

INVESTIGATING PASSENGERS' PERCEIVED VALUE OF FULL SERVICE AIRLINES AND LOW-COST CARRIERS

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ABSTRACT

This study investigates the customer perceived value seen by Taiwanese passengers who flew between Taipei and Singapore regarding full service airlines and low-cost carriers. We collected a sample of passenger survey data at Taiwan Taoyuan International Airport. Five constructs, forming into customer perceived value, namely, nonmonetary cost, perception of monetary cost, reputation, service quality, and service contact are identified based on the results of factor analysis. A regression model is then adopted to measure the relationships between customer perceived value and potential determinants. Passengers from traditional airlines determined their perceived value based mostly on what they gained from the airlines. Nevertheless, passengers formed their perceived value for the low-cost carrier, Jetstar in this study, according to the trade-off between what they gave, especially the nonmonetary cost, and what they received.

Keywords: Customer perceived value, Low-cost carriers, Air passengers

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1. INTRODUCTION

Several studies have explored travellers' preference or choice of traditional and low-cost airlines. These studies determined that the selection criteria used by passengers (or specific passengers such as business travellers) using the two service types of airlines are quite different (Chiou and Chen, 2010; Forgas et al., 2005; O'Connell and Williams, 2005). However, the findings are not derived primarily from the viewpoint of customer perceived value. Customer perceived value (CPV) is an increasingly important factor for driving continued growth in air travel demand; this concept also correlates to passengers' hidden preferences, which play a key role in airlines' decisions (Yang et al., 2011).

CPV can be interpreted as the trade-off between the perceived benefits and the perceived costs of a specific good or service (Chen, 2008). CPV is different from satisfaction or service quality analyses, as these focus only on customers' perceptions (primarily of benefits) after experiencing the service. In contrast, CPV further considers customers' efforts from when they first contact the providers (i.e. the pre-purchase stage) (Sweeney and Soutar, 2001). Considering this period is vital, as it is a critical part of how passengers value what the air travel services they received are worth relative to what costs they give. Consequently, there is a need to understand passengers' perceptions regarding low-cost carriers, as well as full service airlines, based specifically on CPV. This issue should be important for both types of airline businesses to determine whether they deliver the right service value to passengers, and whether they gain a unique competitive position against other airlines.

This study investigates the CPV of Taiwanese passengers who flew between Taipei and Singapore, and determines the factors that influenced the CPV. The results contribute to the literature by examining whether the airline services the passengers received justify the airlines' efforts at various stages of the service process.

2. BACKGROUND

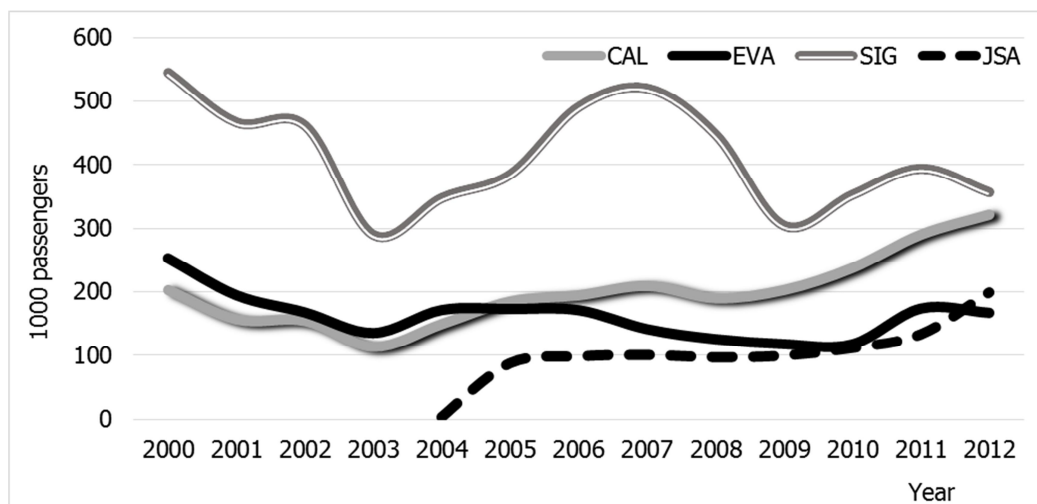
The low cost business model has matured in the airline industry in North America and Europe; however, low-cost carriers in Asia, especially in Taiwan, are still new entrants. In the study case, there are three full service airlines and one low-cost carrier² jointly operating in the air travel market from Taiwan to Singapore. Two of

