

# A STUDY ON THE FACTORS AFFECTING CUSTOMERS' SATISFACTION WITH LOGISTICS SERVICES : AN EMPIRICAL SURVEY IN DA NANG CITY, VIETNAM

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## ABSTRACT :

This study has been conducted to measure factors that influence customers' satisfaction with some Da Nang logistics companies. A survey sample consists of 204 customers, who use the logistics services of Da Nang logistics companies in recent times. It is evident from result that service capability of the staff, the facilities at the unit, empathy and the ability to meet customer demand is the key factor to the positive decision pleased use of logistics in Da Nang logistics companies. Most interviews in recent years. Based on the research findings, several implications are proposed for enhancing customer satisfaction with the service quality in the near future.

**Keywords :** *Da Nang logistics companies, quality service, customer, satisfaction.*

**JEL Classification :** D12, M10, L91.

## 4. DATA ANALYSIS RESEARCH

### 4.1. Statistics describing the study sample

SPSS 16.0 software was used to conduct the analysis in the study. Of the 204 customers it has information about the study sample (204 customers) are presented in detail in Table 1 as follows:

**Table 1 - Descriptive statistics sample**

Characteristics	Frequency	Rate %
Type of business use of logistic services	N = 204	
The enterprise with foreign capital Investment	9	4,41%
Joint stock company	18	8,82%
Limited liability company	105	51,47%
Private enterprise	39	19,4%
State enterprises	33	15,9%

*Source: The results of analysis from SPSS 16.0 software*

### 4.2. Testing the rating scale by Cronbach's Alpha reliability coefficient

Assess the reliability of scale through Cronbach's alpha coefficient less ncoefficient of 0.6 and variable - total (Corrected Item - Total Correlation) > 0.3 (Hoang Trong & Chu Ngoc Nguyen Mong, 2008). So here are 5 variable regression model and to test the independent variables are correlated well or not, the author uses analysis tools Cronbach's Alpha reliability.

Inspection results Cronbach's coefficient alpha reliability for scale of service quality factors and scale of customers satisfaction for the quality of logistics services is shown in Table 2. The results are observed 20 variable 05 elements of logistics service quality and 05 observed variables of satisfaction factors reach and reliability analysis used in the next EFA.

**Table 2 - Testing the rating scale by Cronbach's Alpha reliability coefficient**

The scale	Number of	Crobach's	Result	Note
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	observed variables	Alpha	
Credibility	5	0,701	OK
Ability	3	0,662	OK
Empathy	4	0,771	OK
Ability	4	0,825	OK
Tangibles	4	0,769	OK
Customer satisfaction	5	0,886	OK

Results 2nd after eliminate NL1 variable (Due to the correlation coefficient of total testing time variable 1 is 0.128 <0.3)

Source: The results of analysis from SPSS 16.0 software.

### 4.3. Exploratory factor analysis (EFA)

This method will help authors shortened set at a more latent variables (factors) from the set of observed variables. *Consistent standards for conducting analysis Exploring factors KMO coefficient is at least equal to 0.5, with p-Bartlett test smaller p-value of 0.05, the minimum factor loading of 0.5, equal to the gross variance extracted is 50%.* Due to technical analysis exploring factors do not consider relationships distinguish between dependent variable and independent variables (Hoang Trong and Chu Nguyen Mong Ngoc, 2008) and only considers the relationship between all the variables included in the analysis. So we will conduct analysis to Exploring factors independent variables and the dependent variable separately. Factor extraction method is the method of principal component with varimax rotation results from data analysis are as follows:

(a) *The results of analysis of factors EFA scale logistics service quality:*

From the survey results, the data were analyzed Exploring factors with the help of SPSS soft ware, after having eliminated the factor loading coefficient of variation less than 0.5, the analysis exploring last factor obtained as follows:

**Table 3** – Result of KMO and Bartlett’s test (factors of logistics service quality)

Items	Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0,776
Bartlett's Test of Sphericity	Approx. Chi-Square
	Df
	Sig.
	1374,80
	153
	0,000

Source: The results of analysis from SPSS 16.0 software.

