

Factors Influencing Passengers' Satisfaction, Loyalty, and Retention with the BTS Services in Bangkok, Thailand

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Abstract—This study attempted to determine the level of the quality of services of the BTS in Bangkok and how it influenced passengers' satisfaction, loyalty, and retention of services.

Convenience sampling was used to collect data from 200 respondents. Statistical tools used consisted of mean, standard error of mean, coefficient of variation, rank and multiple regression analysis.

The findings showed that the level of quality of services of the BTS in Bangkok as perceived by the passengers was high in terms of safety, security, directions and services time. It was also found that passengers' levels of satisfaction as well as level of retention of services were both high while passengers' loyalty was moderate.

Keywords— satisfaction, loyalty, and retention, quality, safety and security.

I. INTRODUCTION

The Importance of the BTS (Bangkok Mass Transit System)

Mass transit is one of the public transportation systems designed to move large numbers of passengers. From the economical point of view mass transit systems offer considerable savings in labor, materials, and energy over private transit system. When utilized to any reasonable fraction of their capacity, mass transit vehicles carry a far higher passenger load per unit of weight and volume than do private vehicles. They also offer fuel savings, not only because of the relative reduction in weight transported, but also because they are large enough to carry more efficient engines.

Further, from the social point of view, if emphasis is given to mass transit in the planning of future ground transportation systems; smaller rights of way will be possible, lessening the amount of landscape that must be paved over for highways and roads. However, as the public has grown increasingly concern over the impact of cars on the environment and the quality of life in urban areas, there is growing support for the development of more efficient and comfortable mass transit

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systems.

Since December 1999 to 2010, BTSC has serviced more than 1,160 million trips with no loss of life and no significant injury. BTSC is dedicated to implementing strict safety codes; all BTS Sky Trains and stations are equipped with emergency equipment, and BTSC has a handbook on rules, regulations and emergency procedures available to all passengers. BTSC tested its system for over 6 months prior to starting official operations in order to identify and correct any flaws in the safety system.

In every station, there are some directions to enter into platforms and stations, exit from platform and stations, direction for next station, and for some shopping malls, and hotels. There are some directions inside the train on how to use emergency door, hold the handle, don't lean against door etc.

The BTS is providing service time from 6:00 o'clock in the morning to midnight 12:00 for every station for all passengers. After every 5 minutes passengers can get into a train in every station.

Research Questions

This study was aimed to focus on the following questions:

1. What is the level of the quality of services of the BTS in Bangkok as perceived by the passengers in terms of safety, security, directions and service time?
2. What is the level of passengers' satisfaction, passengers' loyalty, and passengers' retention of BTS services?

Objectives of the Study

1. To determine the quality of services of the BTS in Bangkok as perceived by passengers in terms of safety, security, directions, and service time.
2. To determine the passenger satisfaction, passenger loyalty and passenger retention.
3. To investigate the influence of the quality of services toward passengers' satisfaction, passengers' loyalty, and passengers' retention of the BTS services in Bangkok.

Scope of the Study

Independent variables:

The level of the quality of services of the BTS as perceived by the passengers consists of safety, security, direction and service time.

Dependent variables:

Passengers' satisfaction consists of overall satisfaction, fulfillment of expectations, and comparison with ideal.

Passengers' loyalty consists of reusing intention; pay higher for the use of other services, and recommendation to others.

Passengers' retention is defined as the willingness to use BTS in the future.

Population: Passengers whose age 15 years old and above, and use the BTS in Bangkok.

