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Factors affecting customer satisfaction with the quality of services: empirical evidence at Da Nang international airport, Vietnam

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ABSTRACT

This research is done to measure the factors affecting customer satisfaction with the quality of services of Da Nang International airport. The group of authors uses the method of two-phase mixture with the technique of collecting expert opinions and Structural Equation Modeling (SEM) to analyze quantitative data for the sample including 276 customers who use the services at Da Nang International airport in recent times. Findings show that 06 assessment factors of the quality of services are tangible means, assurance, information, non-aviation services, airline services, utilities. At the same time, these factors affect customer satisfaction at an average level. The group of authors, based on these results, offers some suggestions for managers in perfecting some policies and specifies the suggestions, limitations for the next research.

Contribution/ Originality
We hereby declare that the current research is an original work carried out under the contribution of Dr. Phan Thanh Hai and colleagues. Also, we declare and warrant that our contribution is original, except for such excerpts from copyrighted works as may be included with the permission of the copyright holder and author thereof, that it contains no libelous statements, and does not infringe on any copyright, trademark, patent, statutory right, or propriety right of others.

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1. INTRODUCTION

Da Nang International airport is of a small number of international airports in Vietnam, under the management of Airports Corporation of Vietnam (ACV). Business activities are divided into 2 groups. The airline business services such as investment, management, exploiting organization and trading of airports. This group of services provides the main sales for the airport.

Non-aviation trading services: Retailing souvenirs, refreshments, duty-free goods at the station, restaurant services; Air ticket agents, cargo agents at the airport; service of space and office renting; car parking services, transport of passengers and goods; hotel; advertising services; service of concessions of exploiting rights; entertainment services at the air terminal...

Da Nang International airport is a unit providing services to domestic and foreign customers visiting Da Nang city, creating specific impressions, sympathy, comfort when people come to live, work, study and travel ... in the city.

With such important characteristics, customer satisfaction with services provided by Da Nang International Airport always gets the attention of city leaders, the company's Board of directors and therefore, it is necessary to conduct the actual survey. Because this process will be an useful support for the unit to capture and overcome limitations, customers' suggestions in the process of providing services and by that, suggestions, solutions and proposals can be made to further improve the quality of services. This is also the goal of the authors' article.

2. THEORETICAL BASIS AND RESEARCH MODEL

2.1. Services and quality of services

Service is a special and intangible type of goods, different from other tangible goods. The researchers have different views about the service; this research introduces a number of concepts cited by many different researchers as follows: According to Zeithaml and Britner (2000), services are acts, processes, methods to do a certain job in order to create use value for customers and satisfy the needs and expectations of customers. According to José and Oliveira (2009), services are economic activities that create values and provide benefits to customers in a specific time and at a specific place as a result of a change in desire, or representing recipient of (user) services. According to Philip and Gary (1999), services are the activities or benefits that businesses can dedicate to customers with the purpose of establishing, strengthening and extending the long-term relations and cooperation with customers.

Quality of service is also a concept causing many controversies because there are many different views on it. According to Zeithaml (1987), quality of service is the customer's appreciation for outstanding traits and excellence in general of an entity. It is a kind of attitudes and the results from a comparison between expected things and our perception of things received. According to Lehtinen & Lehtinen (1982), quality of service must be assessed on two aspects: (1) the process of providing service (2) the results of the service. Gronroos (1984) also suggests two aspects of quality of service: (1) the technical quality and (2) functional quality. According to the definition in the research of Parasuraman *et al*. (1991): Quality of service is the gap between customer expectations about products/ services and awareness, feelings after using that products/ services.

Within the scope of this subject with a customer-centered view, quality of service means the satisfaction of customer expectations and needs. Therefore, the quality of service is determined by customers when the service provided by the business meets customer needs.

2.2. Customer satisfaction with service

Customer satisfaction is the emotional state for products and services after using (Spreng and Mackoy, 1996). Customer satisfaction is the extent of emotional state of a person derived from a comparison between the results obtained from the consumption of the products / services and his expectations (Kotler *et al.*, 1996). In general, the researchers consider the satisfaction as comfortable feeling when customers are met their expectations about products and services. The overall satisfaction of service is considered as a separate variable in relation to components of the service quality (Zarei *et al.*, 2012; Chow, 2014).

2.3. Relationship between quality of service and customer satisfaction

Some research show that quality of service and customer satisfaction have close relationship, quality of service is the cause and the satisfaction is result (Spreng and Mackoy, 1996; Chow and Luk (2005). Relationship between service quality and customer satisfaction is the same dimensional relationship, quality of service has a positive impact on customer perception. (Cronin and Taylor, 1992), (Spreng and Mackoy, 1996).

But, some studies as of Zeithaml and Bitner (2000) believe that quality of service and customer satisfaction are two different concepts, while quality of service focuses specifically on the components of service, customer satisfaction is the general concept.

