UNIVERSITI PUTRA MALAYSIA

MEASURING SERVICE QUALITY OF LIGHT RAIL TRANSIT

CHAN KEONG MENG

GSM 2000 9

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MALAYSIAN GRADUATE SCHOOL OF MANAGEMENT
UNIVERSITI PUTRA MALAYSIA
SERDANG, SELANGOR
JANUARY 2000

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* Potong yang tidak berkenaan

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MALAYSIAN GRADUATE SCHOOL OF MANAGEMENT

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BY
CHAN KEONG MENG

A PROJECT PAPER SUBMITTED TO

THE MALAYSIAN GRADUATE SCHOOL OF MANAGEMENT,

UNIVERSITI PUTRA MALAYSIA,

IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR

MASTER OF BUSINESS ADMINISTRATION

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SUPERVISED BY

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I would like to thank **GOD** for having given me the opportunity to further my studies and having been able to persevere. I would also like to thank the following people ;

Wife

For her love and understanding in the times I had to stay up late to finish projects and preparations for exams

Children – Yee Shuen and Yee Shuin

For being there to help take away my stress when I could not solve problems in the assignments.

Mum & Dad

For the encouragement to take that first step to enroll for the MBA

Acknowledgement

I would like to thank GOD for having guided me through the 2 years of studying in the MBA program. Especially in the late nights and planning my time between family, work and studies

I would like to thank for her time and effort in guiding me very well in the preparations for the project paper. I apologize for all the mistakes that I had done and again thank you for helping me.

I would also like to thank all the lecturers, administration staff and fellow MBA course mates who has helped make these 2 years of studying at Universiti Putra Malaysia very memorable !

Abstract

The public transportation industry is modernizing with new products being introduced to improve service provision to the public. This is also true for Malaysia whereby the LRT has been introduced. Consumer awareness in evaluating the quality of service in transport has also improved.

This research paper studies the LRT customers' perceived service quality of what the LRT operator provides. This paper attempts to discover what the LRT commuters think of the service quality provided by the LRT operator through the 5 SERVQUAL dimensions – Tangibles, Reliability, Assurance, Empathy and Responsiveness. Data was collected through direct face-to-face interviews with LRT commuters and the processed using the SPSS package.

The research findings show that the LRT commuters at the Bukit Jalil and Chempaka LRT stations and the shopping centers at Midpoint and Endah Parade knows of the LRT and have taken it before. The survey results showed the commuters perception scores were lower than the expectation scores. Thus in the eyes of the passengers, the actual LRT service falls below their expectations. There are a lot of improvements which the LRT operator will need to do to bring the service up to commuters expectations of Service Quality to ensure an increase in ridership. This clearly shows that Malaysian commuting public have higher expectations now as the modern LRT service also falls below their expectations when a few years back we only have old rickety buses on the road.

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CHAPTER 1

1.0 INTRODUCTION

The public transport industry has grown quickly into the modern transportation modes of low deck city buses, electric trains and light rail trains which are now being implemented in Klang Valley. The main reason for the quick growth is the supportive role of the Government in transforming the Urban Town Planning functions via the legislation of the Town and Country Planning Act (172) 1976 in the last twenty three years whereby the authorities have put the modernization of public transport a key agenda in town planning.

The modernization of the transport modes in Klang Valley was crystallized by Wilbur Smith Associates and Jurutera Konsultant (S.E.A) Sdn Bhd in the Master Plan Transportation Study for Kuala Lumpur 1980, whereby the first blue prints of the Light Rail Transit (LRT) and rail systems for KL was put into place. From this master plan, the Malaysian Government has answered the calls of the public to improve the public transportation system whereby a comprehensive network of bus and rail was planned to be implemented in the next twenty years. Thus service quality has become a critical factor in choosing the mode of transport as the public is no longer satisfied with the basic transport service of getting from one point to their destination but now looks for comfort and speed of getting to their destination.

The non air conditioned bus services with unruly drivers, conductors and old buses were replaced by two major bus companies in 1994, Park May Berhad and Intrakota Komposit Sdn Bhd who have merged many of the small bus operators in Kuala Lumpur. These two bus companies had introduced new air conditioned buses with uniformed drivers who have better driving skills.