The conceptual framework of the study:

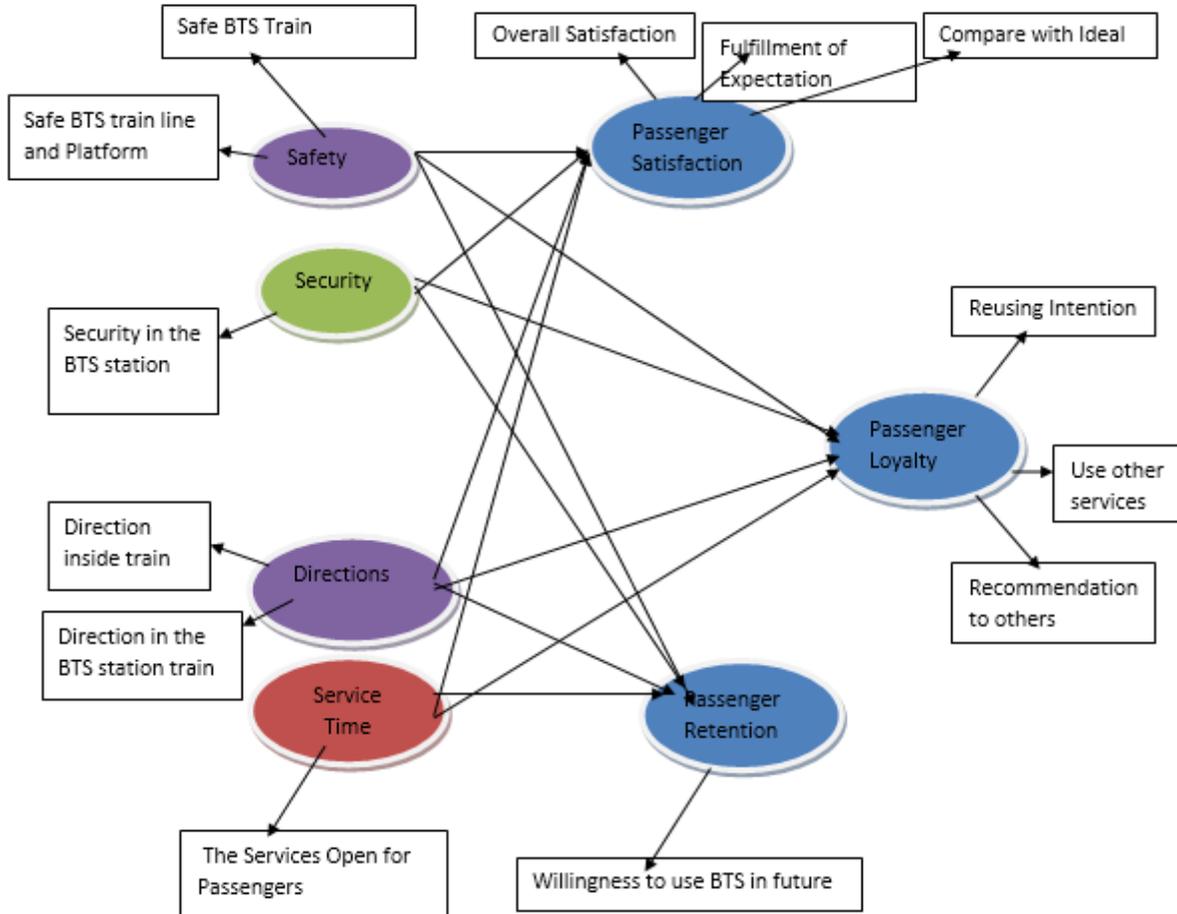


Fig. 1 The Conceptual Framework of the Study

II. RESEARCH METHODOLOGY

The main purposes of this study were to determine the quality of services of the BTS in Bangkok, and to determine the level of passengers' satisfaction, passengers' loyalty, and passengers' retention of using the BTS in Bangkok, as well as to investigate the influence of the quality of services toward passengers' satisfaction, passengers' loyalty, and passengers' retention of the BTS in Bangkok.