In above research model, SERVQUAL model is the most popular research model to measure quality of service in many different areas.

For research in the aviation sector, Skytrax's model is also used to assess the quality of service at an airport. This is a leading company in the world specialized in studying aviation, having headquarter in London, UK. Skytrax has introduced the assessment of service quality of an airport at many countries on the basis of measuring and recording feedbacks from customers according to 10 components: (1) The convenience of transportation on the way to the airport, (2) a short walking distance, (3) quick procedures, (4) Punctual departure of flights, (5) Quick delivery of luggage and more luggage trolleys, (6) fully and timely broadcasting, (7) clear and concise signal, (8) many goods for shopping, (9) attractive and fully equipped departure lounge, (10) many dishes for choice.

In 2005, Skytrax has studied the assessment of the quality of Tan Son Nhat international airport and used the scale including factors: (1)"access", (2) "landside", (3) "Departure hall to check-in", (4) "security check", (5) "public departure lounge areas', (6) "user-friendly", (7)" product in the airside facilities, public departure lounge which areas, (8) "Arrivals Procedures ".

Recently, some research have been done on the basis of SERVQUAL model to evaluate the service quality of airlines, and factors affecting the service quality of international airports such as research by Tran *et al*. (2016), Mai and Le Truc (2014).

2.4. Model and research hypotheses

Through well-known research models in terms of quality of service as well as the measurement model of customer satisfaction at international airports like assessment model of technical quality / functionality of Gronroos (1984); quality gap model (Parasuraman *et al.*, 1985), SERVQUAL model (Parasuraman *et al.*, 1988), awareness of quality of service model (Mattsson, 1992), SERVPERF model of service quality of Cronin and Taylor (1992), the model of Skytrax, model of Mai and Le Truc (2014), the group of authors has decided to build the theoretical research model associated with adjusted SERVQUAL model in line with the aviation sector, as Figure 1 below.

From this research model, the group of authors offers models with 6 factors and 21 hypotheses that are divided into 2 groups. H1A to H1q group from 15 are hypotheses about the relationship between the components *(1) Tangible Means; (2) Assurance (3) Non-Aviation Services (4) Information (5) Airline Services (6) Utilities* since they measure the same general concept: quality of service. 6 H2A

to H2f group are hypotheses about the relationship between the components of quality of service and level of customer satisfaction.

Proposed research model is presented as follows:

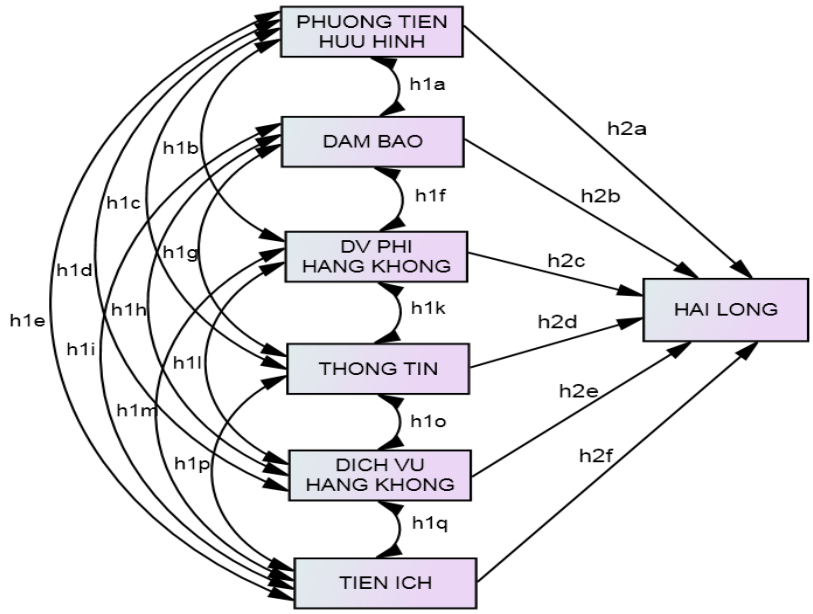

Figure 1: Proposed theoretical research model

3. RESEARCH METHOD

3.1. Research data

The research is done through 01 questionnaire with Likert scale system with 5 points because this scale uses a set of positive numbers. Indicators assessed with the first choice are Very weak, the 5th choice is Very good with statements and satisfaction increasing gradually from 1 to 5. The method of choosing the sample is chosen as a stratified sampling method, after determining the appropriate sample size, samples will be allocated according to different criteria such as nationality, gender, ages and educational level, frequency of using airport services of Da Nang International airport.

The sample size is determined according to the minimum principles to achieve the necessary reliability of the research, but now there are still many different opinions among researchers on the suitable minimum sample size; However, current common view in our country is Bollen's view (1989) suggesting that the minimum sample size is 5 samples for a parameter to be estimated.

