

Evaluating the Perceived Value of Service Delivered by Taiwanese Airlines in the Domestic Market

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ABSTRACT

The concept of customer value analysis (CVA) suggests that customers choose the brand that gives them the greatest perceived value in terms of the benefits and costs of a given good or service. As the world's airlines struggle to compete in a deregulating, liberalizing, post-9/11 world, the perceived value of the service provided by a given airline has received increasing attention. This study examined customer perceptions in the Taiwanese domestic market, concluding that brand image and perceived price have equal influence on perceived customer value. For Taiwanese carriers, the key factor in customer value was low perceived costs. Premium branding effects were not observed.

Keywords: service quality, consumer perceptions, airlines, CVA

1.0 Introduction

The deregulation and liberalization of domestic and international markets that began in 1978 with the US Airline Deregulation Act and the subsequent US push for Open Skies forced the high cost-high service traditional airline to compete with a growing number of new entrants, many of them with substantially lower cost structures than legacy carriers [Rhoades, 2003]. While these carriers struggle to reduce costs, they must also consider the effect on customer service and brand image, factors that mattered a great deal in the old regulated aviation system.

The concept of customer value analysis (CVA) suggests that customers choose the brand that gives them the greatest perceived value in terms of the benefits and costs of a given good or service [Gale and Woods]. The benefits derived from a product include such aspects as functionality, reliability, and image. The costs include both monetary costs of purchase and non-monetary costs such as the time and energy invested in selection. This study reports the results of a survey of passengers on three major routes in the Taiwanese air market and uses structural equation modeling to examine the relationship between perceived benefits and costs for passengers in the Taiwanese domestic air market.

2.0 Service Quality

There is general agreement in the literature that a service (as distinguished from a product) is an activity or series of activities that is 1) usually intangible, 2) often associated with but distinct from a product, and 3) most often delivered in the presence of the customer [Gronroos, 1990]. There is far less agreement about what constitute quality in a service context. Two of the most widely cited approaches to service quality are the SERVQUAL [Parasuraman et al, 1988] and SERVPERF [Cronin and Taylor, 1992]. The SERVQUAL approach suggests that customers evaluate service quality by comparing their perceptions of service with their expectations. Service quality is the gap between perceptions and expectations on a series of dimensions ranging from reliability and credibility to communication. The SERVPERF framework eliminates the role of expectations to suggest that service quality is simply an evaluation of the perceived performance of the provider. There has been considerable debate on the relationship between service quality and customer satisfaction with some researchers suggesting that customer

satisfaction precedes service quality [Bitner, 1990] while other research suggest it leads to satisfaction [Parasuraman et al, 1988]. Some researchers suggest there is no relationship at all [Fornell, 1992].

Perceived price and perceived value are believed to play an important role in customer evaluations of quality as customers assess the utility of what is given versus the monetary and non-monetary costs [Anderson and Sullivan, 1993; Bolton and Drew, 1991]. Varki and Colgate [2001] report that price perceptions have a stronger influence on customer value perceptions than on customer perceptions of quality. Perceived value is the result of customer trade-offs between costs and benefits and is influenced by customer tastes and characteristics [Anderson and Sullivan, 1993; Bolton and Drew, 1991; Nguyen and LeBlanc, 1998]. The image (or brand) can also affect customer expectations and perceptions of quality [Dowling, 1994]. Andreassen and Lindestad [1998] have noted that image (or brand) may have a greater impact when service attributes are difficult to evaluate. Research suggests that the more favorable the image, the more likely it is that customers will assume that the services tendered are high quality and worth the price [Dowling, 1994] and that repeat and trial users will be drawn to the service [Connor and Davidson, 1997].

Shostack [1977] has asserted that airline service quality is intangible-dominant, although Schemenner [1986] has noted that airlines, by and large, provide a standardized service with high capital intensity and relatively low customer ability to affect the nature of the service delivered. Witz and Johnson [2003] have suggested based on their study of Singapore Airlines, one of the most highly ranked airlines in the world, that customers compare airlines within the industry and to other industry quality leaders and expect a superior experience and good value.

The purpose of this research was to examine the role of service quality, brand image, and perceived cost on perceived customer value and the willingness of customers to purchase services in the domestic airline market of Taiwan. Structural equation modeling and customer value mapping were used to assess the motivation and behavior of Taiwanese domestic air travelers.