² There were two new entrants in mid-2011. One is TransAsia Airways, based in Taiwan. TransAsia is considered a traditional airline. The other is Tiger Airways from Singapore, a low-cost carrier. However, this study conducted the survey at the end of 2010, preceding the advent of both new entrants; hence, only four airlines were studied.

the three full service airlines are Taiwanese: China Airlines (CAL) and Eva Airways (EVA). The third is the flag carrier of Singapore: Singapore Airlines (SIA). The only low-cost carrier is Jetstar (JSA). JSA was the first low-cost carrier in Taiwan's airline market, beginning service at the end of 2004. Figure 1 displays an annual trend of passenger traffic in the air travel market of Taiwan-to-Singapore from 2000. It shows that SIG dominated the market in last decade. However, CAL gradually caught up with SIG after financial crisis in 2009. The passenger traffic carried by JSA rapidly increased from 87,000 passengers in 2005 to 199,000 passengers in 2012, compromising approximately 15% of the Taiwan-to-Singapore air travel market. JSA is expected to continuously increase in a foreseeable future.

Nevertheless, JSA's performance in terms of punctuality does not seem to be reliable compared to the full service carriers. According to statistics announced by the Civil Aeronautics Administration of Taiwan, the average punctuality rate of JSA at Taiwan Taoyuan International Airport (TTIA) in 2011 was approximately 89%, lower than CAL, EVA, and SIA, which were 94%, 97%, and 97% respectively. Furthermore, the standard deviation of the punctuality rate of JSA approached 8%, which is also much higher than that of the three full service carriers. Although JSA draws passengers from those traditional airlines (most likely due to its lower fares), its service performance seems inferior.

Figure 1 Annual passenger traffic in the air travel market of Taiwan-to-Singapore



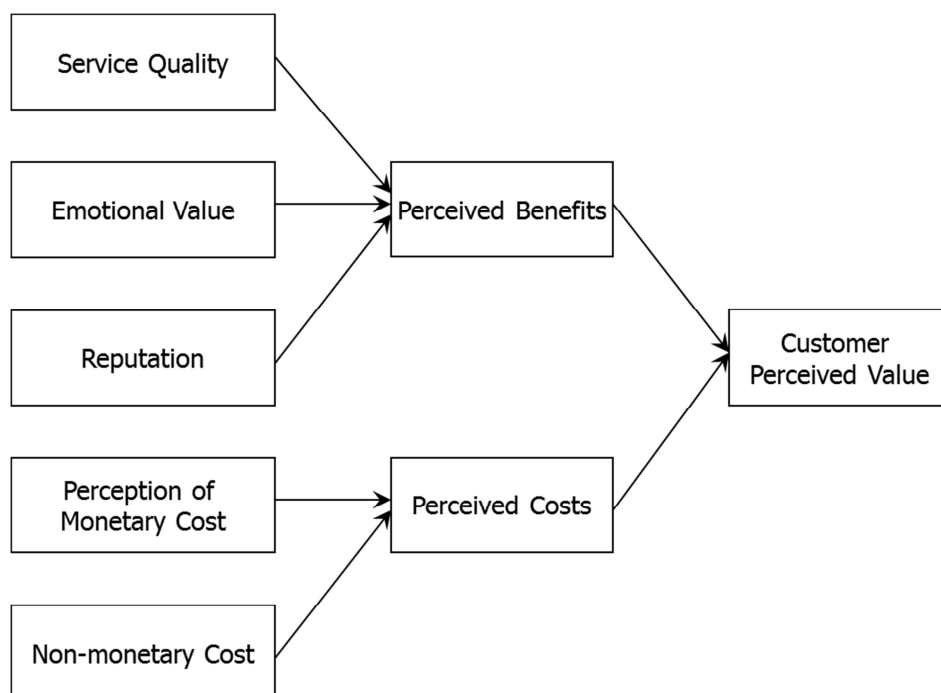
Source: Civil Aeronautics Administration, Taiwan, R.O.C. (2013)

