Customer Satisfaction and Quality of Vietnam Airlines Domestic Services

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ABSTRACT

The paper examines relation between quality of Vietnam Airlines domestic services and customer satisfaction by gathering opinions from 402 passengers employing Skytrax scale with some modification along with Cronbach's alpha, EFA and multiple regression analysis.

Results show that quality of Vietnam Airlines domestic services can be measured by the following six components in order of importance: (1) boarding/deplaning/baggage; (2) check-in; (3) in-flight services; (4) reservation; (5) aircraft; and (6) flight crew. All of them are directly proportional to customer satisfaction. The paper also offers some suggestions to improve the service quality thereby enhancing the customer satisfaction.

Keywords: Vietnam Airlines, domestic services, service quality, satisfaction

1. AN OVERVIEW

In the past few years, the air transport has gained high growth rates. IATA reports showed that air transport of passenger in 2011 rose by 5.9% in spite of adverse conditions, such as economic recession in many Western countries.

According to 2011 Report by Civil Aviation Authority of Vietnam, the air transport business served 16.6 million passengers and 195,000 tonnes of cargo, increasing by 13.6% and 3% respectively in 2010. Additionally, 51 foreign airlines are operating 54 routes from 22 countries or territories to Vietnam.

Domestic services offered by five local airlines (the fifth one is VietJet Air that came into operation as from Dec. 25, 2011) comprise 39 routes from three hubs – Hà Nội, Đà Nẵng and HCMC – to 17 local airports. The biggest market shares of this business are held by Vietnam Airlines (VNA) and Jetstar Pacific Airlines (JPA). The data show that air transport is a potential and promising market. Local airlines and VNA in particular are facing great challenges and keen competition from foreign rivals.

According to Skytrax, VNA is only ranked as a three-star service on a five-star scale. This means that VNA service quality is at a medium level and it should make great efforts to improve its service quality. Measuring customer satisfaction with service quality is an important task but it has not been cared of properly. There are not many researches on this task and there is no agreement about a scale, SERVQUAL or SERVPARF, used for measuring service quality and customer satisfaction for the air transport business. When VNA joined Skyteam on June 10, 2010, use of Skytrax ranking scale is necessary and also the objective of this research.

2. THEORETICAL BASIS AND RESEARCH MODEL

a. Quality of Aviation Service:

The Draft International Standard, ISO\DIS 9000:2000 defines quality as "ability of a set of inherent characteristics of a product, system, or process to fulfill requirements of customers and other interested parties." Parasuraman et al. (1985) argue that service quality is considered as results of customers' comparison between their expectation of the service and their perception after using the service.

Morash & Ozment (1994) note that service quality conditions influence an airline's competitive advantage, and with this comes market share, and ultimately profitability. However, air transport service, like many other services, has its own characteristics

and standards, about safety for example. Some characteristics are (i) interactive effects between service provider and customer, (ii) personalization, and (iii) high labor content.

According to the Australian Bureau of Transport Economics, standards of air transport service quality include (1) safety), (2) customer information, (3) flight frequency, (4) smooth air services, (5) on-time operation, (6) ground service and equipment, and (7) in-flight amenity and services. Elliott & Roach (1993) suggest the following standards for aviation services: (1) food and beverages, (2) time for baggage collection, (3) comfortable seat, (4) checking procedure, and (5) in-flight services. Gourdin & Kloppenborg (1991) suggest a scale for aviation service quality includes (1) baggage handling, (2) compensation procedure, (3) operation and safety, (4) flight comfort, and (5) network and flight frequency.

The McGraw-Hill Company (2010) measures service quality and satisfaction of 12,300 passengers of 12 North American airlines using Skytrax standards suggested by Skyteam and finds seven influential factors: (1) fee, (2) in-flight services, (3) reservation, (4) flight crew, (5) boarding/deplaning/baggage, (6) aircraft, and (7) check-in.

b. Relation between Aviation Service Quality and Customer Satisfaction:

Hà & Nguyễn (2011) give a simple conclusion of customer satisfaction as an intersection or overlap area between corporate ability and customer need; or a feeling of a person coming from comparison of outcome produced by commodity/service with his/her expectations.

Zeithaml & Bitner (2000) argue that customer satisfaction with service quality is assessment and comparison of their perception of value of the service they receive with their expectation. Huang (2009) says that many researches on aviation verify the relation between aviation service quality and customer satisfaction.