This study sampled 276 customers of Vietnamese and foreign nationalities using the services of Da Nang International airport from May 2015 to November 2015 by filling in the questionnaire released directly in the departure lounge, waiting hall, souvenir shops, ... The basis to carry out wide-scale sampling is in-depth interviews with experts as leaders, direct managers at airports, focused discussions and face-to-face dealing with 10 first customers presented below research methods section with reference to the questionnaire established on the theoretical basis as mentioned above. The large-scale sampling is done according to convenient, objective and random sampling method for customers ... at Da Nang international airport. Of 300 questionnaires synthesized to release, 24 questionnaires are excluded because customers have not completed all the questions. Hence, the last remaining official sample is n = 276.

3.2. Research methods

Qualitative research: The authors used two main research methods: qualitative research and quantitative research. Of which, qualitative research was carried out through collecting, learning, evaluating and synthesizing documents, referring to the scales and adjusting to fit the conditions of Da Nang international airports. The adjustment of the scale was based on the results of in-depth interviews with experts and discussions with 10 clients as mentioned above. Specifically, the scales of model include the observed variables with the statement as follows:

Tangible Means Scale at Da Nang international airport (Symbol: HH) composes of 6 observed variables with 6 statements as follows:

HH1: Architecture, Interior station and trees, landscape
HH2: Lounge for favorable check-in procedures for passengers
HH3: Large lounge area to arrange enough seats for passengers
HH4: Convenient baggage receiving area at arrival station
HH5: The availability and quality of baggage trolleys
HH6: Air-bridge/ bus carrying passengers in and out the terminal

Insurance scale at Da Nang international airport (Symbol: DB) composes of 5 observed variables with 5 statements as follows:

DB1: Feeling secure about security and safety at the terminal
DB2: Punctual flight time according to schedule
DB3: No lost, stolen state of luggage at the station
DB4: Means of transport traveling at the airport in accordance with the quality / quantity
DB5: Resolving all passengers' complaints satisfactorily

Non-aviation services Scale at Da Nang International airport (Symbol: DVPHK) includes 5 observed variables with 5 statements as follows:

DVPHK1: The level of diversity in terms of categories, the quality of goods in the shops (cosmetics, clothing, souvenirs, ...)
DVPHK2: The reasonable level of the price of business items
DVPHK3: The level of diversity and quality of food / drinks at restaurants
DVPHK4: The reasonable price unit of food / drinks at restaurants
DVPHK5: The service attitude of the salesperson

Information Scale at Da Nang International Airport (Symbol: TT) consists of 5 observed variables with 5 statements as follows:

TT1: Full and prompt update of information of Da Nang International airport's website
TT2: Sufficient, understandable, conspicuous guidance signboard
TT3: Full and in time update of flight information table
TT4: Clear and full broadcasting
TT5: Prompt notification to passengers upon discovery of incidents
Airline Services Scale at Da Nang International Airport (Symbol: DVHK) includes 5 observed variables with 5 statements as follows:

DVHK1: Quick check-in procedures
DVHK2: Staff doing check in procedure with friendly and professional manners
DVHK3: Quick procedures for aviation security check without causing troubles
DVHK4: Gracious and professional security personnel
DVHK5: Service attitude of concierge, Lost & Found staff

Utilities scale at Da Nang International airport (Symbol: TI) composes of 5 observed variables with 5 statements as follows:

TI1: The complete, easy-to-find ATM devices/ exchange counters
TI2: Communications service: Internet / Wi-Fi / phone
TI3: The complete, easy-to-find information desk for tourist guide
TI4: Environment at the station; temperature, light
TI5: The level of satisfaction and cleanliness of toilets

The scale of customer satisfaction with the quality of services at Da Nang international airport (Symbol: HL) has 3 observed variables with 3 statements as follows:

HL1: Your level of satisfaction with serving manners at Da Nang international airport
HL2: Your level of satisfaction with facilities at Da Nang international airports
HL3: Your overall level of satisfaction when using the services of Da Nang international airport

Quantitative research: In this phase, data was conducted through survey data collection of questionnaires and processed through SPSS software to analyze data with the following techniques: descriptive analysis, Cronbach's Alpha inspection, Confirmatory Factor Analysis, Confirming Factor Analysis (CFA) and Structural Equation Modeling (SEM).