3. METHODOLOGY

3.1 Customer perceived value

CPV has been applied extensively in analysing consumer behaviour. The most popular operationalization of CPV is that it is seen to result from the trade-off between perceived benefits and costs (Chen, 2008). In other words, CPV explains whether the products or services the customers purchased are worth their efforts at various stages of the purchase process (Sweeney and Soutar, 2001). Perceived benefits are what customers gained from service providers such as full service airlines or low-cost carriers in this study. These gains are linked to such benefits as service quality (Forgas et al. 2011; Kim and Lee, 2011), pleasant or emotional value when contacting service attendants (Chen, 2008; Forgas et al. 2011; Sweeney and Soutar, 2001), and the brand or reputation of the service providers (Petrick, 2002). Costs consist of monetary cost and non-monetary cost (Chen, 2008; Chiou and Chen, 2010). Monetary cost is the exact money the customers paid for the service (i.e. ticket price). This study focuses on analysing passengers' perceptions of how expensive (or cheap) the ticket fare is rather than comparing the actual price of the ticket (Mikulić and Prebžac, 2011; Petrick, 2002). Non-monetary cost represents customers' efforts or sacrifices in order to use the service (Chen, 2008; Forgas et al. 2011; Petrick, 2002). For instance, passengers may expend great effort on searching flight information, spend a considerable amount of time reserving a seat, or modify their originally planned itinerary to use a particular airline. A conceptual framework of customer perceived value for this study is proposed in Figure 2.

Figure 2 Conceptual Framework of Customer Perceived Value



3.2 Survey set up and questionnaire design

The survey was conducted using a face-to-face questionnaire interview. Taiwanese passengers leaving for Singapore were intercepted at TTIA. The survey questionnaire consisted of three parts. The first part sought information related to trip characteristics of passengers, including the airlines used, experiences of flying the same airlines, purposes of the trip, places of ticketing, and travel cost. The second part obtained perceptions related to benefits and perceived costs regarding the airline for this trip. Perception benefits reflect airline image, service quality, and service contacts with employees. Perception costs include perception of monetary cost and nonmonetary cost. Table 1 lists the 'perception variables' that gauge the perceived benefits and costs of the airlines the passengers used. A seven-point Likert scale ranging from 'Strongly agree' (= 7) to 'Strongly disagree' (= 1) is used for this purpose. The last part anchors personal backgrounds, including gender, age, monthly income, and vocation.

3.3 Survey sample characteristics

The survey targeted Taiwanese passengers flying from Taipei to Singapore. The survey received 567 responses. In the sample, 133 respondents flew CAL, 132 flew EVA, 154 flew SIA, and 148 respondents flew JSA. Moreover, more than 70% of the sample had flew the same airlines in a past year. Fewer than 5% of the respondents were traveling abroad for the first time. The sample characteristics are summarised in Table 2. With respect to trip characteristics, approximately 60% and 55% of the respondents flew CAL and EVA, respectively, for a business purpose, while 66% and 97% of the respondents flying SIA and JSA, respectively, travelled for a non-business purpose. Approximately 85% of JSA respondents ticketed their flights via the Internet; however, over 50% of the respondents flying full service carriers bought their tickets through travel agents.

Table 1 Perception variables

Construct/Concept	Source
Service quality: service process is smooth and comfortable	
The check-in service of ABC ¹ is quick and assured	Chiou and Chen (2010); Forgas et al. (2010); Kim and Lee (2011)
The boarding operation of ABC is efficient	
The in-flight service of ABC satisfies my needs	
The baggage service of ABC is reliable	
I am satisfied with the service quality of ABC	
Service contact: service attitude of employees and relations with passengers	
The employees of ABC are kindly	Forgas et al. (2010)
The employees of ABC always take care of my needs	
The employees of ABC are glad to help me	

I am familiar with the employees of ABC	
Reputation: passengers' evaluation on airline's image and reliability	
I always trust the service of ABC	Chiou and Chen (2010); Forgas et al. (2010)
I always have positive attitude toward ABC	
I am not worried about the safety records of ABC	
The reputation of ABC is good	
Perception of monetary cost: feelings of the ticket fare	
The fare of ABC is expensive	Forgas et al. (2010); Mikulić and Prebežac (2011)
The fare of ABC is not reasonable	
Non-monetary cost: time spending on buying the airline service	
I spend a lot of time to seek information of flight and fare of ABC ¹	Forgas et al. (2010)
I spend a lot of time to confirm the space	
I change my schedule to fit the flight of ABC	

¹: ABC indicates the name of the airline passengers used.

