Lambda			
	Exact F			
	Statistic	df1	df2	Sig.
1	6.447	2	127.000	.002
2	4.783	4	252.000	.001

4.3 Discriminant Function for Discriminant Analysis

At this stage the model will be obtained and discriminant validity of the model determined.

The results in Table 4 show that two discriminant functions are formed with Chi-square value of 18.513 and Sig. 0.001, which indicate there is a significantly differences in performance assesment for VAR02 and VAR10 between 3 groups of consumer with different staying back decision.

Table 4. Chi square

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1 through 2	.864	18.513	4	.001
2	.987	1.648	1	.199

Table 5. Canonical Discriminant Function Coefficients

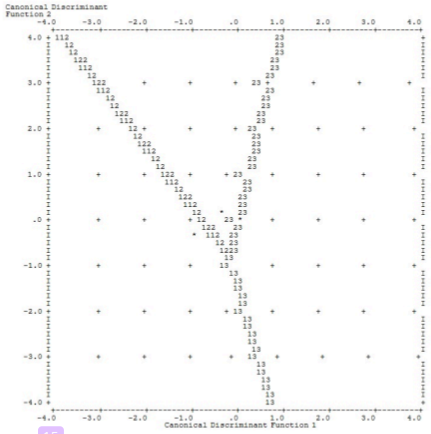
	Function	
	1	2
VAR02	.796	1.168
VAR10	1.056	-.963
(Constant)	-5.475	-.573

Unstandardized coefficients

The results in Table 5 show that two discriminant functions are formed, which are :

ZScore _1 = -5,475+(0,796VAR02)+(1,056VAR10)
ZSscore_2 = -0,573+(1,168VAR02)+(-0,963VAR10)

The two functions above can be used to predict consumers decision to stay back based on their performance assesment for VAR02 and VAR10. Higher variable value in each function shows how strong those variables in dis-



Symbols used in territorial map
Symbol Group Label
1: 1 Not Interested
2: 2 Possibly
3: 3 Assuredly
*: Indicates a group centroid

Figure 2. Territorial map.

criminating the groups. For the first function, VAR10 is stronger than VAR02, and for the second function VAR02 is stronger than VAR10.

4.4 Territorial Map for Discriminant Analysis

The Discriminant analysis results indicates that there are two variables that influence consumer staying back interest, which are VAR02 (adequate room facilities) and VAR10 (discount for several rented rooms).

Territorial map (Figure 2) showed the mapping of the boundaries of each consumer group by the Function 1 (X axis) and Function 2 (Y axis), and it can be used to predict consumer group based on their performance assessment score.

To determine the consumer group in territorial map, ZScore 1 will be plotted on the X axis and ZScore 2 will be plotted on the Y axis in the territorial map.

Example:

A consumer who assesses the performance of VAR02 Very Good (4) and VAR10 Good (3), will generate discriminant score as follows:

ZScore _1
= -5,475 + (0,796VAR02) + (1,168VAR10)
= -5,475 + (0,796 × 4) + (1,168 × 3) = 1,213

ZScore_2
= -0,573 + (1,168VAR02) + (-0,963VAR10)
= -0,573 + (1,168 × 4) + (-0,963 × 3) = 1,21

Based on territorial map, consumer is included in area 3 (assuredly stay back).

4.5 Model Validity for Discriminant Analysis

The results in Table 6 show how well the discriminant function work for each group of dependent variable. Cases classified correctly is 71,4% for Not Interested group, 25% for Possibly group, and 74,6% for Assuredly group. Overall, 54,6% of the cases are correctly classified. The lowest correct classification result is for "Possibly" group, thus resulting in a low overall classified value. Ideally, only middle value of VAR02 and VAR10 performance assesment should generate "Possibly" stay back decision, but there are some customers with a low or high assesment values who cannot decide whether to stay back or not in the future, so they choose "Possibly" answer. This consumers hesitancy will cause the low value of "Possibly" group classification result.

Table 6. Classification results

		Stay Interest	Predicted Group Membership			Total
			NI	P	A	
Original	Count	NI	5	0	2	7
		P	14	13	25	52
		A	12	6	53	71
	%	NI	71.4	0	28.6	100.0
		P	26.9	25.0	48.1	100.0
		A	16.9	8.5	74.6	100.0

NI = Not Interested P = possibly A = Assuredly.

4.6 Group Statistics

The results in Table 7 show that consumer with low stay back interest tends to have low performance assessment result. The Total of 3 groups mean values both for VAR02 and VAR10 still are less than 3 (good category), which shows that both of variables must be improve by the hotel management.

4.7 Two-Sample Test of Hypotesis

The level of consumer satisfaction is known by comparing the average rate of interest with the average performance level for each variable derived from Discriminant Analysis process.

The hypotheses are:

Ho: $\mu_1 = \mu_2$

(No difference between consumer performance level with interest level, so that visitors are satisfied)

Hi : $\mu_1 < \mu_2$

(Consumer performance level lower than interest level. so that visitors are dissatisfied)

Level of significance (α): 0.05

Formula:

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_1^2/n_1 + S_2^2/n_2}}$$

Table 7. Group Statistics

Stay Interest	VAR	Mean	Standard Deviation
Not Interested	VAR02	2.2857	.48795
	VAR10	2.5714	.53452
Possibly	VAR02	2.8462	.72449
	VAR10	2.7500	.73764
Assuredly	VAR02	3.0704	.72356
	VAR10	3.1690	.69664
Total	VAR02	2.9385	.73404
	VAR10	2.9692	.73599

Table 8. Results of Hypothesis Testing

Stay Interest	VAR	Z Value	Satisfaction
Not Interested	VAR02	-4,178	Dissatisfied
	VAR10	-1,732	Dissatisfied
Possibly	VAR02	-1,731	Dissatisfied
	VAR10	-2,394	Dissatisfied
Assuredly	VAR02	0,000	Satisfied
	VAR10	1,355	Satisfied

Region of rejection: Z < - 1,645 (taken from Normal distribution table)

The results of Hypothesis Testing in Table 8 show that consumers in Not Interested group and Possibly group feel disstastified regarding with VAR02 and VAR10, yet only consumer in Assuredly group feel satisfied about those variables.

5. CONCLUSION

The research shows that there are two hotel performance factors (adequate room facilities and discount for several rented rooms) that influence customer decision to stay back in the future. Customer decision can be predicted by using two function formed by discriminant analysis which are : ZScore _1 = -5,475+(0,796 VAR02) +(1,168 VAR10) and ZScore_2 = -0,573+(1,168 VAR02) +(-0,963 VAR10). Based on validation results, the model validity is 54,6%, therefore discriminant function formed is considered quite appropriate to classify customers based on the performance assessment.

There is a clear difference between the performance assesment results from the three group of consumers (not interested in staying back, probably staying back, and assuredly staying back), consumer with high interest to stay back ("Assuredly" group) tend to have a higher assesment value and feel satisfied regarding the two variables of hotel performance, even though the average value of performance assesment from the three groups is still slightly below the expectedly good limit.

This research suggest enhancing the level of customer satisfaction for room facilities and discount rooms in order to increase consumers in "Assuredly" group. Based of field study, several marketing strategies that can be proposed to hotel management are: provide television with good image quality and variety channel selection in all room types; improve the speed and easiness of internet connection in all rooms and hotel environments; increase the number of rooms with connecting facilities, provide special discounts for several rented rooms by classifying discounts according to the number of rented rooms. Hotel management must constantly observe the level of customers satisfaction to provide the best service quality for them. Satisfied customers most likey will stay back and increase the occupancy rate of the hotel.

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