As for the rail services, Keretapi Tanah Melayu (KTM) in 1995 had also introduced the electric commuter trains operating from Rawang to Seremban and from Port Klang to Sentul in Kuala Lumpur while Sistem Transit Aliran Ringan (STAR) had introduced LRT in 1996 with the first line from Ampang to Kuala Lumpur and the extension line to the Bukit Jalil Sports Complex and also to Sentul. Meanwhile Project Usahasama Transit Aliran Ringan (PUTRA) introduced their LRT system in 1998 operating from Petaling Jaya to Kuala Lumpur and out to the suburbs of Setiawangsa and Wangsa Maju area.

These modern rail transport systems are the answer to the increasing expectations of public transport users for better service quality in transport with billions of Ringgit invested into the LRT.

The service quality will be an important factor to determine the attractiveness of the LRT service to public transport users and also to attract the private vehicle users to switch over.

1.1 DEFINITION OF SERVICE

Kotler (1988) had defined service as an activity or benefit that one party can offer to another that is essentially intangible and does not result in ownership of anything. Its production may or may not be tied to a physical product.

Cravens, Hills and Woodruff (1989) stated that services are usually supplied by specialists in support of the firm's operations. The services are expense items which are intangible in nature.

Berry (1980) also added that services when purchased has nothing tangible to show for it. Services are just consumed and not possessed. Further research by Berry (1995) also stated that quality service is the necessary foundation for value creation and it covers reliability, surprise, recovery and fairness. These principles are necessary for maintaining customers' service expectations. He has also added that services have been defined by marketing scholars as "performances". In symbolic interaction terms, services are objects, something to which people can refer. Service provider and customer interactions are instances of joint activity in which people are continuously interpreting the situation and adjusting to each other. Thus, services are a phenomenon at the heart of symbolic interaction. Since much of the extensive body of symbolic interaction literature speaks of joint activity, or people working out their lines of action by interpreting the actions of the other, a review of such literature should offer insights to marketers.

1.2 DEFINITION OF QUALITY

The British Standards Institute has defined quality as a product's or service's ability to satisfy the customers needs and this shifts the evaluation of quality from the service provider to the customer.

Wong, Dean, White (1999) stated that early research efforts concentrated on defining and measuring the quality of tangible goods and products, while the seemingly more difficult services sector was ignored. Gronroos (1990) has noted that product quality was traditionally linked to the technical specifications of goods, with most definitions of quality arising from the manufacturing sector where quality control has received extensive attention and research.

Conversely, Crosby (1980) defined quality of goods as "conformance to requirements"; Juran (1980) defined it as "fitness for use"; while Garvin (1983) measured quality by counting the incidence of "internal" failures (those observed before a product left the factory) and "external" failures (those incurred in the field after a unit had been installed). These product-based definitions of quality may be appropriate to the goods-producing sector, however, knowledge about the quality of goods is insufficient to understand service quality (Parasuraman, 1985).

Kotler (1988) had stated that quality is one of the marketers' major positioning tools. Quality stands for the rated ability of the brand to perform its functions. Kotler (1996) added that quality is communicated by choosing the physical signs and cues that people normally use to judge quality. Some of the examples are brand names i.e. western brand names are better, taste effects i.e. extra cooling sensation in toothpaste is perceived better, finishing touch i.e. fine and neat stitching is better, sound effects i.e. more sounds in a bank's ATM machine to show it is working, and toughness such as strong sounding car doors when slammed is perceived to be a better built car.

Quality is also communicated through other marketing elements such as having less sale events as sales are perceived to be cheap or not so prestigious, packaging i.e. beer in bottle is perceived better then in cans and point of sales i.e. item sold in upmarket retail shop is perceived to be higher quality then those sold by mass merchandisers.

1.3 SERVICE QUALITY DEFINED

Lewis and Booms (1988) has stated that service quality is a measure of how well the service level delivered matches customer expectations. Delivery of quality service means conforming to customer expectations on a consistent basis.

Parasuraman, Zeithaml and Berry (1985) had formulated a service quality model that highlights the main requirements for delivering the expected service quality. Basically it focuses on the customers service quality expectations which are formed from past experience, word of mouth and service firm advertising. This perceived service is then compared against expected service whereby the gap is used to measure the service quality standards. Parasuraman, Zeithaml and Berry (1985) added that there are five determinants of service quality, presented in order of importance over one hundred points. The first determinant is Reliability which is the ability to perform promised service dependably and accurately scored thirty two. The second determinant is Responsiveness which is the willingness to help customers and to provide prompt service scored twenty two. The third determinant is Assurance which is the knowledge and courtesy of employees and their ability to convey trust and confidence scored nineteen. The fourth determinant is Empathy which is the provision of caring, individualized attention to customers scored sixteen. The fifth is Tangibles which is the appearance of physical facilities, equipment, personnel and communication materials scored eleven.

