

Statistical analysis of factors affecting the service quality of Jetstar Pacific Airlines

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ABSTRACT:

The aim of this paper is to study the effects of service quality in Jetstar Pacific Airlines towards customer's satisfaction under the perspective of Servqual and Gronroos service quality model and the relationship between functional quality, technical quality,

internal and external environment influences mediated by Jetstar Pacific Airlines images and service quality using the main statistical methods such as factor analysis and multiple linear regression.

Key words: Service quality, Servqual, Technical and functional quality model, Factor analysis.

1. INTRODUCTION

Service quality and customer satisfaction are very closely related. Understanding, building and maintaining quality are the main concerns of airlines industry today. To measure the service quality, we used Servqual and Gronroos model in various aspects of its business environment.

Several statistical methods and techniques may be used to analyze these models-based service quality dimensions. In particular, the so-called gap analysis can be employed in order to ascertain any actual or perceived gaps between customer expectations and perceptions of the service offered efficiency. Moreover, this analysis is to point out how management of service improvement can become more logical and integrated with respect to the prioritized service quality dimensions and their affections on increasing/decreasing service quality gaps. To this end, several methods have extensively been used. For instance, the model service of quality

may be simply evaluated by adopting: correlation analysis, reliability analysis, factor analysis and multiple linear regression.

Therefore from this paper, we believe that this conceptual paper will help the management of Jetstar Pacific Airlines to better understand their service quality which help them to draw specific guidelines to meet customers expectations.

2. SERVICE QUALITY

2.1. Servqual model

Parasuraman et al. [1], [6] proposed that service quality is a function of the differences between expectation and performance along the quality dimensions. They developed a service quality model based on gap analysis. The five main gaps visualized in the model are: difference between customers' expectations and managements perceptions, difference between

management's expectation and customers' perceptions, difference between service quality specifications and service actually delivered, difference between service delivery and communications about service delivery, difference between customers' expectations and perceived services. According to this model, the service quality is a function of perception and expectations and can be modeled as:

$$SQ = \sum_{j=1}^k (P_{ij} - E_{ij})$$

Where: SQ: Overall service quality; k: number of attributes; P_{ij} : Performance perception of stimulus i with respect to attribute j ; E_{ij} : Service quality expectation for attribute j that is the relevant norm for stimulus i .

This exploratory research was refined with their subsequent scale named Servqual for measuring customers' perceptions of service quality. Servqual has five main dimensions to measure

service quality: reliability, responsiveness, assurance, empathy and tangibles.

2.2. Functional and technical quality model

Gronroos [6] developed service quality model with three dimensions: functional quality, technical quality and image.

Functional quality is how he/she gets the technical outcome. This is important to him/her and to his/her views of service he/she has received.

Technical quality is the quality of what consumer actually receives as a result of his/her interaction with the service firm and is important to him/her and to his/her evaluation of the quality of service.

Image is very important to service firms and this can be expected to built up mainly by technical and functional quality of service including the other factors (tradition, ideology, word of mouth, pricing and public relations).

