

# Research on Price Fairness Perception of Customers in High Star Hotels

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**Abstract:** Based on the survey data of high-star hotel customers, the independent sample T-test, ANOVA and Welch test were used to analyze the differences in customer perception of price fairness among different demographic groups. The results showed that: (1) The hotel customers' perception of outcome fairness was stronger than that of process fairness, and the overall perception of price fairness was moderately higher; (2) there are no significant differences in the process justice perception, outcome justice perception and overall price justice perception between different gender groups and different age groups; (3) there is no significant difference in the perceived process justice and overall price justice among different education groups, but there is a significant difference in the perceived outcome justice; (4) there is no significant difference in the perception of process fairness and overall price fairness among customers of different monthly average income groups, while there is a significant difference in the perception of outcome fairness.

**Keywords:** price fairness perception, equity theory, high-star hotel

## 1. Introduction

The high star hotel plays an important role in promoting the high quality development of tourism in our country. In the era of mobile Internet, the popularity of online booking mode has brought new challenges to the development of star-rated hotels. How to maintain price advantage has become an urgent problem for star-rated hotels [1]. Price is one of the important factors affecting consumers' choice of products or services, and price fairness is the basis of transaction [2], while the sense of unfairness will affect consumers' satisfaction, purchase intention and complaints [3]. Therefore, the price advantage of high-star hotels stems from price fairness. Based on the fairness theory, a transaction is only fair when both parties consider that the ratio of return to input is the same [4]. In reality, the room price is set by the hotel (seller) after comparing the return and investment and within the acceptable profit margin, so the room price is fair to the hotel. But how can the customer (the buyer), who is on the other side of the transaction, judge the fairness, acceptability and fairness of the price? How to set an equilibrium price acceptable to both parties (hotel and customer)? These problems have been widely concerned by the academic circles and the hotel industry. The purpose of this study is to evaluate the price fairness perception of customers in high-star hotels and analyze the differences in price fairness perception among customers with different demographic characteristics, so as to provide references for the optimization of product mix and pricing strategy of high-star hotels.

## 2. Theoretical Basis

Fairness is a belief in the justice of outcomes, processes, and interactions [5]. Price fairness belongs to the category of fairness in the transaction relationship, so the perception of price fairness includes the subjective judgment of both price maker and price taker about the fairness of product or service price. Bolton et al believe that the perception of price justice refers to consumers' judgment on the rationality, acceptability and fairness of the result obtained or the process of obtaining the result [6]. Xia et al. believe that the perception of price fairness refers to consumers' evaluation of the rationality, acceptability and legitimacy of the difference between the seller's price and the reference party's price, as well as corresponding emotions [3]. The connotation of these two concepts is basically the same, that is, both of them discuss the perception of price justice from the perspective of consumers, and both

believe that the perception of price justice is the judgment of consumers on the rationality, acceptability and legitimacy of product prices. Throughout the relevant researches at home and abroad, scholars mainly use the equity theory to study the perception of price equity, and have obtained some valuable results. According to the research of Gong & Yang [2], positive emotions can alleviate the negative impact of price rise on the perception of price fairness and the willingness to pay, and at the same time, positive emotions can positively regulate the relationship between the perception of price fairness and the willingness to pay, while the negative emotions have no significant impact. Xu & Zhou [7] found that under the influence of emotional online word-of-mouth, consumers have a higher perception of price fairness in cultural consumption. Yang et al. [8] found in their research the impact of perceived fair intermediary differential pricing on purchase intention. Li et al. [4] found that compared with non-dynamic price, consumers' perception of price fairness and purchase intention are lower under dynamic price conditions. Zhang et al. [9] found that the degree of price dispersion has a significant negative impact on consumers' perception of price fairness, and the stronger consumers' perception of price fairness, the higher their transaction utility.

### 3. Research Method

#### 3.1 Data Collection

Through the questionnaire star platform, the customers who have stayed in high-star hotels were investigated. A total of 236 questionnaires were recovered. 214 questionnaires were valid, and the effective rate was 90.68%. The basic information of the sample is shown in Table 1.

Table 1: Sample basic information (N=236).

