# THE EFFECT OF AIR POLLUTION CONTROL SERVICE ON CUSTOMER SATISFACTION (A CASE STUDY AT COMPANY XYZ)

# YAP XUE NEE

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

# **APPROVAL**

I hereby acknowledge that I have read this thesis and in my opinion this work sufficient in terms of scope and quality for the award of Bachelor of Technopreneurship

Signature	·
Supervisor	:Ir. Budiono Hardjono
Date	

# THE EFFECT OF AIR POLLUTION CONTROL SERVICE ON CUSTOMER SATISFACTION (A CASE STUDY AT COMPANY XYZ)

# YAP XUE NEE

This report submitted in accordance with requirement of the Universiti Teknikal Malaysia Melaka (UTeM) for the Bachelor Degree of Technopreneurship with Honours (BTEC)

Faculty of Technology Management and Technopreneurship (FPTT)
Universiti Teknikal Malaysia Melaka

JUNE 2013



# DECLARATION OF ORIGINAL WORK

"I haraby declare that the y	york of this research is mine except for the quotation
•	s that have been duly acknowledged"
Summaries	s that have been dury acknowledged
Signature	······
Name	·
Date	<b></b>

#### **DEDICATION**

First at all, I would like to thank to my beloved family who had always supported me and encouraged me with good advices in order to complete my final year project (PSM) within 2 semesters to fulfill my Bachelor of Degree requirement.

I would like to express my greatest gratitude to my parent, who had sent me to UTeM to complete my Bachelor of Technopreneurship. I am sincerely would like to thank them for willing spent money to complete my final year project (PSM). I am felt proud to complete my PSM by fully support and encourage by lovely family and parent.

#### **ACKNOWLEDGEMENT**

First of all, I would like express my deepest gratitude and appreciation to my supervisor, Ir. Budiono Hardjono for his excellent guidance and comments during the development of this project. His enthusiasm and encouragement for this project had helped the researcher greatly towards completing this Final Year Project.

Secondly, I would thankful to the respondents for spacing their time to complete the questionnaires. Without them, it would be impossible for me to complete the project in time.

Lastly, I would deeply thank to my families and friends for all the encouragements they gave to me during this study.

**ABSTRACT** 

The purpose of this study is to test the SERVQUAL model is in the context of

air pollution control service. And also to identify the relationship between the

customer service quality and customer satisfaction and thus whether they are

satisfied with services offered by this air pollution control company. Six service

quality dimensions namely reliability, assurance, tangible, empathy, responsiveness,

and technical quality has been established based on the SERVQUAL model

developed by Parasuraman et al, (1985). Mixed method (Quantitative and Qualitative

method) was conducted in this study. The data were gathered through survey

questionnaires. Questionnaires were used to obtain feedback from 100 respondents

who are the existing customer from company XYZ. The questionnaires that have

been distributed used a five-point Likert scale to determine the customer satisfaction

towards the air pollution control provider. In this study, the research hypotheses are

tested by using reliability test, cross-tabulation, and Pearson's Correlation Coefficient.

The result from the data analysis, all the dimensions of service quality have a

positive relationship with service quality on customer satisfaction. The technical

quality is the most nearest to customer satisfaction which mean that is the most

influence customer satisfaction, followed by assurance, reliability, tangible, empathy

and responsiveness. In conclusion, this study is important to assist that company in

determining which factor does the customer emphasized on as well as suggesting

recommendations to improve their quality service in the future.