3.0 Methods and Data

The conceptual framework is shown in Figure 1 where a consumer's willingness to buy is assumed to be influenced by his/her perceived value toward a specific service or good. The perceived value in turn is affected by service quality, brand image, and perceived cost. The main objective of this research is to investigate the relationship among these four variables, which is the gray area of Figure 1. Recognizing that all four variables (service quality, brand image, perceived cost, and perceived value) are latent, we employed the structural equation model (SEM) to conduct a path analysis that addresses the relationships among benefits and costs perceived by passengers. The estimated SEM was then used to calculate the customer value delivered by airlines that serve Taiwanese domestic air market. A standard path analysis and the SEM are illustrated in figure 2. In Figure 1, it is assumed that service quality has positive influences on brand image and perceived value. Brand image also has positive influences on perceived value. On the other hand, perceived cost is assumed to negatively affect perceived value.

In Figure 2, ξ and η are latent variables, with ξ_1 and ξ_2 being independent latent variables and η_2 being the dependent latent variable. According to the definition, η_1 is both an independent variable and a dependent variable. Both vectors \mathbf{x} and \mathbf{y} are measurement indicators used to represent specific latent variable. Additionally, service quality and perceived cost are equivalent to ξ_1 and ξ_2 , brand image is equivalent to η_1 , and perceived value is equivalent to η_2 . The LISREL (Linear Structural Relations) [Joreskog and sorbum, 1993] was used to estimate coefficients λ , γ , and β , where λ is the coefficient between a latent variable and a measurement indicator, γ is the coefficient between an independent latent variable and a dependent latent variable, and β is the coefficient between two dependent latent variables.

Passengers in three flight routes (Taipei-Kaohsiung, Taipei-Kinmen and Taipei-Makung) of the Taiwanese domestic market were surveyed to obtain their perceptions toward the services provided by different airlines. Taipei is the largest city in Taiwan and is located in the north part. Kaohsiung is the second one in terms of population and is located in southern Taiwan. Both Kinmen and Makung are located in offshore islands. All three flight routes have a flight time about one hour. In addition to some basic information such as personal characteristics and trip attributes, the questionnaire includes information related to service quality, brand image, perceived costs and perceived value. Surveyed data were then used the estimated parameters specified in the SEM.

A sample of 435 respondents was surveyed in the Taipei-Kaohsiung route. In the Taipei-Kinmen route, 124 respondents were surveyed. Only ninety-eight passengers were surveyed in the Taipei-Makung route. The sampling strategy was based on the market share of each flight route. Due to the relative small

number of sample size in either the Taipei-Kinmen or Taipei-Makung route, both samples were combined to estimate a model labeled as ‘Taipei-offshore route’ in the following section.