	Items	Number	Percentage/%
Gende	Male	83	38.79
	Female	131	61.21
	Total	214	100.00
Age	21~30 years old	64	29.91
	31~40 years old	83	38.79
	41~50 years old	56	26.17
	51~60 years old	11	5.14
	Total	214	100.00
Education	High school or technical secondary school and below	54	25.23
	College or undergraduate	36	16.82
	Master and above	124	57.94
	Total	214	100.00
Average monthly income	3000 yuan and below	33	15.42
	3001-4500 yuan	61	28.50
	4501-6000 yuan	65	30.37
	6001-7500 yuan	32	14.95
	7500 yuan and above	23	10.75
	Total	214	100.00

#### 3.2 Measure

Table 2: Measurement of price fairness.

Codes	Indicators
PF1	Compared with the quality of the hotel, the price of the hotel is fair.
PF2	Compared with the location of the hotel, the price of the hotel is reasonable.
PF3	Compared with what you pay, the service of the hotel is worth it.
PF4	Hotel services to meet your accommodation needs.
PF5	You will enjoy consistent treatment during your stay compared to previous stays.
PF6	During the check-in process, the hotel treats all guests without prejudice.
PF7	The hotel has always acted in accordance with the social code of ethics.
PF8	Hotel staff were courteous during the stay.
PF9	The hotel staff treated you with great respect during your stay.
PF10	The hotel staff was very professional during the stay.

The questionnaire consists of two parts: (1) Demographic characteristics, including gender, age,

education level and average monthly income; (2) the price justice perception scale is designed based on the fairness theory and based on relevant studies [7, 8, 10], with a total of 10 items (Table 2).

### 3.3 Data Analysis

We use SPSS25.0 to conduct reliability and validity analysis, factor analysis, independent sample T-test, ANOVA and Welch test.

## 4. Results

### 4.1 Reliability and Validity Analysis

Cronbach's  $\alpha$  coefficient of the scale was  $0.934 < 0.7^{[11]}$ , indicating good reliability of the scale. KMO value was  $0.903 > 0.8$ , and Bartlett sphericity test P value was below 0.01, indicating that the scale had good validity and was suitable for factor analysis [12].

### 4.2 Factor Analysis

According to the factor analysis results (Table 3), two components with eigenvalues greater than 1 were finally extracted, and the cumulative variance contribution rate after rotation was 75.386%.

Table 3: Rotation component matrix and variance contribution rate.

Items	Components	
	1	2
PF8	0.880	0.193
PF6	0.865	0.254
PF10	0.860	0.280
PF5	0.830	0.317
PF9	0.821	0.275
PF7	0.814	0.347
PF3	0.159	0.893
PF1	0.205	0.815
PF2	0.488	0.740
PF4	0.305	0.606
Eigenvalue	6.204	1.334
Variance contribution rate /%	46.869	28.517
Cumulative variance contribution rate /%	75.386	

Table 4: Modified rotation component matrix and cumulative variance contribution rate.

Items	Components	
	Process fairness	Result fairness
PF8	0.885	0.168
PF6	0.870	0.237
PF10	0.868	0.248
PF5	0.835	0.312
PF9	0.828	0.253
PF7	0.818	0.351
PF3	0.179	0.890
PF1	0.219	0.836
PF4	0.320	0.598
Eigenvalue	5.579	1.228
Variance contribution rate /%	50.319	25.316
Cumulative variance contribution rate /%	75.635	

Because PF2 has a factor load greater than 0.4 in both components, it is removed. The revised scale was tested again for reliability and validity, and Cronbach's  $\alpha$  coefficient (0.915) was still greater than  $0.7^{[11]}$ , indicating good internal consistency and stability of the scale. KMO value (0.896) is still greater than 0.8, and the significance probability of Bartlett sphericity test results is less than 0.01, indicating that the scale has good structural validity and is suitable for factor analysis [12]. The revised factor

analysis results (Table 4) show that the factor load of the untitled item in both components is greater than 0.4 at the same time, and the cumulative variance contribution rate (75.635%) after rotation is slightly increased.

Component 1 consists of five items, PF5, PF6, PF7, PF8, PF9, PF10, which mainly reflects the fairness of the compensation distribution process of the hotel, such as decision-making, behavior, and hospitality, and focuses on the distribution process, so it is named process fairness. Component 2 contains three items, PF1, PF3 and PF4, which mainly reflects the fairness of the quantity distribution of hotel customer compensation and focuses on the result of distribution, so it is named result fairness (Table 4).