2.3. Research model proposed

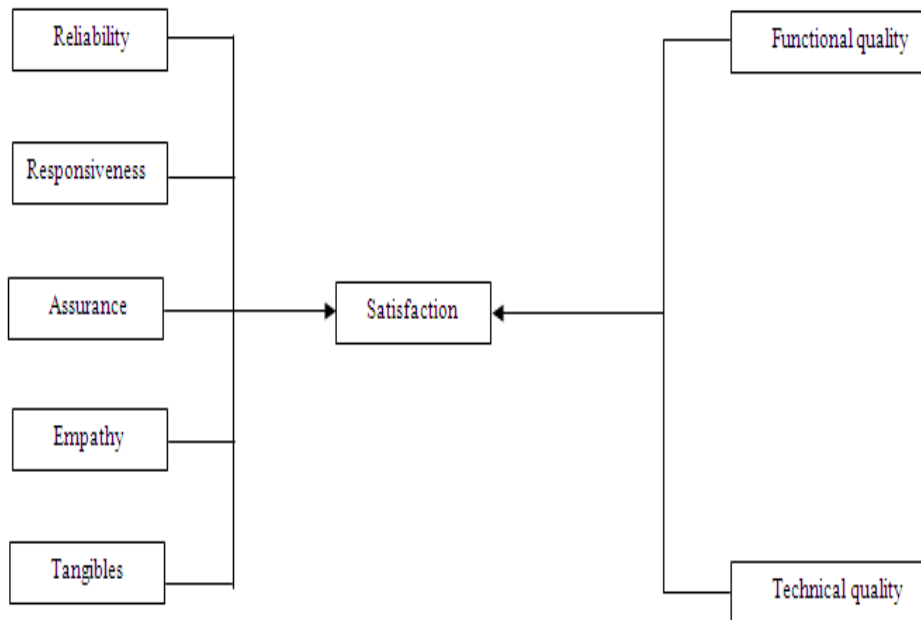


Figure 1. Research model proposed

3. METHODOLOGY

3.1. Questionnaire design

The questions were rated using 5-point Likert scale. Perceptions were rated from 1 = completely disagree to 5 = strongly agree, and expectations were rated from 1 = unimportant to 5 = very important. The questionnaire was examined by one pilot of Jetstar Pacific Airlines and two staffs of Vietnam Airlines and their contributions were incorporated. The content validity of the questionnaire was deemed

adequate. When distributed, the questionnaire was accompanied by a cover letter explaining the objective of the survey and assuring confidentiality of respondents.

3.2. Sampling

The sample was taken from the customers of Jetstar Pacific Airlines. A convenient sample size of 230 respondents were selected from the 300 customer surveys. The survey yielded a response rate of 76,67%. The main dimensions are depicted in Table 1.

Table 1. Developed based on Gronross (1984); Parasuraman et al. (1985).

Codes	Dimensions
	Reliability
TC01	Jetstar Pacific always conducts the service as good as pledged
TC02	When you have questions or complaints, Jetstar Pacific always provides satisfying feedback and solution
TC03	Jetstar Pacific always informs you about the service time in advance
TC04	Jetstar Pacific always provides the on-time-service as promised
TC05	Jetstar Pacific fully carries out the service right at the first time
	Responsiveness
DU01	Jetstar Pacific staffs serve you friendly and honestly
DU02	Jetstar Pacific staffs always understand your request correctly with enthusiasm and warm attention
DU03	Jetstar Pacific staffs swiftly perform their task for completely meeting your requirements
	Assurance
DB01	Jetstar Pacific staffs are increasingly getting more trust from the passengers
DB02	You feel safe when using the service Jetstar Pacific
DB03	Jetstar Pacific staffs' communication is always courteous and polite
DB04	Jetstar Pacific staffs have enough specialized knowledge to answer your questions
	Empathy
DC01	Jetstar Pacific does care about passengers

DC02	Jetstar Pacific staffs understand the special needs and interests of you
DC03	Jetstar Pacific has staffs displayed a concern for you
DC04	Jetstar Pacific pay attention to your great interests
	Tangibles
HH01	Jetstar Pacific has a modern equipment
HH02	Jetstar Pacific'physical facilities look almost professional and eyecatching
HH03	Jetstar Pacific staffs get decent clothes
HH04	Tangibles has very exciting (onboard amenities; ticket booking services at the box office, by phone, via online, etc)
HH05	Jetstar Pacific arrange a reasonable time and a convenient tangibles
	Functional quality
CN01	Jetstar Pacific staffs treat your courteously and friendly
CN02	Jetstar Pacific staffs have enough specialized knowledge and capacity to make you have a satisfactory explanation for their services and policies
CN03	Jetstar Pacific staffs keep your personal information in secret
CN04	Jetstar Pacific staffs are always ready to answer your questions
CN05	Jetstar Pacific has a meet your requirements
CN06	Jetstar Pacific has always done exactly the right transactions
	Technical quality
KT01	Jetstar Pacific is ready to meet your needs for its services
KT02	Jetstar Pacific create good for condition you to do terms of payment (pay directly in cash, pay by credit or debit card, etc)
KT03	Service costs are competitive in Jetstar Pacific
KT04	Jetstar Pacific has a competitive fares
KT05	Jetstar Pacific has always respond to your service requirements at the proper time
KT06	Service Jetstar Pacific is easy and convenient for you
KT07	Jetstar Pacific is interested in your demand arose
TM	Satisfaction
TM01	You are completely satisfied with the quality of service Jetstar Pacific
TM02	You will introduce the advantages of Jetstar Pacific to others
TM03	You will continue to use the service Jetstar Pacific in the next times

4. DATA ANALYSIS

4.1. Descriptive statistics

The characteristics of the respondents are presented in Table 2. In terms of gender, 70% of the respondents were males and 30% were females. 50.43% of the respondents were within

the ages of 20-35 years, 15.22% were between 36 and 50 years, 20 % were between 51 and 65 years, implying that majority of them were in the economically active population.