4. RESEARCH FINDINGS

4.1. Descriptive statistics and checking reliability of scales

SPSS 20 software is used to conduct the analysis in the research. Out of 276 customers, Information about the samples (276 customers) is presented in details in Table 1 as follows:

Table 1: Descriptive statistics of samples

	Number	Frequency (%)		Number	Frequency (%)
Gender		1	*Education*		
Male	77	27.9	Student	32	11.6
Female	199	72.1	College	98	35.5
Agge Group			University	109	39.5
Under 20 years old	76	27.5	After university	37	13.4
From 20 to 40 years old	98	35.5	*Number of times passing*		
From 41 to 60 years old	65	23.6	01 times	31	11.2
Over 60 years old	37	22	02 times	88	31.9
			03 times	92	33.3
			Over 3 times	65	23.6

Results of Cronbach's Alpha inspection for the scales shown in Table 2 indicates that these scales have Cronbach's alpha coefficient at over 0.6 and total variable correlation coefficient at over 0.3. (Nunnally & Burnstein, 1994). Therefore, this shows that all scales and observed variables are reliable and used in subsequent EFA analysis.

Table 2: Results of Cronbach's Alpha coefficient inspection of scales

Scale	Number of observed variables	Cronbach's Alpha	Note
Tangible media (HH)	4	0.793	The 3rd result after excluding variables HH6 and HH5 (Because the correlative coefficient of the variable HH6 in the first time check is 0.034 <0.3); and the correlative coefficient of the variable HH5 in the second time check is 0.130 <0 .3)
Assurance (DB)	4	0.798	The 2nd result after excluding the variable DB5 (Because the correlative coefficient in the first time check is 0.241 <0.3)
Non-aviation services (DVPHK)	4	0.876	The 2nd result after excluding the variable DVPHK2; Because the correlative coefficient in the first time check is 0.140 < 0.3
Information (TT)	3	0.812	The 3rd result after excluding variables TT1 and TT5 (Because the correlative coefficient of the variable TT1 in the first time check is 0.0244 <0.3); and the correlative coefficient of the variable TT5 in the second time check is 0.289 <0.3)
Aviation Services (DVHK)	4	0.841	The 3rd result after excluding variables DVHK4 and DVHK6 (Because the correlative coefficient of the variable DVHK4 in the first time check is 0.21 <0.3); and the correlative coefficient of the variable DVHK6 in the second time check is 0.205 < 0.3)
Utilities (TI)	4	0.796	The 2nd result after excluding the variable TI1 (Because the correlative coefficient in the first time check is 0.057 <0.3)
The overall satisfaction of customers (HL)	3	0.786	

4.2. Results of exploratory factor analysis (EFA)

From the survey results, the data were analyzed to discover factors with the support of SPSS software, after having excluded variables with loading factor coefficient less than 0.5, the final result of Exploratory Factor Analysis is obtained as follows:

Table 3: Results of Exploratory Factor Analysis EFA

Observed variables	Factor						
	1	2	3	4	5	6	7
DVPHK3	0.924						
DVPHK5	0.922						
DVPHK1	0.754						
DVPHK4	0.620						
DVHK3		0.835					
DVHK1		0.811					
DVHK2		0.766					
DVHK5		0.685					
TI4			0.878				
TI2			0.695				
TI5			0.659				
TI3			0.565				
HH1				0.859			
HH3				0.681			

HH2				0.654			
HH4				0.599			
DB1					0.967		
DB3					0.707		
DB4					0.533		
DB2					0.524		
TT3						0.912	
TT4						0.733	
TT2						0.561	
HL3							0.807
HL1							0.773
HL2							0.567
Eigenvalue	7.014	3.014	2.297	1.861	1.591	1.281	1.012
Cronbach alpha	0.67	0.841	0.796	0.793	0.798	0.812	0.786

KMO = 0.831 > 0,5; Inspection of Batlett's Chi-Square =3.900E3, Sig =0,000 < 0,05
Cumulative extracted variance = 61.7 % > 50%

Analysis results show that KMO coefficient = 0.831 > 0.5, Batlett inspection has p-value at 0.000 <0.05, extracted variance at 61.7% > 50% (Table 3), the loading factor coefficients at > 0.5, the observed variables form 6 factors. Therefore, standards used in Exploratory Factor Analysis EFA are suitable with research data collection.

Therefore, after conducting EFA from the set of observed variables, we adjusted research model and the specific research hypothesis as follows:

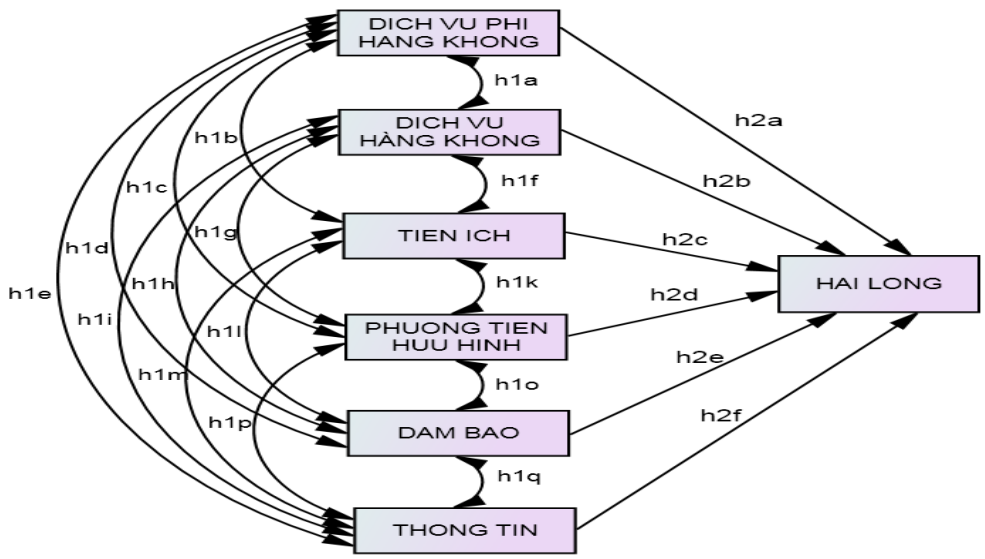

Figure 2: The theoretical model after adjustment

The hypotheses:
H2a hypothesis: The better the non-aviation services of an airport are, the higher level of customer satisfaction with the service quality of that airport will be.
H2b hypothesis: The better the airline services of an airport are, the higher level of customer satisfaction with the service quality of that airport will be.

H2c hypothesis: The better the Utilities of an airport are, the higher level of customer satisfaction with the service quality of that airport will be.
H2d hypothesis: The better the tangible means of an airport are, the higher level of customer satisfaction with the service quality of that airport will be.
H2e hypothesis: The more secure the service quality of an airport is, the higher level of customer satisfaction will be.
H2f hypothesis: The better the Information quality of an airport is, the higher level of customer satisfaction with the service quality of that airport will be.

4.4. Results of confirmatory factor analysis CFA

CFA analysis of critical measurement model (Figure 3) shows that this scale has 275 free degrees, Chi2 = 524.036 (p_value = 0.000. Chi2 / df = 1.906, TLI = 0.921, CFI = 0.933, RMSEA = 0.057) showing that this model fit the market data according to Bentler and Chou (1987), Hair *et al.* (2010). Standardized weighting coefficients of observed variables in the model (λi) is in accordance with permitted standards (≥ 0.50) and have statistical significance p = 0.000, so concepts reach converging value. The synthesized reliability coefficient of concepts is ranged in [0.774; 0.873] and the total extracted variances of the scales reach level of significance except The concept of Ensure the quality of service has a relatively low extracted variance in 0.462 (Table 4);

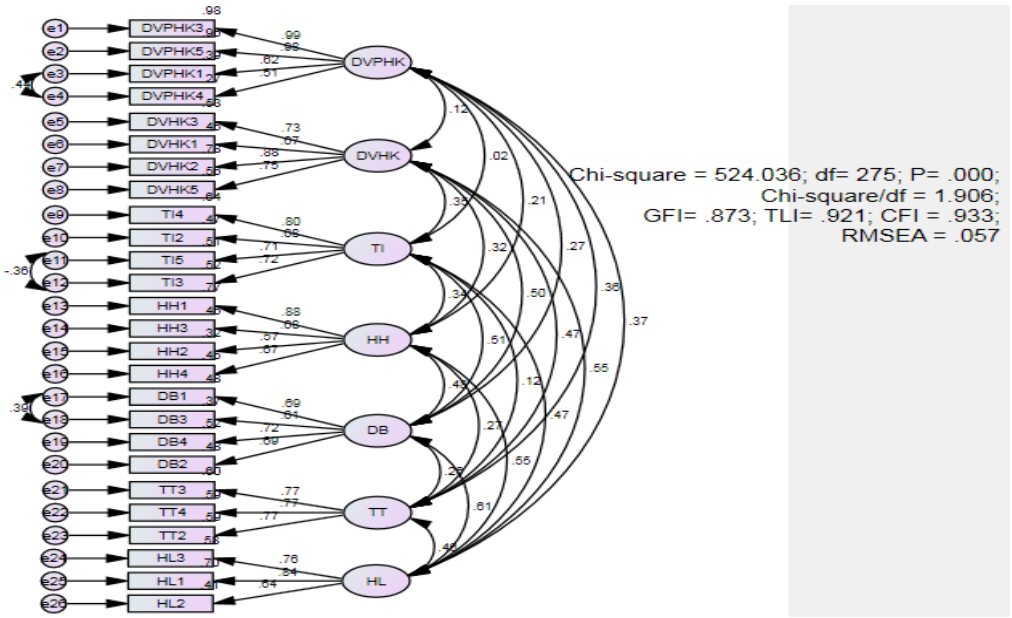

Figure 3: CFA Result (standardized) of the model

Table 4: Inspecting reliability and convergence of factors

Concept	Number of observed variations	Reliability		Extracted variance
		Cronbach	Synthetize	
Non-aviation services	4	0.867	0.873	0.649
Airline service	4	0.841	0.845	0.579
Utilities	4	0.796	0.821	0.535
Angibility	4	0.793	0.796	0.501
Assurance	4	0.798	0.774	0.462
Information	3	0.812	0.813	0.592
The overall customer satisfaction	3	0.786	0.791	0.561

Table 5 shows that the correlative coefficients between pairs of concepts and accompanying standard errors are less than 1 and p-value is less than 0.05. So, these concepts have differentiating value.