**Keywords**: SERVQUAL model, service quality and customer satisfaction.

#### **ABSTRAK**

Kajian ini bertujuan untuk menguji model SERVQUAL dalam konteks perkhidmatan kawalan pencemaran udara. Kajian ini juga bertujuan untuk mengenal pasti hubungan antara kualiti perkhidmatan pelanggan dan kepuasan pelangan terhadap syarikat pembekal kawalan pencemaran udara. Enam dimensi kualiti perhidmatan iaitu kebolehpercayaan, jaminan, keketaraan, empati, responsif or tindak balas, and teknikal kualiti telah ditubuhkan berdasarkan model SERVQUAL yang dibangunkan oleh Parasuraman et.al, (1985). Keadah campuran iaitu kuantitatif dan kualitatif telah digunakan dalam kajian ini. Data yang diperolehi melalui kajian soal selidik. Kajian soal selidik telah digunakan untuk mendapat tindak balas daripada 100 responden yang pernah menguna perhidmatan daripada company XYZ. Dalam kajian ini telah mengunakan pengujian reliabilitas, tabulasi silang dan teknik korelasi untuk menganalisis data yang dapat daripada 100 responden. Hasil daripada analisis data untuk kajian ini, didapati bahawa semua dimensi kualiti perkhidmatan mempunyai hubungan yang positif dengan kualiti perhidmatan terhadap kepuasan pelangan. Teknikal kualiti diemensi adalah paling memenuhi kepuasan pelanggan. Ini bermakan teknikal kualiti adalah paling mempengaruhi kepuasan pelanggan, diikuti dengan jaminan, kebolehpercayaan, keketaraan, empati, dan responsif. Kesimpulannya, kajian ini adalah penting untuk membantu syarikat itu supaya boleh menentukan faktor yang mana pelanggan paling menekankan dan cadangan untuk meningkatkan kualiti perkhidmatan mereka pada masa hadapan.

Kata Kunci: SERVQUAL model, kualiti perkhidmatan, dan kepuasan pelanggan.

# TABLE OF CONTENTS

CHAPTER	TITL	E	PAGE
	DECL	LARATION	ii
	DEDI	CATION	iii
	ACKN	NOWLEDGEMENT	iv
	ABST	TRACT	V
	TABL	E OF CONTENTS	viii
	LIST	OF TABLE	xii
	LIST	OF FIGURES	xiii
	LIST	OF SYMBOLS	xiv
	LIST	OF ABBREVIATIONS	XV
	LIST	OF APPENDIES	xvi
CHAPTER 1	INTR	ODUCTION	1
	1.1	Background of Study	1
	1.2	Problem Statement	2
	1.3	Research Question	3
	1.4	Research Objectives	4
	1.5	Hypothesis the Study	4
	1.6	Scope, Limitation and Key Assumption	5
	1.7	Significance of the Study	6
	1.7.1	Organization	6
	1.7.2	Managers or Executives	7
	1.7.3	Researcher	7

BAB	TITL	E	PAGE
	1.8	Summary	8
CHAPTER 2	LITE	RATURE REVIEW	9
	2.1	Introduction	9
	2.2	Service Concepts	9
	2.3	Service Quality	10
	2.4	SERVQUAL Model and its Dimension	11
	2.5	Dimension of this Study	13
	2.5.1	Reliability	14
	2.5.2	Assurance	15
	2.5.3	Tangible	15
	2.5.4	Empathy	16
	2.5.5	Responsiveness	16
	2.5.6	Technical Quality	17
	2.6	Customer Satisfaction	17
	2.7	Relationship between Service Quality and	19
		Customer Satisfaction	
	2.8	Proposed Theoretical Framework	20
	2.9	Summary	21
CHAPTER 3	RESE	ARCH METHOD	22
	3.1	Introduction	22
	3.2	Research Design	23
	3.2.1	Deductive Approach	23
	3.2.2	Descriptive Research	24
	3.2.3	Explanatory Research	24
	3.3	Mixed Method	25