#### 4.3 Descriptive Statistical Analysis

According to the results of descriptive statistical analysis (Table 5), the mean value of all items ranges from 3.74 to 4.00, and the standard deviation ranges from 0.571 to 0.891. The mean value and standard deviation of process fairness are 3.40 and 0.784 respectively. The mean fairness of results was 3.87, and the standard deviation was 0.859. The mean value of overall price fairness is 3.56 and the standard deviation is 0.571.

Table 5: Descriptive statistical analysis.

Items	Means	Standard deviation
PF1	3.74	0.826
PF3	4.00	0.891
PF4	3.96	0.804
PF5	3.91	0.791
PF6	3.90	0.718
PF7	3.88	0.734
PF8	3.74	0.755
PF9	3.94	0.782
PF10	3.91	0.751
Process fairness	3.40	0.748
Result fairness	3.87	0.859
Overall price fairness	3.56	0.571

#### 4.4 Independent Samples T-test

According to the T-test results of independent samples (Table 6), the process fairness, outcome fairness and overall price fairness of customers of different genders were all homogeneity of variance ( $P > 0.05$ ) and had no significant difference ( $P > 0.05$ ).

Table 6: Independent sample T-test for different sex groups.

Items		Levene test		T-test		
		F	P	t	df	P
Process fairness	Assumed equal variance	0.164	0.6861	-0.676	212	0.4997
	Suppose the variances are not equal			-0.704	196.187	0.4826
Result fairness	Assumed equal variance	0.210	0.6471	0.400	212	0.6892
	Suppose the variances are not equal			0.406	182.949	0.6849
Overall price fairness	Assumed equal variance	1.547	0.2149	-0.387	212	0.6993
	Suppose the variances are not equal			-0.379	163.377	0.7049

#### 4.5 ANOVA

##### 4.5.1 ANOVA for Different Age Groups

According to the results of the homogeneity of variance test (Table 7), the variance of process equity is uneven among different age groups ( $P < 0.05$ ), and the variance of outcome equity and overall

price equity is homogeneous among different age groups ( $P>0.05$ ). Therefore, Welch test was used for process fairness, and ANOVA was used for outcome fairness and overall price fairness. According to the results of ANOVA (Table 8) and Welch test (Table 9), there were no significant differences in process equity, outcome equity and overall price equity among customers of different age groups ( $P>0.05$ ).

Table 7: Variance homogeneity test for different age groups.

Items	Levene statistic	df1	df2	P
Process fairness	2.750	3	210	0.0437
Result fairness	0.071	3	210	0.9753
Overall price fairness	1.114	3	210	0.3445

Table 8: ANOVA for different age groups.

Items		Sum of squares	df	Mean square	F	P
Process fairness	Interclass	5.730	3	1.9100	3.5401	0.0156
	Intraclass	113.304	210	0.5395		
	Totality	119.034	213			
Result fairness	Interclass	3.241	3	1.0805	1.4752	0.2223
	Intraclass	153.808	210	0.7324		
	Totality	157.050	213			
Overall price fairness	Interclass	1.251	3	0.4170	1.2834	0.2811
	Intraclass	68.230	210	0.3249		
	Totality	69.481	213			

Table 9: Welch test for different age groups.

Items	Statistic	df1	df2	P
Process fairness	2.478	3	42.675	0.0741
Result fairness	1.582	3	45.243	0.2069
Overall price fairness	1.116	3	43.042	0.3533

#### 4.5.2 ANOVA for Different Education Level Groups

According to the test results of homogeneity of variance (Table 10), process equity, outcome equity and overall price equity were all homogeneity of variance among groups with different education levels ( $P>0.05$ ). According to the results of ANOVA (Table 11), there were no significant differences in process equity and overall price equity among customers with different education levels ( $P>0.05$ ), while there were significant differences in outcome equity ( $P<0.05$ ).

Table 10: Variance homogeneity test for different education level groups.

Items	Levene statistic	df1	df2	P
Process fairness	1.296	2	211	0.2759
Result fairness	2.582	2	211	0.0780
Overall price fairness	1.933	2	211	0.1473

Table 11: ANOVA for different education level groups.