Table 2. Respondents' characteristics (n = 230)

		Frequency	%
Gender	Male	161	70
	Female	69	30
Age	Under 20	25	10.87
	20 – 35	116	50.43
	36 - 50	35	15.22
	51 - 65	46	20
	Over 65	8	3.48
Marital status	Not married yet	50	27.41
	Married without children yet	39	16.96
	Married and having children	141	61.30
Occupation	Pupil, student	25	10.87
	Normal staff	105	45.65
	Specialist management	19	8.26
	Secretary, assistant	41	17.83
	Entrepreneur, senior manager	21	9.13
	Others	19	8.26

4.2. Correlation analysis

Correlation analysis measures the relationship between two items. The resulting value (called the “correlation coefficient”) shows

if changes in one item will result in changes in the other item. Figure 2 is the correlations among the variables in the analysis.

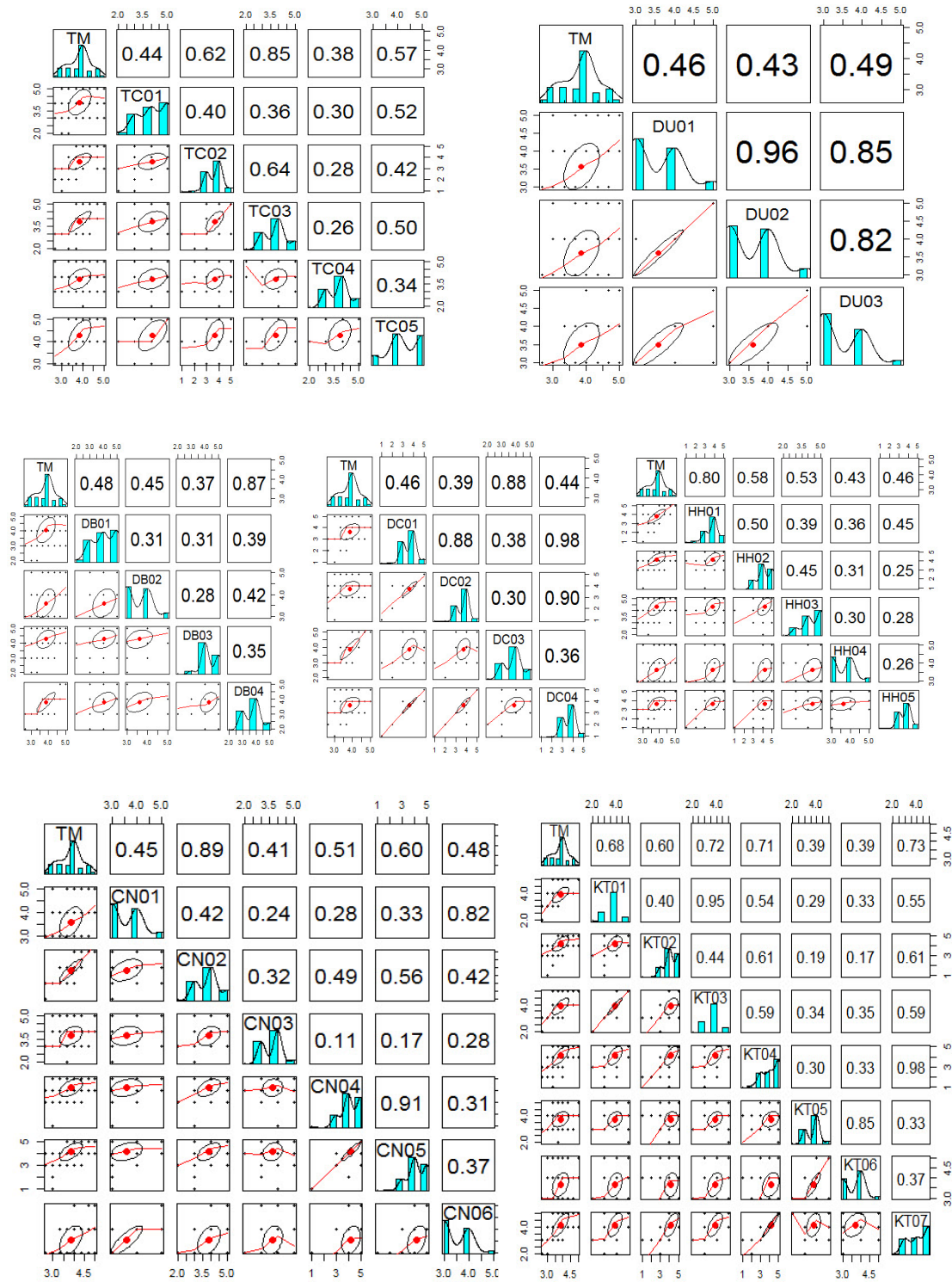


Figure 2. Correlations among the variables

4.3. Reliability analysis

This measures the overall consistency of the items that are used to define a scale. As a result, we are given sample size, number of items and

reliability coefficients. Cronbach's Anpha is the most popular. Table 3 show Cronbach's Anpha from 0.669 to 0.956.