BAB	TITLE		PAGE
	3.4	Primary and Secondary Data Sources	26
	3.5	Location of Research	27
	3.6	Research Strategy	28
	3.6.1	Survey Method	28
	3.6.2	Questionnaires Method	29
	3.6.3	Questionnaires Design	30
	3.6.4	Sampling and population	30
	3.6.4.1	Sampling Size and Location	31
	3.6.4.2	Sampling Element	31
	3.7	Time Horizon	31
	3.8	Data Analysis	32
	3.8.1	Descriptive Analysis	32
	3.8.2	Reliability Analysis	32
	3.8.3	Cross-Tabulation	33
	3.8.4	Pearson Correlation Coefficient Analysis	33
	3.9	Validity, Generalizability, and Reliability	33
	3.10	Summary	35
CHAPTER 4	ANALY	YSIS AND DISCUSSION	36
	4.1	Introduction	36
	4.2	Descriptive Analysis	36
	4.2.1	Respondent's General Information	37
	4.2.1.1	Air Pollution Control User	38
	4.2.1.2	Duration of Using APC Service	38
	4.2.1.3	Average Spending per Month	30
	4.2.2	Demographic Question	40
	4.2.2.1	Gender	40

BAB	TITLE		PAGE
	4.2.2.2	Age	41
	4.2.2.3	Industry	42
	4.2.2.4	Occupation	43
	4.2.3	Degree of Satisfaction with overall service	44
	4.3	Cross Tabulation	45
	4.3.1	Duration * Industry	45
	4.3.2	Duration * Average spending per month	47
	4.3.3	Average spending per month * Industry	48
	4.3.4	Gender * Age	49
	4.3.5	Gender * Occupation	50
	4.3.6	Overall Satisfaction of service quality *	51
		Industry	
	4.4	Important of Service Quality	52
	4.5	Assessment of Service Quality Dimension	53
	4.6	Cronbach's Alpha test of Reliability	60
	4.7	Pearson's Correlation Analysis	60
	4.8	Summary of Hypothesis Testing Results	64
	4.9	Conclusion	64
CHAPTER 5	CONC	LUSION	65
	5.1	Conclusion	65
	5.2	Recommendation for Future Research	66
	REFEI	RENCES	68
	APPEN	NDIX	76

# LIST OF TABLE

TABLE	TITLE	PAGE
1.1	Hypothesis for this Study	4
2.1	Dimension of SERVQUAL Model	13
4.1	Result Descriptive Statistics Important of Service	52
	Quality	
4.2	Cronbach's Alpha Score	60
4.3	Result of Pearson's Correlation Analysis	61
4.4	Result of Summary of Research Hypotheses	64

# LIST OF FIGURES

<b>FIGURES</b>	TITLE	PAGE
2.1	Theoretical Framework for this Study	20
4.1	Air Pollution Control (APC) Service User	38
4.2	Duration of Using Air Pollution Control Service	38
4.3	Average Spending per Month	39
4.4	Gender	40
4.5	Age	41
4.6	Industry	42
4.7	Occupation	43
4.8	Degree of Satisfaction with Overall Service Quality	44
4.9	Result of Cross Tabulation Duration on Industry	45
4.10	Result of Cross-Tabulation Duration of using APC	47
	service on Average Spending Per Month	
4.11	Result of Cross Tabulation Average Spending per	48
	Month on Industry	
4.12	Result of Cross Tabulation Gender on Age	49
4.13	Result of Cross Tabulation Gender on Types of	50
	Occupation	
4.14	Result of Cross Tabulation Overall Satisfaction	51
	of Service Quality on Industry	
4.15	Result of Service Quality Dimension	53