Devlin and Dong (1994) had incorporated improvements into the model by adding the element of customer feedback into every aspect of business. This model enables identification and rank order dimensions of service quality critical to customers, measure and understand customers needs and expectations of service quality, whether or not those expectations are being met, group company locations or branches on the basis of quality performance and learn from the "best in the class", compare their own service quality performance with that of the competition, anticipate customer needs.

1.4 INTRODUCTION OF SISTEM TRANSIT ALIRAN RINGAN (STAR) LRT INTO KUALA LUMPUR

The public transport system in Klang Valley has been improving by leaps and bounds since 1992 when the integration of the stage bus services were initiated and the mini buses were being planned to be modernized. This rationalization exercise was completed in 1994 by Park May Berhad and Intrakota Komposit Sendirian Berhad.

The LRT was planned as the transportation mode of the future, being fast, environmental friendly and able to carry much larger numbers of commuters than buses. The LRT which will not have any congestion is also very reliable. It can have very high frequency of between one to two minutes with capacity of five hundred to one thousand commuters per multiple unit of two to four car trains as compared to buses which carries up to a hundred commuters only.

Furthermore, the results of the 1980 Urban Public Transport Users survey covering four thousand interviews showed that the three most important criteria sited by the respondents were better service frequency, reliability and reduced overcrowding.

Similarly, Wahab (1991) stated that the Kuala Lumpur Structure Plan 1982 had also proposed to implement the LRT system to provide better transportation for the city and the costs of LRT was perceived as cheaper than developing road networks and parking lots.

The STAR LRT which was conceived in late 1991 taking on the recommendations of the Kuala Lumpur Master Plan Transportation Study in early 1980s was finally completed and opened to the public in December 1996.

The STAR LRT system covers thirteen stations over a distance of twelve kilometers and the alignment is along the old KTM track from Ampang to Kuala Lumpur. It uses two car train configurations with a capacity of three hundred and seventy five persons per rail car. The fleet size of the STAR LRT is seventeen sets of two car trains. The maximum capacity of the STAR LRT based on usage of fifteen sets of two-car trains is sixteen thousand and five hundred commuters per hour per direction. It is capable of operating up to a headway of two minutes with the maximum operating speed of seventy kilometer per hour.

The STAR LRT's phase two rail line started a southbound route to the Bukit Jalil Sports complex in July 1998, covering seven stations over another 11.8 km. The phase two southbound line was opened in time for the 16th Commonwealth Games which was held at Bukit Jalil sports complex.

It was reported that two million commuters used the STAR LRT to get to the Bukit Jalil sports complex for the Commonwealth Games. The opening of the second line to Bukit Jalil and expected higher demand had made STAR LRT change the train configuration to three-car train sets. This new train configuration operated with published peak train headway of four to six minutes (0730 to 0900 hours and 1630 to 1930 hours) while during the off peak times, the headway is every six to ten minutes. The northern extension of 3.2 km to Putra World Trade Centre, Titiwangsa, Sentul and Sentul Timur was operational in December 1998.

1.5.0 THE ASEAN EXPERIENCE

1.5.1 Singapore

Having a modern and comprehensive transport network is very important to the newly industrializing countries including those in ASEAN. Our ASEAN neighbour, Singapore has recognized the importance of having a good transport system thus provided a very modern bus and Mass Rapid Transit (MRT) system which focuses on giving a comfortable journey on public transport with the best service quality to the commuters.

The Singapore government had realized the importance of having a well planned transportation system in their small city state of only 586 sq km thus worked on an integrated authority and formed the Land Transport Authority (LTA) which was launched in September 1995.

The Chief Executive of LTA had informed during the City Trans Asia 1995 conference held on 21 to 23 September 1995 at the World Trade Centre in Singapore that the Government of Singapore had formed LTA to spearhead efforts to improve and manage Singapore's transport system. LTA will be responsible for the planning, development and management of all land transport infrastructure and policies and thus will work with the urban planners to ensure a balanced supply and demand of public transportation which would then reduce the number of cars on the limited roads in Singapore.

These are efforts by the Government to ensure a balanced growth in private car ownership so as to reduce road congestions.

The LTA has developed a few LRT systems in new Housing Development Board townships with the Bukit Panjang LRT system already on trial operations. Thus the LTA will continuously look into ways to upgrade the service quality of the public transport in Singapore to meet the expectations of Singaporeans to encourage more to use the public transport.