This research applies criteria for measuring customer satisfaction with aviation service quality offered by McGraw-Hill (2010) to the case of Vietnam Airlines in which the aviation service quality comprises six components: (1) reservation (RES), (2) Check-in (CHE), (3) Aircraft (AIR), (4) in-flight services (INF), (5) flight crew (FLI), and boarding/deplaning/baggage (BDB). Suggested research model is based on aforementioned theoretical preconditions and presented in Figure 1
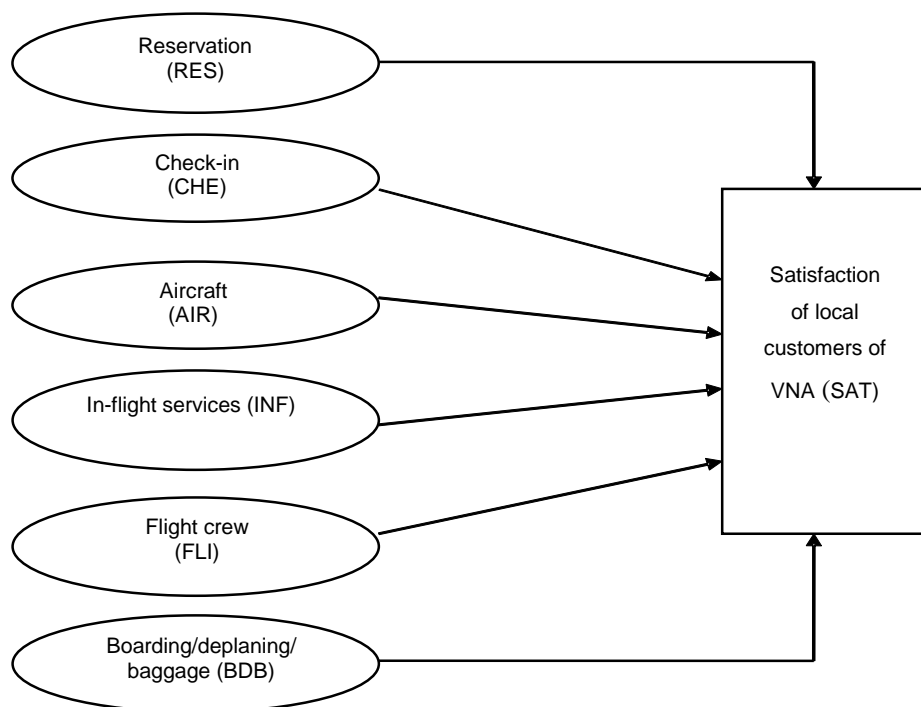
Figure 1: Suggested Research Model

3. IMPLEMENTATION OF THE RESEARCH

a. Qualitative Research:

In-depth interviews with three VNA high-ranking officials are conducted to identify components of service quality and evaluating criteria. Questions are devised beforehand. The interviews are followed by a group discussion based on open questions with seven passengers who frequently use VNA domestic services in order to find their perception of components of service quality. Their opinions are used for improving and developing scales for aviation service quality.

b. Survey:

A quantitative survey is conducted in Tân Sơn Nhất Airport (HCMC). Target population includes Vietnamese passengers who are in the 18-60 age bracket and used VNA domestic services two times at least in the last six months. Samples are picked out according to quota sampling method, as shown in Table 1.

Table 1: Sample Size and Sampling Results

Route	Quota	Interviewed passengers	Qualified responses
TP.HCM (SGN) – Hà Nội (HAN)	160	200	163
TP.HCM (SGN) – Nha Trang (NHA)	120	150	122
TP.HCM (SGN) – Đà Nẵng (DAD)	120	150	117
Total	400	500	402

Data are gathered by 15-minute direct interviews and questionnaires. The interviews are conducted at waiting lounges of airports. Of 500 issued questionnaires, 437 (87.4%) responded; and 35 of them are considered as inappropriate because of many wrong answers or unfilled blanks. Thus, only 402 answered questionnaires can be used for the research.

c. Characteristics of Samples:

The characteristics are presented in Table 2

Table 2: Sample Characteristics

N = 402		Frequency	As %
Gender	Male	193	48.0
	Female	209	52.0
Age	From 18 to 33	203	50.5
	$\geq 34 - 46$	129	32.1
	$\geq 47 - 60$	70	17.4
Monthly	$\leq$ VND5 mn.	84	20.9
Income	From VND5 to 10 mn.	208	51.7
	$\geq$ VND10 mn.	110	27.4
Travel	Business	125	31.1
purpose	Conference	39	9.7
	Visiting relatives	91	22.6
	Tourism	113	28.1
	Others	34	8.5

Education	Junior high school	23	5.7
	Senior high school	73	18.2
Technical high school		45	11.2
	3-year college	38	9.5
	University	151	37.6
	Postgraduate	72	17.9

d. Results of Scale Test:

Table 3 shows that Cronbach's alpha coefficients of all scales are greater than 0.6; and all item-total correlation coefficients are greater than 0.3. Thus, all scales are reliable and can be used for EFA (Nunnally & Burnstein, 1994).