**Table 4** – Analysis of the gross variance extracted elements (logistics service quality)

Thành phần	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Tổng	% of Variance	Cumulative %	Tổng	% of Variance	Cumulative %
1	4,944	27,469	27,469	2,732	15,180	15,180
2	2,229	12,384	39,853	2,490	13,835	29,015
3	1,960	10,888	50,740	2,252	12,509	41,523
4	1,444	8,020	58,760	2,150	11,947	53,470
5	1,030	5,724	64,484	1,983	11,014	64,484
6	0,925	5,139	69,624			
7	0,762	4,234	73,858			
8	0,628	3,489	77,348			
9	0,607	3,370	80,718			
10	0,558	3,102	83,819			

11	0,517	2,871	86,691
12	0,501	2,786	89,477
13	0,471	2,615	92,092
14	0,366	2,035	94,127
15	0,340	1,887	96,014
16	0,320	1,775	97,789
17	0,229	1,273	99,062
18	0,169	0,938	100,000

Extraction Method: Principal Component Analysis.

Source: The results of analysis from SPSS 16.0 software.

**Table 5** – Result of rotated component matrix (logistics service quality)

Items	Components				
	1	2	3	4	5
DU3	0,857				
DU4	0,826				
DU2	0,693				
DU1	0,657				
PT3		0,804			
PT1		0,794			
PT2		0,727			
PT4		0,689			
DC4			0,794		
DC3			0,784		
DC2			0,753		
NL3				0,787	
NL2				0,772	
NL4				0,632	
DC1				0,586	
TC2					0,824
TC1					0,780
TC3					0,722

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations

Source: The results of analysis from SPSS 16.0 software.

As can be seen,  $KMO = 0.776 > 0.5$ , Bartlett's test have  $p\text{-value} = 0.000 < 0.05$  (table 3), the gross variance extracted equal to  $64,484\% > 50\%$  (table 4), the gross correlation coefficients are approximately greater than 0.5 and extracting 5 factors (table 5). Hence, the exploratory factor analysis of logistics service quality is acceptable.

(b) *The results of analysis EFA scale factors of customer satisfaction*

The results showed :  $KMO = 0.7612 > 0.5$ , Bartlett's test have  $p\text{-value} = 0,000 < 0,05$  (table 6), the gross variance extracted =  $69,181\% > 50\%$  (table 7), variations observed only a single form factor (table 8). Hence, the exploratory factor analysis of customer satisfaction is acceptable.

**Table 6** - Result of KMO and Bartlett's test (factors of customer satisfaction)

Items	Result
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0,7612
Bartlett's Test of Sphericity	Approx. Chi-Square 872,869

Df	10
Sig.	0,000

Source: The results of analysis from SPSS 16.0 software.

**Table 7 - Analysis of the gross variance extracted elements (customer satisfaction)**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3,459	69,181	69,181	3,459	69,181	69,181
2	0,643	12,870	82,050			
3	0,569	11,389	93,440			
4	0,293	5,869	99,308			
5	0,035	0,692	100,000			

Source: The results of analysis from SPSS 16.0 software.

**Table 8 - Result of rotated component matrix (customer satisfaction)**

Items	Component
	1
SHL5	0,902
SHL2	0,900
SHL3	0,822
SHL4	0,805
SHL1	0,714

Source: The results of analysis from SPSS 16.0 software.

So after conducting analysis Exploring factors from the set of observed variables built, no single factor change. So the research model and research hypotheses remain the same as the original model.