1.5.2 Jakarta, Indonesia

Indonesia also recognizes the importance of transportation planning to ensure a balanced urban development for long term economic growth. The government of Indonesia had by virtue of the Decree No.II/MPR/1993 of the People's Representative Assembly put forth the directive to ensure development of a long term urban transport development objective.

Abubakar (1995) quoted that the government realized the critical importance of alleviating the traffic congestion problems in Jakarta, the capital of Indonesia which has a population of more than 8 million (data in 1992) with projections that it will reach 12 million by the year 2015.

The government realized the problem thus proposed to have a mass transit system for the city as it would be able to provide an efficient public transport mode bringing commuters from origin to destination at higher service levels which would attract people to leave behind their cars and take public transport.

Government had approved the "Consolidated network" consisting of 145 km of Urban Mass Transit and 80 km of Regional Rail Mass Transit targeted for completion by 2015. In 1995 the government had started improvement works on the double tracking rail lines within Jakarta.

1.5.3 Bangkok, Thailand

Bangkok is very well known for its high urban development and also its traffic congestions to the extend of "mini potties" are sold for private car users in case of emergencies while caught in their traffic congestion. Bodell (1995) quoted that among the main reasons for the protracted traffic congestions in Bangkok are the lack of coordination in planning, lack of secondary roads, lack of regulations, lack of development control, lack of public transport planning, manual traffic signaling and high growth of vehicle ownership

There were too many agencies involved in the transportation planning in Thailand with the Ministry of Communications, Ministry of Interior, Ministry of MRTA and Ministry of OCMRT. Thus it was very difficult for the authorities to work together to improve the service level of public transport to attract Bangkok citizens to leave behind their cars and take the public transport. Nevertheless the authorities have formed the Office of the Commission for Management of Road Traffic (OCMRT) to oversee and coordinate transportation projects nationwide with a Bangkok Master Plan Study completed in 1994 by Kasetsart University and Sindhu Pike Bodell.

1.6 OTHER EXAMPLES IN THE WORLD

Other examples of LRT systems and their importance for development besides meeting commuter needs are the rail system in San Jose which had companies relocating nearer to the rail stations. Commercial and residential development around stations were also evident in the rail systems in Adelaide and Vancouver while the Memphis and Miami metro systems have helped downtown redevelopment. (Quoted from UTOPIA - Light Rail 94 Conference).

Even though the rail systems are assisting in economic development, reducing congestion and pollution by cars, but evidence shows very slow ridership growth for most rail systems.

Table 1 : Statistics of Declining Ridership on Light Rail systems Worldwide

Location	Buffalo	Pittsburgh	Portland	Sacramento	Manchester	Sheffield	Newcastle
Forecast Year	1995	1985	1990	2000	1996	1996	1985
Forecast Ridership	92.0	90.5	42.5	50.0	35.7	70.7	219.1
Statistics in Year	1989	1989	1989	1989	1995	1995	1985
Ridership for year	29.2	30.6	19.7	14.4	43.5	7.8	208.9
% Difference	-68%	-66%	-54%	-71%	+22%	-89%	-5%
Statistics in Year	1995	1992	1995	1995	1996	1996	1996
Ridership for year	29.0	31.1	24.0	23.0	44.5	18.7	126.9
% Difference	-68%	-66%	-43%	-54%	+25%	-74%	-42%

Source : Pickrell D.H. (1998) "A desire named streetcar : fantasy and fact in rail transit planning"

1.7 PROBLEM STATEMENT

Billions of Ringgit had been invested by the government and private sector in the modern public transport systems, particularly the Light Rail Transit (LRT) systems which have been newly introduced into Malaysia in December 1996. Thus we would like to study the perception of the people who have decided to use the LRT and also compare against those who have decided otherwise. Why have the people decided against taking the LRT ? The Star, 31 December 1998 had reported that ridership on the STAR LRT system was only 53,300 commuters per day as compared to the projections of 170,000 commuters per day.

It has also been reported by JICA (1998) in their surveys that the rail modes (STAR LRT and the KTM Komuter) only account for 0.4% of the transport mode. Other public transport modes such as buses account for 18% while cars takes up the highest modal split of 37.1%.

Buses still capture a large share of public transport modal split due to the very low bus fares in Malaysia which were last revised in October 1992. Many of these routes within the operating corridors of the LRT are in direct competition with the LRT i.e. Intrakota, Cityliner and Metro buses operate from Ampang to Kuala Lumpur city center at lower fares of RM0.90 to RM1.20 while the LRT operates into the city from Ampang LRT station to Sultan Ismail station in Kuala Lumpur city centre is RM2.90.