Table 3: Cronbach's Alpha Coefficients for Scales of Components of Quality Service and Customer Satisfaction

No.	Scale	Obs.	Cronbach's Alpha	Smallest item-total correlation coefficients
1	Reservation (RES),	5	0.837	0.574
2	Check-in (CHE)	3	0.733	0.517
3	Aircraft (AIR)	3	0.654	0.378
4	In-flight services (INF)	6	0.869	0.594
5	Flight crew (FLI)	4	0.820	0.546
6	Boarding/deplaning/baggage (BDB)	7	0.899	0.703
7	Satisfaction (SAT)	3	0.834	0.656

In the EFA process, principal components analysis and Varimax are employed. EFA results show that: KMO = 0.888 while chi-square statistic of Barlett's test reaches 7298.249 at Sig. = 0.000. All 31 components are reduced to seven factors with eigenvalue of 1.041 (greater than 1) with a variation of 66.42% (able to explain 66.42% of changes in dataset). Observed variables of seven factors all have factor loadings greater than 0.5, and they are used for analyzing the research model of multiple linear regression. Thus, resultant scales are acceptable. After conducting the factor rotation with all 31 aforementioned variables, seven factors are extracted (Table 4).

Table 4: EFA Results

No.	Factor	No. of variables	eigenvalue	Variance extracted
1	Boarding/deplaning/baggage (BDB)	7	11.141	35.940
2	In-flight services (INF)	6	2.111	6.811
3	Flight crew (FLI)	4	2.003	6.460
4	Reservation (RES)	5	1.694	5.465
5	Check-in (CHE)	3	1.347	4.346
6	Aircraft (AIR)	3	1.254	4.044
7	Satisfaction (SAT)	3	1.041	3.357

EFA results show that scales measuring customer satisfaction and components of service quality did obtain convergent validity. The results also implies that the research model remains stable, comprising six independent variables and one dependent variable.

e. Multiple Linear Regression Analysis:

Table 5 shows that the dependent variable has a close linear relation with six independent variables at $\alpha < 0.05$. Because all absolute correlation coefficients between variables vary from 0.245 to 0.671, thus satisfying condition $-1 \leq r \leq +1$, all variables are qualified for multiple linear regression analysis. This demonstrates that the discriminant validity is achieved, or in other words, scales used in this research can measure various constructs. Correlation matrix also shows that the variable BDB has the greatest effect on the customer satisfaction while CHE produces the smallest effect.

Table 5: Correlation Coefficients between Components

	1	2	3	4	5	6	7
1. BDB	1	.580[**]	.517[**]	.322[**]	.245[**]	.427[**]	.671[**]
2. INF	.580[**]	1	.493[**]	.300[**]	.299[**]	.433[**]	.566[**]
3. RES	.517[**]	.493[**]	1	.411[**]	.337[**]	.393[**]	.454[**]
4. FLI	.322[**]	.300[**]	.411[**]	1	.159[**]	.194[**]	.272[**]
5. CHE	.245[**]	.299[**]	.337[**]	.159[**]	1	.322[**]	.555[**]

6. AIR	.427**	.433**	.393**	.194**	.322**	1	.423**
7. SAT	.671**	.566**	.454**	.272**	.555**	.423**	1

(**) Pearson correlation is statistically significant at $p < 0.01$; n = 402

Results of the MLR analysis of relations between factors of service quality and satisfaction using the Enter method are presented in Table 6. Relations between the aviation service quality reflected in six factors (INF, FLI, RES, CHE, BDB and AIR) with SAT all have Sig. greater than 0.05, and they are presented in the following:

SAT = 0.794***BDB** + 0.541***INF** + 0.275***RES** + 0.133***FLI** + 0.483***CHE** + 0.218***AIR** + 0.241

Table 6: MLR Analysis Results

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	Multicollinearity	
	β	Standard error	β			Tolerance	VIF
Constant	.241	.197		1.223.	.817		
BDB	.794	.045	.536	17.642	.000	.569	1.758
INF	.541	.050	.329	10.826	.000	.579	1.727
RES	.275	.051	.164	5.384	.000	.591	1.693
FLI	.133	.038	.106	3.496	.001	.811	1.234
CHE	.483	.035	.419	13.791	.000	.835	1.198
AIR	.218	.042	.158	5.185	.000	.721	1.388

Adjusted R^2 = 0.627, F = 113.414, Sig.= 0.000

Table 6 shows that the greatest effect on SAT is produced by BDB ($\beta = 0.536$), followed by CHE ($\beta = 0.419$), INF ($\beta = 0.329$), RES ($\beta = 0.164$); AIR ($\beta = 0.158$), and FLI ($\beta = 0.106$). Additionally, all regression coefficients bear positive signs, implying that all factors in the model are directly proportional to customer satisfaction.