Table 5: Result of inspection of differentiating value among the components of scales

Correlation			r	S.E	C.R	p-value
DVPHK	<-->	DVHK	0.115	0.060	14.747	0.000
DVPHK	<-->	TI	0.020	0.060	16.225	0.000
DVPHK	<-->	HH	0.208	0.059	13.403	0.000
DVPHK	<-->	DB	0.272	0.058	12.523	0.000
DVPHK	<-->	TT	0.358	0.056	11.381	0.000
DVPHK	<-->	HL	0.368	0.056	11.251	0.000
DVHK	<-->	TI	0.351	0.057	11.473	0.000
DVHK	<-->	HH	0.324	0.057	11.828	0.000
DVHK	<-->	DB	0.504	0.052	9.506	0.000
DVHK	<-->	TT	0.468	0.053	9.965	0.000
DVHK	<-->	HL	0.548	0.051	8.945	0.000
TI	<-->	HH	0.338	0.057	11.643	0.000
TI	<-->	DB	0.508	0.052	9.455	0.000
TI	<-->	TT	0.118	0.060	14.702	0.000
TI	<-->	HL	0.474	0.053	9.888	0.000
HH	<-->	DB	0.478	0.053	9.837	0.000
HH	<-->	TT	0.266	0.058	12.604	0.000
HH	<-->	HL	0.552	0.050	8.893	0.000
DB	<-->	TT	0.265	0.058	12.618	0.000
DB	<-->	HL	0.610	0.048	8.147	0.000
TT	<-->	HL	0.460	0.054	10.067	0.000

Conclusion: The result of CFA analysis shows that the concept of measurement in research model is satisfactory in terms of reliability, convergent value, differentiating value. For unidirectional feature, the components DVHK, HH, TT, HL are satisfactory, the remaining components DVPHK, TI, DB have correlation among the errors of the observed variables, they do not achieve unidirectional feature.

4.5. Results of inspection of model hypothesis by SEM

To check the general suitability of the model, the group of authors used Structural Equation Model SEM. The result in Figure 4 shows the suitability between the model and market data. SEM result shows that all hypotheses (H2a → H2f) are accepted with a 95% reliability (Table 6).

Table 6: The result of inspection of hypotheses on the relationship between factors

Relationship			Estimation	S.E.	C.R	P	Hypothesis	Conclusion
HL	<---	DVPHK	0.119	0.039	3.024	0.002	H2a	Accept Hypothesis
HL	<---	DVHK	0.196	0.074	2.641	0.008	H2b	Accept Hypothesis
HL	<---	TI	0.226	0.080	2.830	0.005	H2c	Accept Hypothesis
HL	<---	HH	0.216	0.060	3.587	***	H2d	Accept Hypothesis
HL	<---	DB	0.227	0.102	2.214	0.027	H2e	Accept Hypothesis
HL	<---	TT	0.176	0.079	2.224	0.026	H2f	Accept Hypothesis