Furthermore, the bus services provides very good coverage as practically every 300 to 500 metres there are bus stops while LRT stations are approximately 1 km apart. The government's drive to encourage High Occupancy Vehicles (HOV) of more than two persons and car pooling did not meet with much success as it was not a regulation but an encouragement only thus difficult to shift the people's mode of transport choice from private vehicles to public transport. These reasons could have contributed for the lower than expected demand for the STAR LRT system.

We will need to measure the service quality perception of commuters towards the LRT. The current situation shows that people still prefer their existing modes of transport whether private vehicles namely cars and motorbikes or other modes of public transport such as buses and taxis. Thus this study will be able to determine the current LRT service quality in terms of the perception and expectations of LRT users and compare against comments of those who do not want to switch over. We hope the results will provide sufficient inputs for STAR LRT to take steps to improve on their services to attract these non-users to try the LRT and in the long run switch over to the LRT.

1.8.0 CHARACTERISTICS OF TRANSPORT USERS

Kotler (1996) states that people will buy goods and services that satisfy their needs and wants. Thus why is there declining usage of public transport worldwide ? Sasser (1976) had also quoted that one of the strategies public transport companies who are committed to provide high frequency is differential pricing or peak frequency to meet demand.

Harrison (1974) had stated that most travel trips are made for the sake of some form of benefits such as earning opportunities, goods bought or experience enjoyed. Traditionally the economic theory of consumer behaviour has defined the problem facing individuals as that of maximizing the utility he derives from consuming goods and services, subject to a budget constraint i.e. his income and the prices of the various goods and services to be purchased. Thus the time and money or generalized cost which has to be spent traveling to engage in an activity or purchase a product or services forms part of the purchase price. It is noted that any reduction of price versus the traveling time to access the product or services will determine the attractiveness of the travel mode such as bus or LRT or car.

We also need to understand the expectations of the commuters, such as the service level of transport provider such as frequency of services, different pricing levels and discounts, trip purpose of the commuters, location of the stations and connecting services i.e. feeder buses or taxis. This will be able to reflect on the quality of services provided by the public transport users.

1.8.1 STAR LRT EFFORTS TO IMPROVE SERVICE QUALITY TO MEET COMMUTERS' EXPECTATIONS

In view of the dismal performance in attracting more ridership, the management of STAR LRT had already implemented some measures to improve service quality to attract more commuters and hopefully be able to increase ridership and revenues.

1.8.1.1 Introduction of Discounted ticket prices

The STAR LRT had also introduced return trip tickets for convenience and also Stored Value tickets of RM20 (up to five percent discount given) and RM50 (up to ten percent discount) and also discounts of up to fifty percent for children concession tickets (age 6 to 12 years and school children in uniform).

When the second phase of the STAR LRT was completed in December 1998 and had given discounts of up to thirty percent for those who travel between the Sentul and Sri Petaling. The fares from Sentul and Sri Petaling to Kuala Lumpur were reduced from RM1.80 to RM1.20 and RM2.90 to RM2.00 respectively. However the first phase fares from Ampang to Sultan Ismail remained the same.

1.8.1.2 Marketing & Promotions to encourage LRT usage

In view of the "newness" of LRT travel to Malaysians, the STAR LRT had promoted free travel for about 2 months from October to November 1996 to attract users to change modes to the LRT which is congestion free and much quicker than road based transport.

1.8.1.3 Convenient Feeder bus linkage

Intrakota had also provided feeder services around the Ampang area since 9 December 1996 until STAR decided to takeover the feeder services provision on 15 May 1998 as there were too much complaints of Intrakota not providing reliable and frequent feeder services which were terminated in March 1998. The STAR LRT provides their own feeder services at a flat fare of RM0.50.

1.8.1.4 Surveys to understand Commuter Expectations

The STAR LRT management in 1998 appointed Sofres FSA to conduct surveys on the LRT users and non users had showed very high awareness level of 46%. However the modal split of transport modes showed that LRT usage is only 14% as compared to private vehicles such as cars (43%) and bikes (16%) while public buses captured 18%.

Details on the survey results on the reasons for not taking the STAR LRT i.e. the service level does not meet their expectations are appended below in Table 2.