# LIST OF SYMBOLS

\* = Cross Tabulation

# LIST OF ABBREVIATIONS

APC = Air Pollution Control

DOE = Department of Environmental

 $H_0$  = Null Hypothesis

H<sub>a</sub> = Alternative Hypothesis

H1 = First Hypothesis

H2 = Second Hypothesis

H3 = Third Hypothesis

H4 = Fourth Hypothesis

H5 = Fifth Hypothesis

H6 = Sixth Hypothesis

SPSS = Statistical Packages for the Social Science

UTeM = University Technical Malaysia Malacca

XYZ = Company for this study

C Universiti Teknikal Malaysia Melaka

# LIST OF APPENDIX

NO	TITLE	PAGE
A	Questionnaires	76
В	Result of Descriptive Statistics of Respondent's	81
	General and Demographics Information	
C	Cross Tabulation Duration * Industry	82
D	Cross Tabulation Duration of using air pollution	83
	control service * Average spending per month	
E	Cross Tabulation Average Spending per month *	84
	Industry	
F	Cross Tabulation Gender * Age	85
G	Cross Tabulation Gender * Occupation	86
Н	Cross Tabulation Overall satisfaction of service	87
	quality * Industry	
I	Descriptive Statistics of Service Quality	88
J	Result of Service Quality	89
K	Result Descriptive Statistics of Service Quality	90
L	Reliability Test	91
P	Correlation Analysis	92

#### **CHAPTER 1**

#### INTRODUCTION

# 1.1 Background of study

There are a lot of new technologies, innovation on transportation, lifestyle, and almost everything around us is occurring every day. Over burning of fossil fuels such as gasoline and natural gas will bring heavy negative impact to environmental. According to Urban Air Quality Management (2006), the major industries in the country affecting air quality are the iron and steel industry, oil and gas industry, petrochemical industry, pulp and paper, and power plants. According to Urban Air Quality Management (2006), industries rubber and oil palm process and manufacturing in Peninsular Malaysia also affecting air quality. According to World Health Organization (2005), industry mobile and stationery are the most significant sources of pollution. According to Department of Environmental (DOE), has organised awareness programmes and environmental education for increasing public awareness to the protection of air environmental. Therefore, air pollution control equipment, systems, and services are needed to reduce air pollution control in industries.

This study aims to examine how to maintain and increase customer satisfaction in Air Pollution Control service and how affect customer service quality on customer satisfaction. A theoretical framework is proposed to study the

relationship between service quality and customer satisfaction in research model. However, this research study can improve the limitation of air pollution control service, provide the conception and support for future.

According to business dictionary, state that perceived quality as consumer's opinion of a product's ability to fulfil his or her expectations. Besides, statement from Gummesson, 1998, state that improvement in customer perceived quality will increase customer satisfaction, loyalty and profitability as well. However, the researcher will study what are the dimensions of service quality that can satisfy customer and how relationship between perceived quality and customer satisfaction.

According to Kolter (2000), customer satisfaction can define as a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance (or outcome) in relation to his or her expectation. Hoyer and MacInnis (2001) said that satisfaction can be associated with feelings of acceptance, happiness, relief, excitement, and delight. In order to achieve customer satisfaction, organization must be able to satisfy their customer needs and wants (La Barbera and Mazursky, 1983).

### 1.2 Problem Statement

This study was focused on air pollution control provider. The business activities of this air pollution control provider are supply, manufacturer, installation, sales and service for the air pollution control system, equipment, and also service to their customers. Customer satisfaction is very important indicator to know until what level services had been delivered by company to their customers. Although company is aware about this, but for the time being there is no standard measurement applied to the company.

From various studies conducted by previous researchers, SERVQUAL model is one of the approaches that can be used to find out the effect of service quality dimension to the level of customer satisfaction in the service industries. It is been conducted by many researchers in the different service industries such as telecommunication, banking, and restaurant. Since air pollution control provider can be considered as a part of service industry, using the same approach, the customer satisfaction level of the company can be determined. Therefore there are two main problems need to be identified in this study as the followings:

- Company need to identify quality of service in order to satisfy their customers
- 2. Company needs a model to test the service quality on customer satisfaction.

It is important to understand the relationship between customer service quality and customer satisfaction so that the company can do the necessarily actions to increase and maintain the loyalty of their customers.

# 1.3 Research Questions

Below are the questions that this paper attempts to answer:

- 1. How to measure the relationship between air pollution control service qualities and customer satisfaction?
- 2. How to apply the SERVQUAL model in the air pollution control service?