## 5. RESEARCH RESULTS

### - Analysis Correlation

To examine the relationship between the dependent variable "overall satisfaction" and the factors in the model we use single correlation coefficient (Pearson correlation coefficient) for review. Other correlation coefficient unlike 0 and P- value of test-value less than 0.05 2 side can see the concepts related to each other. Positive correlation coefficient of relationship is expressed in the same direction, negative correlation coefficient expressed opposite relationship, the correlation coefficient between the larger factor represents the relationship between them as increasingly close. The results of analysis of data from the study are as follows:

**Table 9** - Table of analytical the Pearson correlation coefficient

		DU	PT	DC	NL	TC	HL
DU	Pearson Correlation	1	0,180**	0,540**	0,318**	0,138*	0,619**
	Sig. (2-tailed)		0,010	0,000	0,000	0,050	0,000
	N	204	204	204	204	204	204
DC	Pearson Correlation	0,540**	0,204**	1	0,368**	0,336**	0,492**
	Sig. (2-tailed)	0,000	0,003		0,000	0,000	0,000
	N	204	204	204	204	204	204
NL	Pearson Correlation	0,318**	0,203**	0,368**	1	0,313**	0,405**
	Sig. (2-tailed)	0,000	0,004	0,000		0,000	0,000
	N	204	204	204	204	204	204
TC	Pearson Correlation	0,138*	0,137	0,336**	0,313**	1	0,263**
	Sig. (2-tailed)	0,050	0,051	0,000	0,000		0,000
	N	204	204	204	204	204	204
SHL	Pearson Correlation	0,619**	0,334**	0,492**	0,405**	0,263**	1
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	
	N	204	204	204	204	204	204

Source: The results of analysis from SPSS 16.0 software.

\*\* . Correlation is significant at the 0,01 level (2-tailed).

\* . Correlation is significant at the 0,05 level (2-tailed).

Notes: DU is ability to respond; PT is a tangibles , DC is empathy; NL is the ability to serve; TC and SHL is the belief that the general satisfaction.

From the results of the study showed that among the factors that have a relationship with the dependent variable overall satisfaction, in which variables most strongly associated with DU (0.619,  $p < 0.05$ ) and correlated with variables weakest TC (0.263,  $p < 0.05$ ) and between factors also have a relationship with each other, the two-tailed p-value showed-value  $< 0.05$ . (table 9). This suggests to consider carefully the possibility of multicollinearity in a multiple regression model.

#### - Regression Analysis

Correlation analysis tells us that the relationship between concepts, but we do not know the relationship between them is the causality of how to test the research hypotheses. So we have to use regression analysis to examine the causal relationship between them. Analytical methods used method is to use the total least squares (OLS), the method put variable into the regression enter method (put all the variables at the same time) as it is the research expertise should approach would be more consistent enter step-wise approach (Nguyen Dinh Tho, 2011).

(a) The results of regression analysis method Enter

The results estimated from the study data as follows:

**Table 10 – Result of assessing the calibrated model (model summary<sup>b</sup>)**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,700	0,490	0,477	0,38685	1,964

Source: The results of analysis from SPSS 16.0 software.

**Table 11 – ANOVA (b)**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	28,482	5	5,696	38,063	0,000
Residual	29,632	198	0,150		
Total	58,114	203			

Source: The results of analysis from SPSS 16.0 software.

**Table 12 – Result of MRL with individual regression coefficients in the model**

Model	Unstandardized coefficients		Unstandardized coefficients	t	Sig	Collinearity statistics	
	B	Std. Erros	Beta			Tolerance	VIF)
(Constant)	0,185	0,328		0,552	0,582		
DU	0,390	0,052	0,461	7,506	0,000	0,683	1,463
PT	0,250	0,057	0,184	3,505	0,001	0,933	1,072
1 DC	0,106	0,056	0,122	1,886	0,041	0,616	1,622
NL	0,187	0,071	0,149	2,617	0,010	0,790	1,266
TC	0,090	0,058	0,087	1,559	0,121	0,836	1,196

Source: The results of analysis from SPSS 16.0 software.

The regression equation is determined as follows:

$$\text{SHL} = 0,185 + 0,390\text{DU} + 0,250\text{PT} + 0,106\text{DC} + 0,187\text{NL} + 0,090\text{TC}$$

MLR result shows that adjusted  $R^2 = 0.447$ , F-test (ANOVA) expresses the significance level sig. =0.000; thus, the regression model is suitable and these factors can explain 44,7% of the variations of the dependent variable.

