

Determinants of Customer Satisfaction in the Hotel Industry: Application of Factor Analysis and Ordinal Logistic Model

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- The primary goal of this research is to determine factors that affect hotel guest satisfaction.
- Based on the literature review, the variables of interest for the hotel customer satisfaction regression model were identified:

VARIABLE	VARIABLE TYPE
Overall satisfaction	Likert scale from 1 to 5
Value for money	Factor velocities
Hotel ambiance	Factor velocities
Specific services	Factor velocities
Reservation services	Factor velocities
Service Quality	Factor velocities
Location	Factor velocities
Gender	Nominal variable (Female=1;Male=0)
Purpose of visit	Ordinal variable from 1 to 4
Person's age	Ordinal variable from 1 to 4

Factor Analysis

The hypotheses were set as follows:

H_0 = Correlation matrix is equal to identity matrix.

H_1 = Correlation matrix is not equal to identity matrix.

Kaiser-Meyer-Olkin measure of sampling adequacy		0.920
Bartlett's sphericity test	Approx. Chi-Square	3520.29
	Df	595
	Sig.	0.000

Total Variance Explained

Kaiser (1960) proposed dropping factors whose eigenvalues are less than one.

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.230	43.514	43.514	7.489	21.398	21.398
2	2.233	6.380	49.894	4.415	12.615	34.013
3	1.719	4.912	54.806	2.997	8.564	42.577
4	1.531	4.373	59.179	2.965	8.471	51.048
5	1.355	3.872	63.051	2.694	7.697	58.745
6	1.179	3.370	66.421	2.686	7.675	66.421

The theoretical model of hotel guest satisfaction

■ $OVERALL\ SATISFACTION_{i,t} =$

$$\alpha_i + \beta_1 VALUE\ FOR\ MONEY_{i,t} + \beta_2 HOTEL\ AMBIANCE_{i,t} + \beta_3 (SPECIFIC\ SERVICES)_{i,t} \\ + \beta_4 RESERVATION\ SERVICES_{i,t} + \beta_5 SERVICE\ QUALITY_{i,t} + \beta_6 (LOCATION)_{i,t} \\ + \beta_7 (PERSON'S\ AGE)_{i,t} + \beta_8 (GENDER)_{i,t} + \beta_9 PURPOSE\ OF\ VISIT_{i,t} + \\ + \beta_{10} ((VALUE\ FOR\ MONEY)^2)_{i,t} + \beta_{11} ((VALUE\ FOR\ MONEY)_{i,t} * (PERSON'S\ AGE)_{i,t}) + \varepsilon_{i,t}$$

Testing the functional form

H_0 = Model is specified correctly

H_1 = Model is not specified correctly

Overall Satisfaction	Coefficient	Standard error	z	P>z	[95% Confidence Interval]	
_hat	1.0106	0.1367	7.39	0.000	0.7427	1.2785
_hatsq	-0.0698	0.0428	-1.63	0.103	-0.1537	0.0141
/cut1	-8.0836	1.9258			-1.1858	-4.3091
/cut2	-3.6541	0.6064			-4.8427	-2.4655
/cut3	-0.8063	0.2857			-1.3663	-0.2463
/cut4	1.2869	0.2887			0.7211	1.8526

Assumption of parallel regression using the Brant test

For the purpose of correctly interpreting the logistic regression results, we tested the assumption of parallel regression using the Brant test.

	Chi2	df	P>Chi2
Wolfe Gould	26.55	30	0.647
Brant	8.287	30	1.000
Score	27.59	30	0.592
Likelihood ratio	33.26	30	0.311
Wald	13.53	30	0.997

Independent variables	Coefficient	Standard error	z	P>z	[95% Confidence Interval]	
Value for money	0.0000222	0.0000102	2.17	0.030**	0.00000219	0.0000422
Hotel ambiance	0.0000145	0.00000255	5.67	0.000***	0.00000947	0.0000195
Specific services	0.00000690	0.00000227	3.04	0.002***	0.00000245	0.0000113
Reservation services	0.000000588	0.00000214	0.27	0.783	-0.00000360	0.00000478
Service Quality	0.00000958	0.00000236	4.07	0.000***	0.00000497	0.0000142
Location	0.00000585	0.00000208	2.81	0.005***	0.00000178	0.00000993
Person's age						
2=Y generation	1.2416	0.9370	1.33	0.185	-0.5949	3.0781
3=X generation	1.3176	0.9456	1.39	0.163	-0.5357	3.1709
4=Baby boomers	0.7646	1.0569	0.72	0.469	-1.3069	2.8362
Purpose of visit	0.2116	0.1802	1.17	0.240	-0.1416	0.5649
Spol	0.7654	0.5533	1.38	0.167	-0.319	1.8499
<i>Value for money</i> ²	-0.0000000000204	0.0000000000138	-1.48	0.139	-0.0000000000474	0.0000000000662
Person's age*Value for money						
2=Y generation	-0.00000193	0.0000112	-0.17	0.863	-0.0000238	0.0000199
3=X generation	-0.00000869	0.000011	-0.79	0.431	-0.0000303	0.0000129
4=Baby boomers	-0.0000122	0.0000133	-0.92	0.357	-0.0000383	0.0000138
/cut1	-5.1308	1.5154			-8.1010	-2.1607
/cut2	-2.3643	1.2233			-4.7619	0.0333
/cut3	0.1941	1.1498			-2.0596	2.4477
/cut4	2.3650	1.1680			0.0757	4.6544

Level of statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Average marginal effects

- The generational group X represents a price-sensitive and cautious group.
- The value for money has the greatest effect on the satisfaction in the generational group Z.
- youth in the sample (20 years old and younger) are still financially dependent and therefore more price-sensitive.

Categories	dy/dx	Standard error	z	P>z	[95% Confidence Interval]	
1=Z generation	0.000003001	0.0178	0.00	1.000	-0.0348	0.0348
2=Y generation	0.000003222	0.0529	0.00	1.000	-0.1036	0.1036
3=X generation	0.000002222	0.0083	0.00	1.000	-0.0163	0.0163
4=Baby boomers	0.00000160	0.0011	0.00	0.999	-0.0022	0.0022

Conclusion

The real differentiators are people which contribute to building and maintaining the brand of the company.