# 1.4 Research Objectives

The main objective of this study is to test the SERVQUAL model in the context of the air pollution control provider in order to know its applicability the measurement of service quality and customer satisfaction. Besides that, this study is also aims to identify the relationship between air pollution control service quality and customer satisfaction for that company. However, the objectives of this study are listed as below:

- 1. To identify the relationship between air pollution control service quality and customer satisfaction
- 2. To test the SERVQUAL model in context of air pollution control service

# 1.5 Hypothesis the study

Due to this study need to identify the relationship between the service quality and customer satisfaction in that company, so the researcher was used the hypothesis to measure both of them. Table 1.1 was shown the hypothesis of this study.

Table 1.1: Hypothesis Testing for this Study

H1	Ho: No relationship between reliability dimensions on customer satisfaction.
	Ha: Has relationship between reliability dimensions on customer satisfaction.
H2	Ho: Has relationship between tangible dimensions on customer satisfaction.
	Ha: Has relationship between tangible dimensions on customer satisfaction.
Н3	Ho: No relationship between empathy dimensions on customer satisfaction.
	Ha: Has relationship between empathy dimensions on customer satisfaction.
H4	Ho: No relationship between responsiveness dimensions on customer satisfaction.
	Ha: Has relationship between responsiveness dimensions on customer satisfaction.
Н5	Ho: No relationship between assurance dimensions on customer satisfaction.
	Ha: Has relationship between assurance dimensions on customer satisfaction.
Н6	Ho: No relationship between technical quality dimensions on customer satisfaction.
	Ha: Has relationship between technical quality dimensions on customer satisfaction.

# 1.6 Scope, Limitation and Key Assumption of the Study

Based on the objectives, the scopes of study are highlighted into four. The first is to improve the air pollution control service in order to satisfy customer needs. The purpose to improve the company's service quality is can help that company development. That is because customer will purchase their product or service if the company's service is satisfy their needs. If the customer purchases their product or service, the company will get the profit because the customer is the key for their income.

The second is to maintain and increase customer satisfaction. If the company provide a good service to their customer, it may increase the customer satisfaction. The next scope of this study is only studies on company XYZ. That is

because company XYZ was establishing long in Malaysia so that the company need to know customer satisfaction about their product or service. So, this study only focuses on company XYZ.

Lastly is the research focus on Selangor. That is because Selangor is one of the states in Malaysia and the company's headquarter also at Selangor. So, it is useful to the researcher to obtain the data from that company.

The researcher aim is to research and analyse about the effect service quality on customer satisfaction in air pollution control service. The researcher wants to find out the relationship between service quality and customer satisfaction through the customer point of view. However, this study does not focus on produce, technology, business loyalty, and promoting them to the market as well.

On the other hands, there are two key assumption of this study. The first is not changing of managerial and the second is not changing technologies in industry. Both assumption will not changing in this study because if one of them or both change will influence that companies' sales. Existing or potential customer will shift to other competitive companies if both assumptions changed.

#### 1.7 Significance of the study

# 1.7.1 Organization

A good delivery of quality service represents a positive image of the organization to the customers. In other words, if customers are satisfied with the

services provided, it will assist the organization to remain competitive in the market and thus, allowing them to maintain a positive corporate image. Therefore, this research serves as a reference for organizations to improve its service quality in the future as well as to determine consumers' perceptions towards quality air pollution service.

# 1.7.2 Managers or Executives

This research provides helpful guidelines for managers and executives in understanding the key drives of customer satisfaction in the use of air pollution control equipment, system and service. Besides that, it is also assists them in identifying certain service attributes where they should emphasize on and thus, launching promotion based on targeting customers' needs.

#### 1.7.3 Researcher

This study serve the purpose of increasing the researcher knowledge on the field of customer satisfaction towards service providers whereby the seven distinct services attributes of air pollution control service. In addition, this research also provides conceptual and empirical support for future studied based on these constructs.