Table 2 Sample characteristics

Characteristics	CAL		EVA		SIA		JSA	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Gender								
Male	71	53.4	81	61.4	73	47.4	58	39.2
Female	62	46.6	51	38.6	81	52.6	90	60.8
Age (years old)								
< 30	43	32.3	24	18.2	44	28.6	81	54.7
31 – 40	34	25.6	39	29.6	49	31.8	45	30.4
41 – 50	37	27.8	32	24.2	36	23.4	15	10.1
> 51	19	14.3	37	28.0	25	16.2	7	4.8
Monthly income (NTS)								
< 20,000	30	22.6	18	13.6	20	13.0	56	37.8
20,001 – 35,000	16	12.0	21	15.9	11	7.1	30	20.3
35,001 – 50,000	32	24.1	24	18.2	32	20.8	44	29.7
50,001 – 65,000	23	17.3	18	13.6	25	16.2	12	8.11
65,001 – 80,000	4	3.0	10	7.6	18	11.7	1	0.7
80,001 – 95,000	6	4.5	15	11.4	22	14.3	0	0.0
> 95,001	22	16.5	26	19.7	26	16.9	5	3.4
Vocation								
Manufacture	34	25.6	33	25.0	23	14.9	15	10.1
Business	44	33.1	48	36.4	68	44.2	40	27.0
Public servant/Education	9	6.8	9	6.8	18	11.7	9	6.1
SOHO	4	3.0	10	7.6	8	5.2	8	5.4
Student	17	12.8	13	9.8	18	11.7	55	37.2
Other	25	18.8	19	14.4	19	12.3	21	14.2
Total Sum	133	100.	132	100.	154	100.	148	100.

4. RESULTS

4.1 Descriptive statistics analysis

Table 3 presents the mean and standard deviation of each perception variable by airline. The table shows that the means of the variables regarding 'Service quality',

'Service contact', and 'Reputation' perceived by JSA respondents are lower than the means of the corresponding variables perceived by the respondents from the three full service carriers, indicating that the benefits the passengers received from JSA seemed less than what passengers gained from full service carriers. Furthermore, JSA respondents also perceived high scores on the variables associated with 'Perception of Monetary cost'. This response implies that passengers do not perceive JSA's low-cost position, even though it positions itself as a low-cost carrier.

This study also surveyed one additional question regarding the general perception of customer value of the airlines the respondents used. The question is 'The airline I used is worth the money'. The survey shows that JSA respondents gave a low score on this question, meaning that although JSA offers passengers low fares, the services the respondents received are still not worth this fare. These outcomes are not consistent with the findings of Mason (2002), which showed that more than 80% of corporate travel managers and 75% of business travellers think that low-cost airlines do offer value for the money, while the full service carriers do not.

4.2 Factor analysis

The factor loadings of the perception variables, applied by the principle factors method and after orthogonal varimax rotation, are presented in Table 4. The factor analysis suggests that five-factor is the best solution and explains 81.9% of the total variance. However, two perception variables were excluded in the analysis due to low factor loadings. These variables are 'I am satisfied with the service quality of the airline I used' and 'I am familiar with the employees of the airline I used'.

Table 4 shows that the first factor is marked by high loadings (in italics) on nonmonetary costs such as time spent on space confirmation and changes of schedule to fit the flight, while the second factor is marked by high loadings on the perception of monetary cost; i.e., the ticket fare is expensive, and the ticket fare is unreasonable. The third factor consists of four variables associated with reputation. The fourth factor comprises four perception variables concerning service quality. The fifth factor is marked by high loadings on the variables regarding service contact. Furthermore, the value of Cronbach's alpha for each factor is calculated and suggests that the reliability of each factor is acceptable (i.e. above 0.75).