(b) Testing of hypotheses

**Table 13 - Regression analysis results**

	Result	b	T	p- value
H1 : Credibility → Customer satisfaction	Reject	0,090	1,559	0,120
H2 : Capacity → Customer satisfaction	Accept	0,187	2,617	0,010
H3 : Empathy → Customer satisfaction	Accept	0,106	1,886	0,041
H4 : Ability → Customer satisfaction	Accept	0,390	7,506	0,000
H5 : Tangibles → Customer satisfaction	Accept	0,205	3,505	0,001

Source: The results of analysis from SPSS 16.0 software.

## 6. DISCUSSION AND IMPLICATIONS FOR ADMINISTRATORS

### 6.1. Discuss research results

Based on the results of quantitative research on the relationship between the elements of logistics service quality for the customers satisfaction with Da Nang logistics companies can draw some conclusions as follows:

- In the condition research for logistics services is credibility factor is not a factor

clearly influential to customers satisfaction. This was explained to the group of customers with goods often use the services of logistics often tend choice of transport enterprises prestigious brand before they decided the service. So attributes like reliability is required by Da Nang logistics companies, without it, the customers will definitely feel uneasy, do not trust to use logistics services company. (Hypothesis H1 is rejected because the results regression analysis showed that  $\beta = 0.090 > 0$ , but value  $p\text{-value} = 0.120 > 0.05$  (Table 13).

- If Da Nang logistics companies improved aspects of their service capacity, improve customer care stages, improve response rates and the level of customers satisfaction of for vehicles, material foundations of units, the general satisfaction when using the company's logistics services will increase in the coming time. Such assumptions prove H2, H3, H4, H5 is accepted because the  $p\text{-value} < 0.05$  (Table 13). All factors related to the quality of logistics services are affected in the same direction (+) to the general satisfaction of customers using the service.

## **6.2. The implication for administrators**

To increase customers satisfaction with the use of logistics services, the business managers specialized service providers should pay attention to the issues related to: service capacity of the unit; improved customer care stitching; perfecting material foundations and capacity to meet the requirements of customers. As follows :

- Managers need to focus on maintaining maximum service capacity for the request, the proposal set out by customers in any given time. Want to accomplish this requires the construction units must strictly business plan, improve the capacity of the department to receive, analyze and process the information requirements of customers, synergies between departments and timely information quickly for managers for timely decision-making in the should / should not provide services to clients; decided to mobilize and take advantage of resources available to the company to meet the requirements, customer suggestions. Besides, managers must also take responsibility in market research surveys, capture the diverse needs of logistics service of each customer to have the best service plan.

- The management unit should also notion that customers were finding difficult, care and customer retention is even more difficult. So finding different options, especially the improvement and renewal of customer care sewn from sending a thank you note after the signing of contracts, e-mail notification about the progress of perform the contract ... until the researchers built a system of sales policy, care is something that the management company that provides logistics services to the note.

- In addition to constantly improve and enhance the material foundations especially the means of providing services, strengthening training, professional training, ethics and professional responsibilities for staff providing logistics services to customers must be regular jobs is an investment, adequate attention from the leaders of the company. Because the human factor is always the deciding factor and have the greatest impact to improve service delivery to meet the next element of tangibles.

## **6.3. The limitations of the study and suggestions for subsequent studies:**

- This study was perform according to convenience sampling method should bring results carrying heavy subjective elements of the study's authors, reduced objectivity and generalizability. So further research should consider the use of probability sampling methods because it ensures greater representation and increase in the size of the study sample for analysis more precise, Essential more merchandise.

- This study was only perform in the form of ownership of the customers is the type of business, rather than considering the effects of factors such as domestic and foreign

customers, the size and nature of the case copper, the scale of enterprises using the service and other factors.

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