Items		Sum of squares	df	Mean square	F	P
Process fairness	Interclass	0.358	2	0.1789	0.3180	0.7279
	Intraclass	118.676	211	0.5624		
	Totality	119.034	213			
Result fairness	Interclass	4.398	2	2.1992	3.0398	0.0499
	Intraclass	152.651	211	0.7235		
	Totality	157.050	213			
Overall price fairness	Interclass	1.203	2	0.6015	1.8589	0.1584
	Intraclass	68.278	211	0.3236		
	Totality	69.481	213			

#### 4.5.3 ANOVA for Average Monthly Income Groups

According to the results of variance homogeneity test (Table 12), process fairness, outcome fairness

and overall price fairness are all homogeneity of variance among different monthly mean income groups ( $P>0.05$ ). According to the results of ANOVA (Table 13), there were no significant differences in process fairness and overall price fairness among customers of different monthly average income groups ( $P>0.05$ ), while there were significant differences in outcome fairness ( $P<0.05$ ).

Table 12: Variance homogeneity test for different average monthly income groups.

Items	Levene statistic	df1	df2	P
Process fairness	1.3827	4	209	0.2411
Result fairness	0.6000	4	209	0.6631
Overall price fairness	0.6812	4	209	0.6057

Table 13: ANOVA for different average monthly income groups.

Items		Sum of squares	df	Mean square	F	P
Process fairness	Interclass	1.2201	4	0.3050	0.5411	0.7057
	Intraclass	117.8135	209	0.5637		
	Totality	119.0337	213			
Result fairness	Interclass	8.8367	4	2.2092	3.1152	0.0162
	Intraclass	148.2131	209	0.7092		
	Totality	157.0498	213			
Overall price fairness	Interclass	1.0633	4	0.2658	0.8120	0.5187
	Intraclass	68.4174	209	0.3274		
	Totality	69.4807	213			

## 5. Conclusions

In this study, independent sample T-test, ANOVA and Welch test were used to analyze the differences in customer perception of price fairness among different demographic groups. The results showed that: (1) The perceived fairness of outcome is stronger than the perceived fairness of process, and the overall perceived level of price fairness is moderately higher; (2) there are no significant differences in the process justice perception, outcome justice perception and overall price justice perception between different gender groups and different age groups; (3) there is no significant difference in the perceived process justice and overall price justice among different education groups, but there is a significant difference in the perceived outcome justice; (4) there is no significant difference in the process justice perception and overall price justice perception among customers of different monthly average income groups, while there is a significant difference in the result justice perception. Practical implications from the above research conclusions are include:

(1) The result fairness perception of hotel customers is stronger than the process fairness, indicating that the hardware (accommodation conditions) is better than the software (service level) of high-star hotels. In addition, the overall price fairness perception level of customers is above the average, that is, customers generally think that the hotel pricing is not fair and reasonable. Therefore, hotel managers should be fully aware of the differences between software and hardware in the fairness and rationality of hotel pricing, and should coordinate the improvement of hotel hardware and software facilities, and focus on improving software facilities through staff training and organizational culture construction.

(2) There are differences in the educational level and cognitive level of groups with different educational levels, which leads to differences in consumer demand characteristics (pursuit of quality of life, accommodation experience, etc.). The higher the educational level, the more inclined they are to pursue high-quality life and comfortable accommodation experience. The disparity of education level between senior high school or technical secondary school group and master's or above group results in significant difference in perception of outcome equity between them. Therefore, in the process of product design and pricing, decision-makers of high-star hotels fully understand the differences in consumer demand characteristics of customers with different education levels (especially between high and low education groups), design the product portfolio of high, medium and low grade rooms, and adopt high, medium and low price strategies to meet the accommodation needs of customers with different education levels.

(3) There are differences in the consumption demand characteristics (life quality, accommodation experience, etc.) of different monthly average income groups, which results in differences in the

perception of outcome equity among customers of different monthly average income groups. Therefore, in the process of product design and pricing, decision-makers of high-star hotels fully understand the differences in consumer demand characteristics of customers with different income levels (especially between high income and low incomes groups), design product portfolios of high, medium and low grade rooms, and adopt high, medium and low price strategies to meet the accommodation needs of customer groups with different income levels.

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