Table 3 Descriptive statistics of perception variables

Variables	CAL		EVA		SIA		JSA		ANOVA	
	M	S	M	S	M	S	M	S	F	p
Service quality										
The check-in service of ABC ¹ is quick and assured	5.20	1.19	5.52	0.96	5.77	1.23	5.13	1.18	2.87	0.04
The boarding operation of ABC is efficient	5.34	1.09	5.38	1.00	5.60	1.22	5.13	1.15	1.17	0.32
The in-flight service of ABC satisfies my needs	5.51	1.08	5.40	1.06	5.62	1.22	4.29	1.07	10.37	0.00
The baggage service of ABC is reliable	5.56	1.10	5.43	1.13	5.63	1.14	4.58	0.89	6.99	0.00
I am satisfied with the service quality of ABC	5.56	1.03	5.55	1.01	6.00	0.95	4.90	1.04	7.77	0.00
Service contact										
The employees of ABC are kindly	5.51	1.21	5.35	1.10	5.35	1.17	4.68	1.22	3.36	0.02
The employees of ABC always take care of my needs	5.22	1.19	5.25	1.03	5.31	1.18	4.65	1.20	2.46	0.07
The employees of ABC are glad to help me	5.24	1.22	5.43	1.03	5.38	1.22	4.61	1.20	3.51	0.02
I am familiar with the employees of ABC	4.51	1.57	5.13	1.44	4.21	1.89	3.74	1.53	4.54	0.00
Reputation										
I always trust the service of ABC	5.37	1.04	5.50	0.93	5.92	1.22	4.87	1.09	6.29	0.00
I always have positive attitude toward ABC	5.17	1.02	5.53	0.96	5.98	1.15	4.84	1.10	8.74	0.00
I am not worried about the safety records of ABC	4.41	1.55	5.65	1.00	6.25	0.88	5.06	1.00	21.71	0.00
The reputation of ABC is good	4.80	1.31	5.52	1.01	6.23	0.92	4.74	1.18	17.74	0.00
Perception of monetary cost										
The fare of ABC is expensive	4.46	1.36	3.68	1.44	4.33	1.57	4.90	1.62	1.21	0.01
The fare of ABC is not reasonable	4.56	1.61	3.68	1.42	4.67	1.38	4.77	1.71	1.39	0.01
Nonmonetary cost										
I spend a lot of time to seek information of flight and fare of ABC	2.80	1.79	3.75	1.68	2.58	1.80	2.90	1.72	3.65	0.01
I spend a lot of time to confirm the space	2.90	1.69	3.50	1.54	2.48	1.65	2.68	1.45	3.27	0.02
I change my schedule to fit the flight of ABC	3.15	2.12	3.30	1.74	2.73	1.67	3.32	1.72	1.04	0.38

¹: ABC indicates the name of the airline passengers used. M = mean; S = Standard deviation. F = F statistics; p = p value ($\alpha=0.05$).

Table 4 Factor analysis

Variables	Factors				
	1	2	3	4	5
I spend a lot of time to confirm the space	-0.920	-0.080	-0.018	0.003	-0.030
I change my schedule to fit the flight of ABC ¹	-0.811	-0.335	-0.076	-0.094	-0.113
The fare of ABC is expensive	-0.101	-0.944	-0.078	-0.067	-0.093
The fare of ABC is not reasonable	-0.183	-0.928	-0.070	-0.048	-0.142
I always trust the service of ABC	0.060	0.042	0.795	0.193	0.284
I always have positive attitude toward ABC	0.011	0.093	0.809	0.195	0.291
I am not worried about the safety records of ABC	0.021	0.091	0.793	0.201	0.196
The reputation of ABC is good	0.077	0.093	0.766	0.284	0.221
The check-in service of ABC is quick and assured	0.028	0.071	0.545	0.641	0.201
The boarding operation of ABC is efficient	0.035	0.070	0.376	0.772	0.239
The in-flight service of ABC satisfies my needs	0.040	0.092	0.205	0.662	0.392
The baggage service of ABC is reliable	0.085	0.103	0.226	0.614	0.501
The employees of ABC are kindly	0.072	0.134	0.261	0.257	0.810
The employees of ABC always take care of my needs	0.051	0.120	0.231	0.216	0.845
The employees of ABC are glad to help me	0.056	0.132	0.273	0.149	0.843

¹: ABC indicates the name of the airline passengers used.

Factors 1 to 5 refer to nonmonetary cost, perception of monetary cost, reputation, service quality, and service contact, respectively.

4.3 Regression analysis

The five constructs, two representing perceived costs and the other three relating to perceived benefits, are then used as independent variables to regress with the general perception of customer value (i.e. 'The airline I used is worth the money') for each airlines. The ordinary least square technique was adopted to estimate the regression relationships. Table 5 reports the results of the regression models by airlines. A post diagnostic was also did using residual-versus-predictor plot to see whether any heterogeneity effect is existed among the independent variables (i.e. the five constructs). The plots, which were not reported here due to space limitation, indicated that the residuals of each regression were randomly (or approximately randomly) distributed on each construct. That is to say, the heterogeneity effects

among the independent variables can be reasonably ignored.