Table 2 : Reasons for not choosing LRT as main means (those taking car)

	Work	Business	Leisure	Shopping	Weekend	School
Too expensive	44%	40%	44%	45%	52%	69%
Not value for money	24%	13%	16%	13%	16%	31%
Doesn't go to destination	25%	44%	49%	52%	56%	6%
LRT station too far	22%	21%	26%	25%	25%	19%
Too crowded	8%	2%	1%	1%	1%	6%

Source : Sofres FSA 1998 survey

1.9 OBJECTIVES OF THE STUDY

This study hopes to measure the service quality provided by the LRT operator as perceived by the LRT. The perceived service quality can enable STAR LRT to better understand the needs of their existing customers and be better prepared to attract non users who are potential new LRT commuters and thus make the necessary changes where possible to attract them to use the LRT. We will be using SERVQUAL to measure the level of service quality of the LRT service.

1.9.1 Specific Objectives

The specific objectives of this research study are as follows :

a) To identify the aspects of service quality to both LRT commuters and non commuters

b) To compare the perception of services received (perception) versus the services desired (expectations) of both the LRT users and non users to determine potential attributes that can change the preference of the non LRT users to enable them to switch to LRT

1.10 THEORETICAL FRAMEWORK

The theoretical framework of this study is based on a model developed by A. Parasuraman, Zeithaml, Berry (1990) which identifies 5 gaps or points where service production might falter. (refer Figure 1) The model contains 4 gaps that occur within the organization. The 5 gaps are as follows ;

1. The discrepancy between customer's expectations and management's perception of those expectations will have an impact on the consumer's evaluation of service quality.

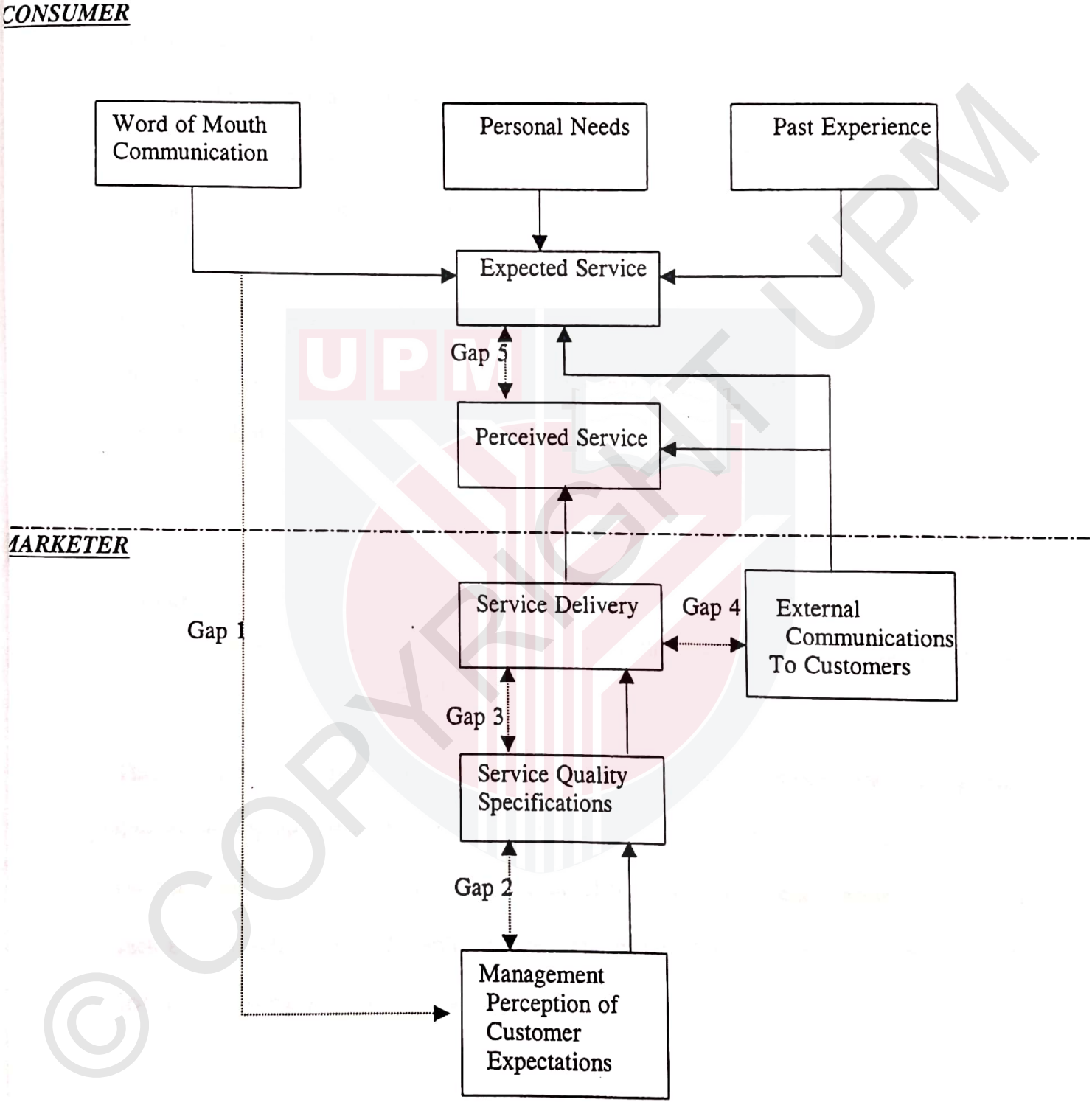
2. The gap between management perceptions and the firm's service quality specifications will affect service quality from the consumer's viewpoint.