Table 7: Adjusted R^2 & F-values

Model	R	R^2	Adjusted R^2	Standard error of the estimate	Statistical changes				
					R^2 change	F change	df1	df2	Sig F. change
1	.795[a]	.633	.627	.55298	.633	113.414	6	395	.000

Table 7 shows that R^2 is 0.633 and adjusted R^2 is 0.627. This implies that the fitness of the model is 62.7%. In other words, 62.7% of customer satisfaction can be explained by the six independent variables, and the remaining 37.3% is affected by other variables.

Table 8: Results of analysis of variance

	Model	Total sum of squares	df	Mean square	F	Sig.
	Regression	208.085	6	34.681	113.414	.000[a]
1	Residual	120.787	395	.306		
	Total	328.872	401			

Results of analysis of variance show that the F-value is 113.414, and Sig. = 0.000 < 0.01, implying that at least one independent variable has a linear relation with the dependent variable. Thus, independent variables in the model have linear relations with the dependent variable and explain its changes, that is, components of service quality can explain changes in satisfaction. This means that the regression model is fit for dataset and usable, and all variables are statistically significant at 5%.

Table 6 shows that Tolerance value is very small and all VIF coefficients are smaller than 10 implying that multicollinearity does not exist. Scatter plot of residual and predicted value of the regression model reveals no relation between them, and thus the linearity assumption of the model is acceptable. Result of analysis of residual based on Histogram approximates standard level, residual has mean value $3.32*10^{-16} \approx 0$ and Std. Dev = $0.992 \approx 1$. P-P plot shows that distribution of residual can be considered as of standard, and assumption of normal distribution of residual is not violated. In short, results of model tests and tests for violation of necessary assumptions show that the regression model used in the research is suitable.

f. Analyzing Importance of Factors Based on Mean Value:

Results of estimation of components of aviation service according to statistic method describing the mean value in a 5-point scale show that scores given by passengers vary from "medium" to "pretty good." (Table 9)

Table 9: Passengers' estimates of components

Factor	Obs.	Mean	Std. deviation	Std. error
BDB	402	3.40	1.032	.051
CHE	402	3.31	1.054	0.53
INF	402	3.56	.942	.047
RES	402	3.60	.897	0.45
AIR	402	3.47	1.009	.050
FLI	402	3.51	.990	.050
SAT	402	3.41	1.045	0.52

The highest scores are given to RES (mean = 3.60), followed by INF (3.56), and FLI (3.51) while medium scores are given to AIR (3.47), and BDB (3.40); and the lowest one to CHE (3.31). SAT is given a pretty high score of 3.41.

4. CONCLUSION AND SUGGESTIONS

a. Conclusion:

The research identifies six components affecting the aviation service quality and customer satisfaction with VNA domestic services. The greatest effects are produced by BDB, followed by CHE, INF, RES and AIR. The weakest effect is caused by FLI. The six components can explain 62.7% of customer satisfaction.

Statistics of mean values given by customers to those six components show that these values are not high. This implies that passengers are not really satisfied with VNA services. This research can be considered as a contribution to an empirical research on aviation service quality based on Skytrax standards.

b. Suggested Solutions:

- BDB: Flight schedule, especially for domestic services, should be preserved. Passengers should be informed timely of all changes or delays. Baggage delivery and collection should be done conveniently and all damage to baggage should be handled

and compensated properly. VNA must supply necessary services to passengers of delayed or cancelled flights, such as some fee services in waiting lounges and hotel rooms at reasonable charges.

CHE: VNA staff should service passengers with professionalism to avoid mistakes. More training courses in foreign languages and work ethics should be given to VNA staff to create a friendly atmosphere for passengers.

INF: In-flight services can be improved by diversifying in-flight meals and entertainment programs, supplying more newspapers and magazines. Needed information about the flight should be given to passengers. Air hostesses should be polite, considerate and friendly towards passengers.

RES: The VNA should respond properly when passengers want to change their reservation. Information about flight schedules should be available on VNA website to spare customers from seeking information at travel agencies. VNA should supply online reservation services.

AIR: VNA aircrafts should have modern equipment to serve passengers betters, especially children, pregnant women and the disabled. Modern aircrafts, such as Boeing 747, Boeing 767 and A321, can help enhance flight safety and comfort.

FLI: Pilot should have professional training and experience. The air crew should be friendly, considerate and fluent in foreign languages. Knowledge of sign language also helps improve their communicative power.

Finally, VNA, as the national carrier with great financial and human potentials, along with support from local passengers, should make the best use of its advantages and favorable conditions to develop into an internationally-acclaimed airline company■

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