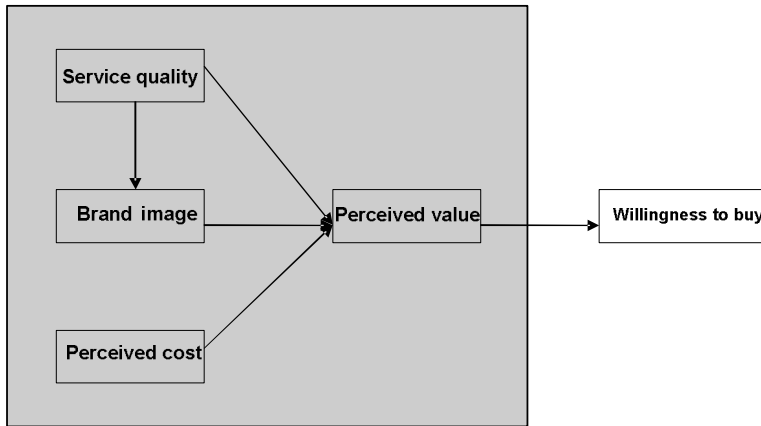


Figure 1 Conceptual framework

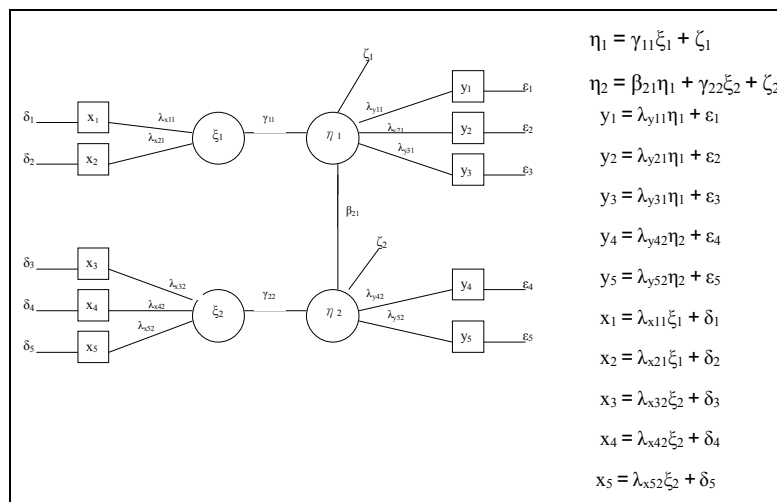


Figure 2 A path analysis and the Structural Equation Model

4.0 Results and Discussions

The estimation results illustrated in Figures 3 and 4 indicate that all relations are positive except the one between perceived cost and perceived value, which is identical to our assumption. The direct influence of service quality on perceived value, however, is not statistically significant. These results imply that brand image and perceived cost directly influence the customer’s perception toward the value delivered by a specific airline. The influence of service quality is through brand image. That is, the service quality of a specific airline has positive influences on her brand image, which in turn positively affects her value perceived by customers. Costs, on the other hand, negatively affect customer values. Most of the estimated coefficients of the measurement indicators (i. e., λ) are statistically significant. Since the purpose of this research is to investigate relations among latent variables, the estimation results of the measurement indicators are not shown in Figures 3 and 4 for simplicity.

Results in Figures 3 and 4 are also summarized in Table 1. Since all coefficients are standardized, their absolute values can be used to compare the relative strengths of the influences. For example, in the Taipei-Kaohsiung model the sequence of the magnitudes are $\gamma_{11}(0.76)$, $\beta_{21}(0.51)$, and $\gamma_{22}(0.49)$. This implies that the influence strength of an airline’s brand image on the delivered value perceived by customers is higher than the influence strength of cost incurred by customers, though the difference is

nominal ($0.51/0.49=1.041$). On the other hand, the influence of service quality on brand image ($\gamma_{11}=0.76$) is much higher than the previous mentioned two influences (β_{21} and γ_{22}).

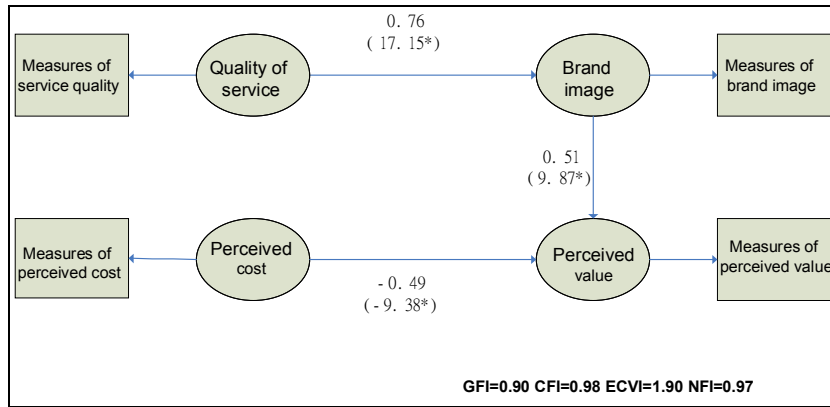


Figure 3 The estimation results of Taipei-Kaohsiung Route

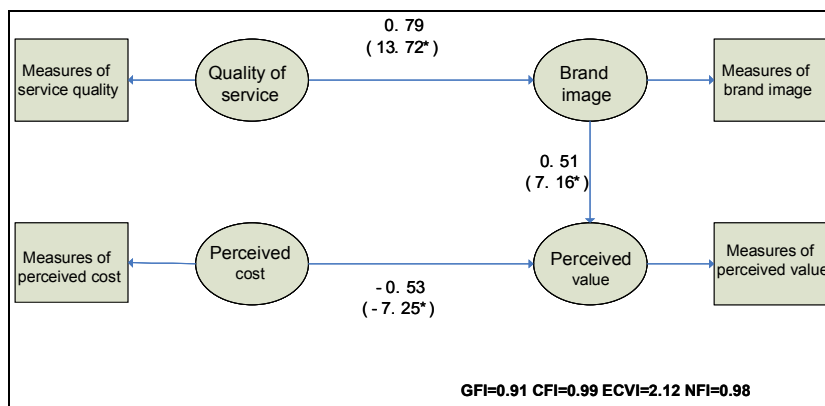


Figure 4 The estimation results of Taipei-offshore Route

Table 1: The estimations results of two models

path	Taipei-Kaohsiung Route	Taipei-Offshore Route
	standardized coefficient (t value)	standardized coefficient (t value)
brand image \rightarrow perceived value (β_{21})	0.51 (9.87)	0.51 (7.16)
perceived costs \rightarrow perceived value (γ_{22})	-0.49 (-9.38)	-0.53 (-7.25)
service quality \rightarrow brand image (γ_{11})	0.76 (17.15)	0.79 (13.72)