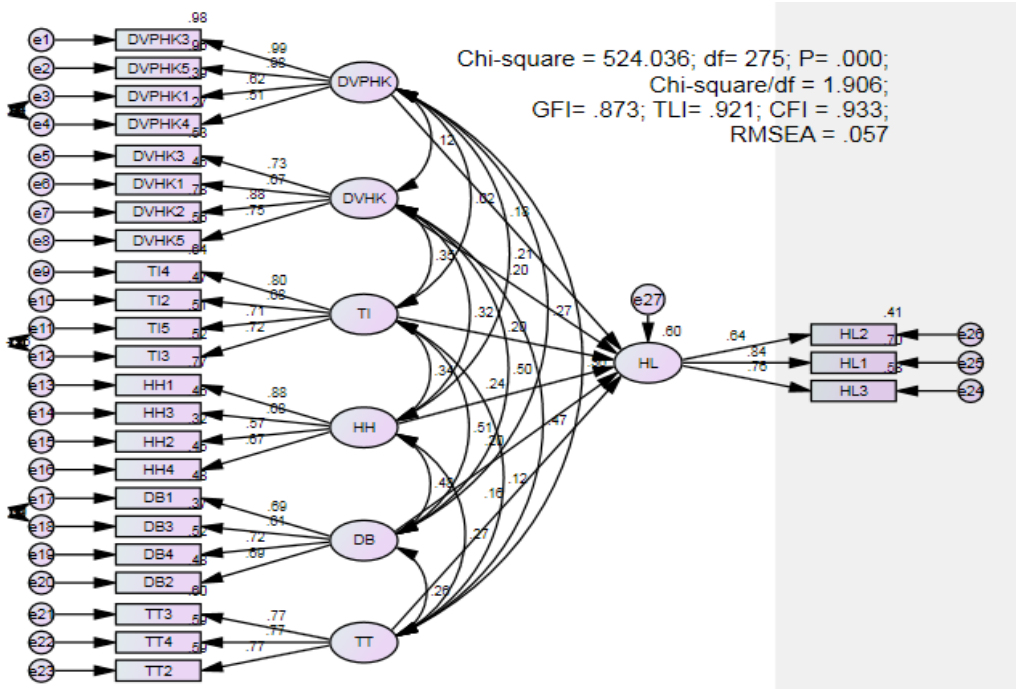

Figure 4: SEM result of (standardized) the model

With R^2 = 0.601 = 60.1%, independent factors DVPHK, DVHK, TI, HH, DB, TT explain 60.1% dependent factors. The impact order of the factors of the service quality on customer satisfaction at Da Nang International Airport is respectively Tangible means, Airline Services, Assurance, Utilities, Non-aviation services and Information (Table 7).

Table 7: The result of standardized regression weighting coefficient

Relationship			Coefficient (r)
HL	<---	DVPHK	0.178
HL	<---	DVHK	0.203
HL	<---	TI	0.196
HL	<---	HH	0.245
HL	<---	DB	0.201
HL	<---	TT	0.160

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

Results of the measurement models show that after adding and adjusting, the scales achieve allowed reliability and value. At Da Nang international airport, the quality of service is measured with 6 components, *(1) Non-Aviation Services, (2) Airline Services, (3) Utilities (4) Tangible means, (5) Assurance, (6) Information*.

The result of customer opinion surveys also shows specific evaluation of each element of service quality at Da Nang International Airport on a scale of 5 (Likert scale), respectively: Assurance: 3.422 points, Tangible Means: 3.225 points, Information: 2.586 points, Non-aviation services: 2.942 points, Airline Services: 2.652 points, Utilities: 3.122 points. Finally, the average point for customer satisfaction is assessed at 3.023 point.

This shows that in overall, customers are relatively satisfied (below good) with the quality of services offered at the Da Nang International Airport.

5.2. Proposals for the management at Da Nang International Airport

Evaluation results show that real quality of service of Da Nang International Airport in 2015 is relatively good. This shows that the unit should have much greater efforts to improve the quality of services in the near future. Specifically:

For Facilities (Tangible Means component): In general, customers have positive opinions about the architecture, interior station and trees, landscape, baggage receiving area at arrival station because the terminal of Da Nang International Airport has been invested in newly building, designing according to foreign standards. However, customers have comments for check-in procedures lobby, the waiting room is relatively small, and locally overcrowded at the time having many flights. Therefore, the leader of Da Nang International Airport should give advisory opinions to leaders of Airport Corporation of Vietnam and the authorities for next research in expanding the terminal to overcome the overcrowding in the upcoming year.

For the security and safety (Assurance component): Passengers have good reviews on the security and safety at the station. Passengers' luggage at Da Nang international airport terminal is rarely lost or stolen. Picking up place, taxi service, buses are arranged in a full and polite manner. However, what makes customers less satisfied is the delay and cancellation of flights; flight times and schedules of resolving customer complaints are rated in the average level by customers. This is also a problem that the leaders of the Da Nang International airport need to consider to review the causes affecting the delay, cancellation of flights; and review relevant policies to protect the rights of passengers when there is flight delay or cancellation. It is necessary to strengthen coordination with relevant units in resolve actively customer complaints promptly, effectively and appropriately according to regulations of the sector.

For Non-Aviation services: Basically, customers rate at average level because the prices of goods and services at the Da Nang airport is relatively reasonable, not too high as reflected in Noi Bai and Tan Son Nhat airports. However, the diversity of goods and food quality should be more concerned, and the service attitude of the sales staff is not good. Opening hours of the restaurants are not suitable with flight schedules; Restaurants close so early at night, so passengers who have delayed flight is not served. Managers of Da Nang International airport should consider this problem to take some measures for further improvement.

For Information (Information component): This is a problem that attracts great attention of managers at the airport because according to the opinions of the customers in the survey, three criteria, namely websites, signposts at the station, prompt notifications are assessed at the average level. Flight information table, broadcasting at the station is rated at a poor level.

For Airline services: The criteria "Time for check-in procedures, baggage delivery time" is rated at average level. The criteria "quick aviation security checking procedures without causing troubles" are rated at a poor level. The survey found that the process of queuing for the security checking procedures takes much time, security personnel do not have timely and proper guidance, which makes passengers relatively dissatisfied.