According to Table 5, two variables related to perceived costs were both not estimated to have expectedly negative impacts on customer perceived value in each regression models. This might be because that certain of the variables were correlated with each other³. However, after removing such variables which were highly correlated with others from the regression models, the estimated results were still not significantly improved (i.e. especially to the perceived cost variables). Hence, the five variables were kept altogether in the final models. Table 5 shows that one of the variables linked to the perceived costs, 'Nonmonetary cost', is estimated to be statistically significant in the JSA regression model only. This finding implies that demonstrably reducing passengers' efforts in the period of information seeking, space confirmation, or changes of trip schedule can enhance the customer perceived value for the low-cost carrier.

Table 5 Regression analysis

Variable	Dependent variable = Customer perceived value			
	CAL	EVA	SIA	JSA
Constant	0.226 (0.421)	-0.334 (-0.780)	0.900 (1.544)	0.907 (1.358)
Perceived cost				
Perception of monetary cost	0.055 (0.996)	-0.068 (-1.286)	-0.033 (-0.579)	0.067 (1.255)
Nonmonetary cost	-0.070 (-1.293)	0.037 (0.808)	-0.002 (-0.036)	-0.116** (-2.168)
Perceived benefits				
Reputation	0.193* (1.890)	0.047 (0.462)	0.530*** (5.734)	0.114 (0.953)
Service quality	0.352*** (3.245)	0.372*** (2.861)	0.096 (0.858)	0.442*** (3.665)
Service contact	0.434*** (4.692)	0.658*** (7.283)	0.204** (2.081)	0.293*** (3.151)
Number of observation	133	132	154	148
R-square	0.545	0.738	0.458	0.414
F-statistics	30.375***	71.145***	25.019***	20.035***

*: $p < 0.1$; **: $p < 0.05$; ***: $p < 0.001$

³ The five constructs were originally independent to each other as they were generated using factor analysis with orthogonal rotation. After segmenting the variables by airlines, certain of the variables were becoming correlated with each other. We have checked the correlation coefficients among the five constructs of each airlines and found that the coefficients were all less than 0.6.

In both the CAL and EVA regression models, two of the variables regarding the perceived benefits, 'Service quality' and 'Service contact', are estimated to be significant. Moreover, according to the magnitudes of the variables' coefficients, the CPV for these two traditional airlines is dominated by 'Service contact' higher than 'Service quality'. With respect to the SIA regression model, the variables related to perceived costs are estimated to be negative; however, they are far from significant at α -level of 0.1. Two variables corresponding to the perceived benefits, 'Reputation' and 'Service contact', are estimated to be statistically significant, and the marginal effect of 'Reputation' on CPV is higher. This finding shows that SIA has successfully achieved a good reputation with passengers.

Finally, in the JSA regression model, besides 'Nonmonetary cost', 'Service quality' and 'Service contact' are also estimated to be statistically significant. Different from the cases of CAL and EVA, the customer perceived value for JSA is highly determined by 'Service quality', as it has a higher marginal effect.

5. CONCLUDING REMARKS

This study investigates airline passengers' perceived value of low-cost carriers and traditional full service airlines. Perceived value is not like service quality analysis, which only focuses on passengers' perceptions after experiencing services; it further considers passengers' efforts in the pre-purchase stage. Our analysis found that, although JSA positions itself as a low-fare airline and truly attracts a substantial amount of passengers (ref. Fig. 1) in the Taiwan-to-Singapore air travel market, respondents still perceived higher monetary cost but fewer benefits. In other words, Taiwanese passengers perceive that using JSA might not be worth the money. This finding differs from some previous studies such as Mason (2002) and Saha and Theingi (2009).

The determinants of CPV of traditional airlines mostly relate to perceived benefits; however, the important factors influencing the perceived value of the low-cost carrier are 'Nonmonetary cost', 'Service quality', and 'Service contact'. This finding implies that Taiwanese passengers' perceived costs of the full service airlines, regardless of whether they are monetary or nonmonetary, might not be crucial to determining their perceived values; instead, the passengers place more value on what they gain, i.e. perceived benefits, to form the perceived value. Just like SIA, she has established

good reputation in passengers' mind and delivered delicate services to passengers. Hence, even though SIA is perceived costly compared to CAL and EVA, SIA still dominates the Taiwan-to-Singapore air travel market in last decade. In contrast, JSA needs to pay more attention to reducing passengers' perceived costs, such as time spent on information seeking or space confirmation and to improve passengers' perceived benefits, such as service quality, at the same time.

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