In order to achieve those purposes, descriptive research was used. The details of the research design are as follows:

Population and Sampling Technique:

Target population:

In this study, target population was all of the passengers who had used and/or had planned to use and/or will plan to use the BTS in Bangkok. The total number of passengers in

the year 2000 was 17,540,000 and increased 144,474,000 in the year 2010 as shown in Table 3.1. There was an increase the number of passengers in every year. In the year 2000 the average passengers per day was 148,641 and in the year 2010 it increased to 395,820. Also there was increase in the number of passengers per weekday, in the year 2000 it was 147,227 and increased to 451.300 in the year 2010. (BTS annual report 2009/2010; P52)

- **Sampling Technique:** For this study, convenience sampling was used to collect data from only one BTS station, respondents' age was 15 years old or above.
- **Sample Size Determination:** Due to limitation of time, it was decided that the sample size would be at least 200.

The details of the development of the survey questionnaire are shown as follows:

TABLE 3.2:
THE DETAILS OF THE DEVELOPMENT OF THE SURVEY QUESTIONNAIRE

Passenger Satisfaction			
Latent Variables	Observable Variable	Item Wording	Sources
Passenger Satisfaction	Overall Satisfaction	Overall, how satisfied are you with the BTS service?	Fornell et al., 1996; Hallowell, 1996; Keiningham et al., 2007; Qin & Prybutok, 2008; Turkyilmaz & Ozkan, 2007; Gronholdt et al., 2000; Donio', 2006
	Fulfillment of expectation	Did the BTS Service fulfill your expectation?	Fornell et al., 1996; Turkyilmaz & Ozkan, 2007; Gronholdt et al., 2000; Donio', 2006
	Compare with ideal	Imagine a company which is perfect in all aspects. How close to this ideal do you consider the BTS service to be?	Fornell et al., 1996; Turkyilmaz & Ozkan, 2007; Gronholdt et al., 2000
Passenger Loyalty			
Passenger Loyalty	Reusing intention	How likely are you to still be using the BTS service?	Gronholdt et al., 2000; Turkyilmaz & Ozkan, 2007; Fornell et al., 1996; Leverin & Liljander, 2006; Keiningham et al., 2007; Donio', 2006
	Price tolerance	As a passenger to this service, I feel like to pay more for better quality service, suppose taxi.	Gronholdt et al., 2000; Turkyilmaz & Ozkan, 2007; Fornell et al., 1996; Donio', 2006
	Recommendation to others	I would recommend the BTS to friends and relatives.	Gronholdt et al., 2000; Turkyilmaz & Ozkan, 2007; Leverin & Liljander, 2006; Keiningham et al., 2007; Donio', 2006
Passenger Retention			
Passenger Retention	Propensity to continuation/tendency to use again.	Passengers' willingness to use the BTS in the future.	Ranaweera & Prabhu, 2003
The Quality of Services			
Latent Variables	Observable Variable	Item Wording	Sources
Safety	Safe BTS platform, train line and BTS train	The condition of being protected from or unlikely to cause danger, risk, or injury.	http://www.thefreedictionary.com/safety
Security	Security in the BTS station	The state of being free from danger or threat. The safety of a state or organization against criminal activity such as terrorism or theft	http://www.thefreedictionary.com/security
Directions	Directions in the BTS station and inside the train	A post bearing a sign that gives information or guidance.	http://www.thefreedictionary.com/signpost
Service Time	BTS service time	Service time of the BTS is from morning 6:00 o'clock to midnight 12:00.	http://www.bts.co.th/en/btstrain.asp

Passengers' Satisfaction, Passengers' Loyalty and Passengers' Retention:

The data had been analyzed to find out the results of passengers' satisfaction, passengers' loyalty and passengers' retention.

TABLE 4.4:

RANK AND BASIC STATISTICS TO DETERMINE THE PASSENGERS' SATISFACTION, PASSENGERS' LOYALTY AND PASSENGERS' RETENTION

Components of Passengers' Satisfaction, Loyalty and Retention.	rank	Basic Statistics			
		Mean	s.d.	s.e (mean)	C.V.
Passengers' Retention	1	7.44	0.96	0.068	0.1290
Passengers' Satisfaction	2	7.65	1.01	0.071	0.1320
• Overall satisfaction	1	8.50	0.96	0.068	0.1129
• Fulfillment of expectation	2	7.64	1.06	0.075	0.1387
• Compare with others	3	6.82	1.01	0.071	0.1481
Passengers' Loyalty	3	6.49	0.99	0.070	0.1525
• Reusing intention	1	8.01	0.91	0.065	0.1136
• Recommend to others	2	6.78	1.07	0.076	0.1578
• Use another services	3	4.68	0.99	0.071	0.2115