The fact that the influence of brand image on perceived value is equivalent to the influence of perceived cost implies that an airline can promote her brand image, raise her ticket prices and obtain premium. It is also possible that a customer would like to choose an airline with low brand image and low ticket prices. Additionally, the high influence of service quality on brand image confirms the well-known principle that an increase in service quality will definitely improve a company's brand image. The finding in the Taipei-Kaohsiung route is shared by the Taipei-offshore route except that the influence of perceived cost on perceived value in the second route is higher than the influence of brand image. The difference, again, is marginal ($0.53/0.51=1.039$). While both models indicate that there is an equivalent influence of perceived cost and brand image on the customer's perceived value, it is interesting to

investigate whether or not an airline can use the premium branding strategy to obtain a higher price in the Taiwanese domestic air market.

Tables 2 to 4 list the customer values delivered by airlines in the three previously mentioned flight routes. While the measurement scales were arbitrarily defined by the researcher, only the relative values among competing airlines are meaningful. Therefore, the relative values of brand image and perceived, respectively, on the base of F Airlines were calculated and list in Tables 2 to 4. Those values were then used to compute the relative customer perceived values for each airline, defining as the division of brand image by perceived cost. As shown in the tables, M Airlines performs the best in terms of the perceived value in the Taipei-Kaohsiung route, F Airlines in the Taipei-Kinmen route, and T Airlines in the Taipei-Makung route. A further investigation reveals a very interesting phenomenon. The major factor contributing those airlines to perform the best in each flight route is their relative low perceived cost in each respective route. It implies that those airlines do not use the premium branding strategy to obtain a higher perceived value by customers but they seem to use the strategy of a lower price.

The identical results in all three investigated flight routes might represent the market situation in the Taiwanese domestic air market, since the three routes have a wide variety, from the point of view of sampling. This may result from two specific features of the market. First, all flight routes have a flight time less than one hour. In such a short period, it is really hard for any airline to apply a successful service differentiation strategy and transfer this image to the public. The second one is related to the first one. Since the flight time is short, the air service is competing with other modes in most of the routes. Therefore the pricing strategy is not considered only within the airline industry. It has to be put in the range of the whole inter-city transportation system. These two features are not under the scope of the present research and merit future investigation.

Table 2: Customer Value Analysis (Taipei-Kaohsiung)

Items	Airlines			
	F	T	U	M
Relative value of brand image	1.000	0.993	0.979	0.951
Relative value of perceived cost	1.000	0.954	1.019	0.898
Relative value of perceived customer value	1.000	1.040	0.961	1.060

Table 3: Customer Value Analysis (Taipei-Kinmen)

Items	Airlines			
	F	T	U	M
Relative value of brand image	1.000	1.013	0.990	0.926
Relative value of perceived cost	1.000	1.053	1.038	1.086
Relative value of perceived customer value	1.000	0.963	0.954	0.853

Table 4: Customer Value Analysis (Taipei-Makung)

Items	Airlines		
	F	T	U
Relative value of brand image	1.000	0.984	1.016
Relative value of perceived cost	1.000	0.846	0.964
Relative value of perceived customer value	1.000	1.165	1.044

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Authors' Backgrounds

Prof. Jin-Ru Yen is a professor in the Department of Shipping and Transportation Management at National Taiwan Ocean University. He received his Ph. D. from The University of Texas at Austin in the US. He was a 2000-2001 Senior Fulbright Scholar hosted by The University of Illinois at Urban-Champaign. He was also a visiting professor at Embry-Riddle Aeronautical University in 2006. Professor Yen's research and teaching interests include airport operations and management, airlines operations and management, flight safety, and aviation economics.

Prof. Dawna L. Rhoades received her Ph.D. in management from the University of Houston. She is a professor of management and Chair of the Department of Management, Marketing, and Operations in the College of Business at Embry-Riddle Aeronautical University in Daytona Beach, Florida where she teaches international business, strategic management, and international aviation management at both the undergraduate and graduate level. Her research interests include strategic alliances, regional carrier strategy, and service and safety quality at airlines and airports, and intermodal transportation. Her work has appeared in such journals as the *Journal of Air Transport Management*, *Journal of Air Transport World Wide*, *Journal of Transportation Management*, *Journal of Managerial Issues*, *Managing Service Quality*, *World Review of Science, Technology, and Sustainable Development*, and the *Handbook of Airline Strategy*. She is the author of a recently published book entitled *Evolution of International Aviation: Phoenix Rising* and the editor of the *World Review of Intermodal Transportation Research (WRITR)*.

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