For Utilities component: The criteria are rated at an average level. In the coming time, Da Nang International Airport should be concerned about overcoming some problems, such as: improving the quality of Wi-Fi connection at the station and limiting direct sunlight in the waiting room, providing air conditioning system in the hot weather.

5.3. Limitations of the research and suggestions for next research

This research is checked only at Da Nang International Airport. Although Da Nang International airport is a relatively modern airport that may represent all airports in Vietnam, due to differences in geographical conditions, the infrastructures of the airport, there may has different measurement scales. Therefore, the same research should be done again in other airports in order to build common measurement scale for all the airports of Vietnam Airlines. This is a direction for further research.

Although customer opinion poll table is elaborately prepared with 3 pages within 10 minutes for answering, there are some drawbacks: (1) Only two languages are Vietnam and English, so some foreign customers who do not know English cannot answer. Therefore, further research must be improved by using multiple languages in accordance with the passengers through Da Nang terminal (Vietnamese, English, Russian, French, Chinese, Japanese, Korean). These are improvements for the next research.

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References

Bentler, P. M., & Chou, C. P. (1987). Practical issues in structural modeling. *Sociological Methods & Research, 16*(1), 78-117. *view at Google scholar* / view at publisher

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley. view at publisher

Chow, C. C., & Luk, P. (2005). A strategic service quality approach using analytic hierarchy process. *Managing Service Quality, 15*(3), 278–289. *view at Google scholar* / view at publisher

Chow, C. K. W. (2014). Customer satisfaction and service quality in the Chinese airline industry. *Journal of Air Transport Management, 47*, 39-47. *view at Google scholar* / view at publisher

Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination an extention. *Journal of Marketing, 56*(3), 55-68. *view at Google scholar* / view at publisher

Gronroos, G. (1984). A service quality model and its marketing implications. *European Journal of Marketing, 18*(4), 36-44. *view at Google scholar* / view at publisher

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. Seventh Edition. Prentice Hall, Upper Saddle River, New Jersey. *view at Google scholar*

José, O., & Oliveira, D. (2009). Adaptation and application of the SERVQUAL scale in higher education. *POMS 20th Annual Conference, 55*(14). *view at Google scholar*

Kotler, P., Ang, S. H., & Tan, C. T. (1996). *Marketing and management: an Asian perspective.* Publisher Prentice Hall. *view at Google scholar*

Lehtinen, J. R., & Lehtinen, U. (1982). *Service quality: a study of quality dimensions*. Unpublished Working Paper, Service Management Institute, Helsinki.

Mai, N. K., & Le Truc, M. D. (2014). The factors affecting Viet Nam airlines service quality and passenger satisfaction – a mediation analysis of service quality. *International Journal of Innovation, Management and Technology, 5*(5), 327-333. *view at Google scholar* / view at publisher

Mattsson, J. (1992). A service quality model based on an ideal value standar. *International Journal of Service Industry Management, 3*(3), 18-33. *view at Google scholar* / view at publisher

Nunnally, J. C., & IH Bernstein, I. H. (1994). *Psychometric theory*. McGraw-Hill Inc, New York, NY. *view at Google scholar*

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Jounal of Marketing, 49*, 41-50. *view at Google scholar* / view at publisher

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: a multi-item scale for measuring consumer perceptions of the service quality. *Journal of Retailing, 64*(1), 12-40. *view at Google scholar*

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing, 67*, 420-450. *view at Google scholar*

Philip, K., & Gary, A. (1999). *Principles of Marketing*. Prentice Hall Upper Saddle River, New Jersey, USA, p 258-260.

Spreng, R. A., & Mackoy, R. D. (1996). An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing, 72*(2), 201-214. *view at Google scholar* / view at publisher

Tran, P. H., Dang, M. T., Nguyen, T. H., & Huynh, K. Q. (2016). Factors affecting the service quality standards at the international airport when Vietnam integrates TPP: A study at Tan Son Nhat Airport, Ho Chi Minh city, Vietnam. *British Journal of Marketing Studies, 4*(1), 43-52. *view at Google scholar*

Zarei, A., Arab, M., Froushani, A. R., Rashidian, A., & Tabatabaei. S. M. G. (2012). Service quality of private hospitals: The Iranian patients` perpective. *BMC Health service Research 2012, 12*(31), 1-7. *view at Google scholar* / view at publisher

Zeithaml, V. A. (1987). *Defining and relating prices, perceived quality and perceived value*. Marketing Science Institute, Cambridge, MA. *view at Google scholar*

Zeithaml, V. A., & Bitner, M. J. (2000). *Services marketing: integrating customer focus across the firm*. 2nd ed., Irwin/ McGraw-Hill, Boston, M.A. *view at Google scholar*