3. The gap between service quality specifications and actual service delivery will affect service quality from the consumer's standpoint.

4. The gap between actual service delivery and external communications about the service will affect service quality from a consumers' standpoint.

5. The quality that a consumer perceives in a service depends on the size and direction of an additional gap (gap 5 in Figure 1), which in turn depends on the nature of the gaps associated with delivery of service quality onm the organization's side.

Figure 1 : Theoretical Framework of Service Quality



1.11 THE CONCEPTUAL MODEL

In this study, we will only focus on Gap 5, which is the customers' perception of service quality. The difference between the customers' expectations of service and the actual performance by the organization represent the service quality perceived by the customers. Thus a conceptual model is developed for further explanation. (refer to Figure 2)

There are five hypothesis derived to test Gap 5, whether there are any relationship between the SERVQUAL dimensions and the various independent variables set up to test the 5 SERVQUAL dimensions.

Hypothesis 1 :

To test whether there are any relationship between the independent variables against the SERVQUAL dimension of **tangibles.**

This hypothesis is proposed to determine the relationship between the SERQUAL dimension tangible against the various independent variables relating to tangible aspects of the LRT service such as physical appearance of the LRT trains, expectations of facilities such as air conditioning and comfort of the seats, image of the LRT stations whether clean, and whether sufficient parking spaces.

Hypothesis 2 :

To test whether there are any relationship between the independent variablesagainst the SERVQUAL dimension of **reliability.**

This hypothesis is proposed to determine the relationship between the SERQUAL dimension reliability against the various independent variables relating to reliability aspects of the LRT services in the eyes of the LRT commuter, whether what is provided meets their expectations. The areas covered in the evaluation of the reliability are punctuality of the trains, high speed of the LRT trains which are fast and congestion free, high frequency of the trains and the reliability of zero breakdowns.

Hypothesis 3:

To test whether there are any relationship between the independent variables against the SERVQUAL dimension of **responsiveness.**

This hypothesis will allow the determination of the relationship between the SERQUAL dimension responsiveness against the various independent variables relating to responsiveness dimension of SERVQUAL. This will focus on the LRT staff performance in the eyes of the commuters, whether the LRT ground staff are helpful, friendly and whether these staff gives prompt service/attention.

Hypothesis 4:

To test whether there are any relationship between the independent variables against the SERVQUAL dimension of **assurance.**

This hypothesis will test on the relationship between the SERQUAL dimension assurance against the various independent variables relating to assurance dimension whether the LRT staff is informative, the LRT has good feeder bus coverage, reasonableness of the LRT fares, LRT is not overcrowded, LRT is able to get to destination on timely basis and that the LRT is value for money.

Hypothesis 5:

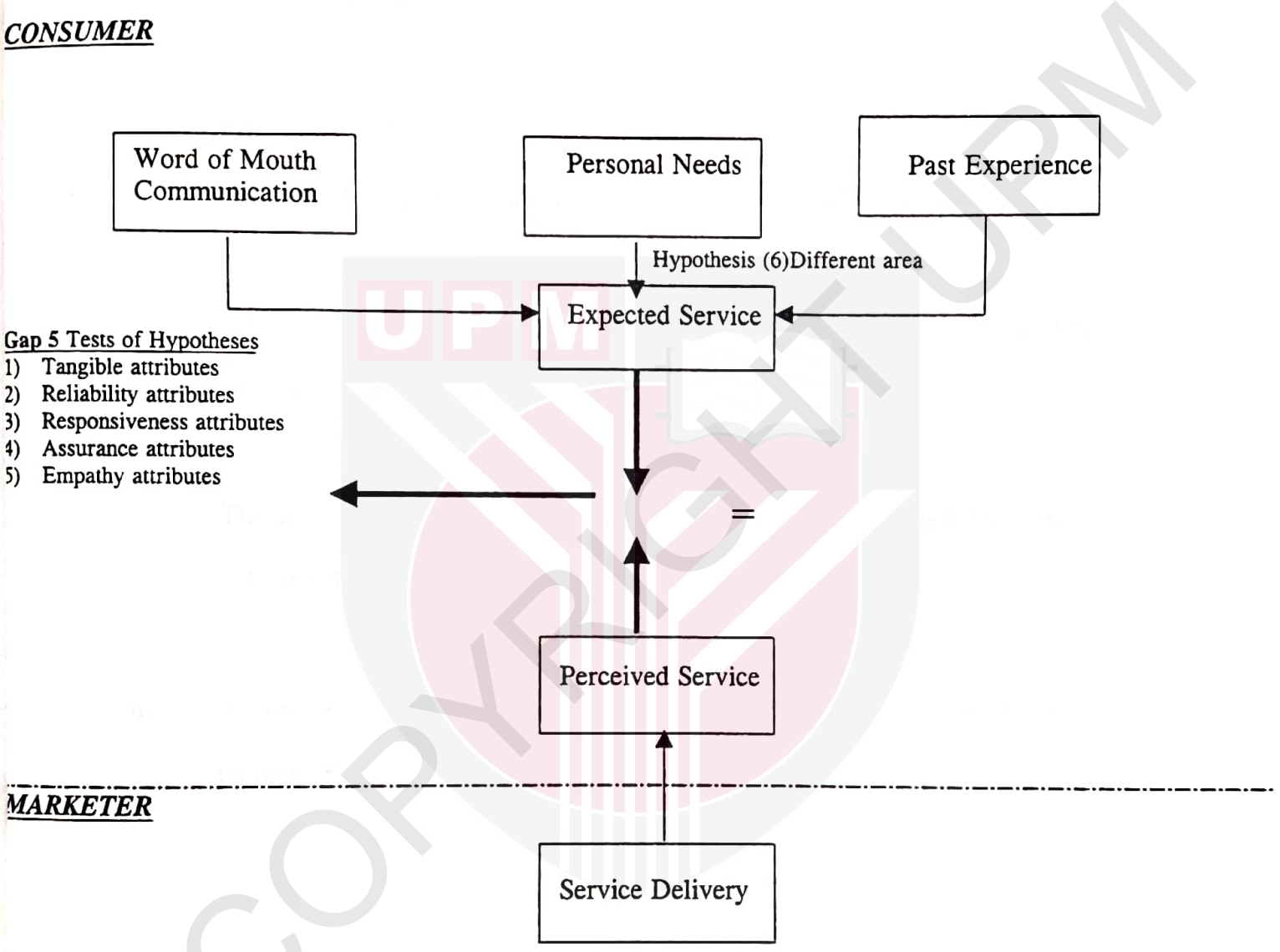
To test whether there are any relationship between the independent variables against the SERVQUAL dimension of **empathy**.

This hypothesis will also test the relationship between the SERVQUAL dimension of empathy against the various independent variables relating to the empathy dimension whether the LRT has commuter interest at heart, the staff are courteous, signages are informative and the staff takes care of all commuters.

Hypothesis 6:

Comparison of respondents at the 2 survey locations whether similar comments on the 5 attributes. This will enable us to check whether the commuters at the 2 different locations have different expectations in terms of the 5 SERVQUAL attributes of tangibles, Reliability, Assurance, Empathy and Responsiveness. 1-way ANOVA testing is used as the discrete variable is the 2 groups of respondents from the 2 different survey locations while the continuous variable are the 5 SERVQUAL dimensions.

Figure 2 : Conceptual Model of Service Quality



1.12 THE SCOPE OF THE STUDY

This research will include :

a) Literature review on service quality, applications in other industries and especially within the transport industry and background of the STAR LRT (Chapter 2)

b) The methodology of data collection and analysis of data, conceptual framework and questonnaire design. (Chapter 3)

c) The descriptive and statistical analysis of data results obtained from the surveys. (Chapter 4)

d) A summary of discussions, conclusions, limitations, future directions and recommendations based on the findings. (Chapter 5)

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