Table 3. Scale reliability

Multi-Item (Dimensions)	Scale	Cronbach's Anpha	Number of items
Reliability		0.768	5
Responsiveness		0.956	3
Assurance		0.669	4
Empathy		0.872	4
Tangibles		0.736	5
Functional quality		0.804	6
Technical quality		0.866	7
Satisfaction		0.760	3

4.4. Factor analysis

Factor analysis is a data reduction technique that uses correlations between data variables. The results of the factor analysis show a high value from 0.5 to 1 for the Kaiser-Meyer-Olkin Measure and indicate the suitability of the research data. This is confirmed by the significance of the Bartlett's test of sphericity

tests. On the criteria for selecting factor loading, generally factor loading above 0.5 is considered. Other factor loadings that do not satisfy the above criteria are considered meaningless and can be removed, while the high loading factors are critical factors and therefore can be retained. Table 4 show the results of factor analysis.

Table 4. Regrouping of questionnaire items

Emerged factor	Retained Items	Labels for component dimensions
X ₁	CN01, CN06, DU01, DU02, DU03, DB02, HH04	Perception of responsiveness
X ₂	DC01, DC02, DC04, KT05, KT06, CN03, HH05	Perception of empathy
X ₃	TC02, TC03, HH01, CN02, DC03, DB04	Perception of expertise
X ₄	CN04, CN05, HH02, KT02	Perception of usefulness
X ₅	DB01, TC01, TC05, HH03	Perception of environment

4.5. Multiple linear regression

Results factor analysis used to handle multiple linear regression. The results are presented in Figure 3.

Linear model:

$$TM = 0.72171 + 0.72167X_3 + 0.09259X_5$$

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Residuals:
    Min       1Q   Median       3Q      Max
-0.52099 -0.11741  0.02122  0.11409  0.77040

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept)  0.72171    0.09758   7.396 2.69e-12 ***
X3           0.72167    0.02624  27.504 < 2e-16 ***
X5           0.09259    0.02400   3.858 0.000149 ***
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.2109 on 227 degrees of freedom
Multiple R-squared:  0.8451,    Adjusted R-squared:  0.8437
F-statistic: 619.3 on 2 and 227 DF,  p-value: < 2.2e-16
    
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Figure 3. Multiple linear regression results

5. CONCLUSIONS

Research model proposed seven factors affecting the service quality of Jetstar Pacific Airlines include: reliability, responsiveness, assurance, empathy, tangibles, functional quality and technical quality. After evaluating the reliability and factor analysis, the five emerged dimensions with twenty-eight items, being “Perception of responsiveness”, “Perception of

empathy”, “Perception of expertise”, “Perception of usefulness”, and “Perception of environment” could be used as critical factors in evaluating service quality in Jetstar Pacific Airlines. Results of multiple linear regression multivariate linear regression analysis identified the service quality of Jetstar Pacific Airlines affected by two emergerd factors are “Perception of expertise” and “Perception of environment”.

Phân tích thống kê các nhân tố ảnh hưởng đến chất lượng dịch vụ hãng hàng không Jetstar Pacific

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TÓM TẮT:

Mục tiêu của báo cáo này là nghiên cứu các nhân tố tác động tới sự hài lòng của khách hàng về chất lượng dịch vụ của hãng hàng không Jetstar Pacific theo quan điểm Servqual và Gronroos, cũng như mối quan hệ giữa chất lượng

chức năng, chất lượng kỹ thuật, ảnh hưởng môi trường bên trong và môi trường bên ngoài thông qua hình ảnh và dịch vụ của hãng sử dụng các phương pháp thống kê chính như phân tích nhân tố và hồi quy tuyến tính đa biến.

Từ khóa: Chất lượng dịch vụ, Servqual, Mô hình chất lượng chức năng và kỹ thuật, Phân tích nhân tố

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