Based on the results of data analysis for determining the level of the passengers' satisfaction, loyalty and retention of the BTS in Bangkok Table 4.4 shows that the level of the passengers' satisfaction, passengers' loyalty and passengers' retention was high. The mean values were 7.65, 6.49, and 7.44 respectively with standard deviation 1.01, 0.99, and 1.01 and theirs' standard error of the mean was 0.071, 0.070, and 0.070 respectively. The C.V values show that the level for passengers' loyalty, passengers' satisfaction, and passengers' retention was from high level to very high level.

Passengers' overall satisfaction, fulfillment of expectation, compared with other developed countries' train services the level of satisfaction was high. The mean values were 8.50, 7.64, and 6.82 respectively with standard deviation 0.96, 1.06, and 1.01 and the standard errors of mean were 0.068, 0.075, and 0.071 respectively. The C.V values were 0.1129, 0.1387, and 0.1481 respectively. Overall satisfaction, fulfillment of expectation, compared with other developed countries train services with the BTS in Bangkok were first rank, second rank, and third rank respectively.

For passengers' reusing intention the BTS, recommendation to others, and use other services, the level was high for reusing intention and recommendation to others but the level was very low for use of other services. The mean values were 8.01, 6.78, and 4.68 respectively with standard deviation 0.91, 1.07, and 0.99 respectively and theirs' standard error of mean was 0.065, 0.076, and 0.071 respectively. The C.V values were 0.1136, 0.1578, and 0.2115 respectively. Considering C.V values, it was found that the level of the passengers' loyalty of BTS in Bangkok in terms of reusing intention of BTS, recommend to others, and tendency to pay high and use other services were first rank, second rank, and third rank respectively.

Summary of Findings and Discussion:

The findings on the level of quality of services in terms of safety, security, direction, and service time, it showed that the level of the quality of services of the BTS in Bangkok was in the moderate level to high level. The level of service time and security were the high and the level of directions and safety

were moderate high. Considering the C.V values, it could be concluded that the level of the quality of services of the BTS was consistent or stable in all of the 4 aspects of the services (C.V values were between 0.1270 and 0.1416). Considering the rank of the C.V values, it could be concluded that among the 4 aspects of the quality of service in Bangkok, **security** was the most important of the services of the BTS, and safety was the least important.

According to the literature review the quality of services of the BTS in terms of safety, security, directions, and service time was from moderate level to high level. The level of the quality of service time from 6:00am to midnight 12:00am was high level. The level of quality of service of the security in the BTS station was high level. And the level of the quality of service of directions and safety was the moderate level.

Recommendations:

General Recommendations:

Although it was found that the level of the quality of services of the BTS in Bangkok in terms of safety, security, directions, and service time were in the moderate level to high level; among those four aspects of the quality of services of the BTS, safety system should be improved. Based on the results of the passengers' satisfaction, passengers' loyalty, and passengers' retention, it was found that passenger's retention was high level and the passengers' loyalty was the moderate level. It could be recommended to give better services to get passengers' loyalty level high.

The passengers' satisfaction level was influenced by the service time, security, and directions. To continue the good services, it is important to maintain all of the services properly and there is need to improve safety system, directions, and security.

Recommendation for Further Study:

This study provided a general picture of the quality of services from passengers' view, the passengers' level of satisfaction, and the influence of the quality of services on the passengers' satisfaction. However, the study did not include the quality of the services from the BTS management opinion.

Future research should find out the quality of services of the BTS from the management perception. Same research can be done in the future to obtain updated information about passengers' satisfaction and the quality of services from the passengers' view.

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