FRANCHISING OF LONG DISTANCE BUS SERVICES IN SRI LANKA IN ORDER TO IMPROVE QUALITY OF THE SERVICE

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Declaration of the Candidate & Supervisor

"I declare that this is my own work and this thesis does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any University or other institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text"

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"I have supervised and accepted this thesis for the award of the degree."

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Abstract

The main objective of this study is to propose a suitable franchising system for long distance bus services. Introduction chapter explains features and structure of bus industry and background of franchising system. Literature review mainly discussed on quality of the service, theoretical approach of public transport management models and studies on franchising of public transport services. This study reached to conclusion through three surveys, and hypothesis system. Conclusions were done by using mean value. Based on a passenger interview survey quality attributes were ranked, and selected the most powerful five quality factors to be considered for the one of experts' opinion survey which was done to get experts' opinion on effectiveness of each management model to solve problems of the passenger. The other survey was done to identify effective level of each management model to solve problems of the regulator. These two experts' opinion surveys helped to make conclusion on the most effective management model to improve the quality of the service of long distance bus service in Sri Lanka. It concluded that creating omnibus management companies is the best option and suggestion of experts were supplemented to enrich the proposed franchising system. The study concluded that the NTC should make appropriate policies to establish proper institutional mechanism, and the regulator will have to play its role by improving its capabilities with administrative, managerial and technical knowledge. Independency and strengthening   of the NTC are basic requirements for the successfulness of the selected franchising system.

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CHAPTER 1

INTRODUCTION

1.1 Bus passenger transport services in Sri Lanka.

Land transport sector in Sri Lanka consists of a number of modalities as shown in Figure 1.1, and it clearly shows that the major passenger transport mode is the bus services which contribute 55 % of the total land transport sector. The National Transport Commission and Road Passenger Transport Authorities of each Provincial Council serve as the regulators of bus services in Sri Lanka.
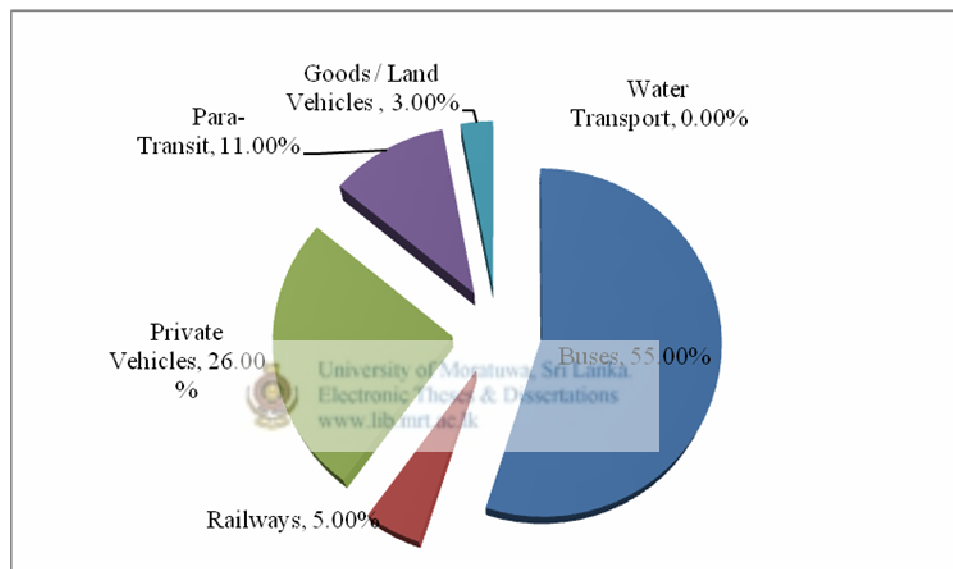
Figure 1.1: Transport Activity and Modal Shares in Sri Lanka (2011)

Source: Kumarage (2011),

Bus transport services in Sri Lanka are operated both by the government and private sector. The Sri Lanka Transport Board (SLTB) operates both short distance (intra-provincial) and long distance (inter-provincial) bus services as a government agency, and its contribution to bus operations in Sri Lanka is 34%. Long distance private bus operations are regulated by the National Transport Commission, and Road Passenger Transport Authorities of each provincial council are responsible to regulate short distance private bus services in Sri Lanka. Majority of population of developing countries depend on public transport. They need motorist transport and have to go through very difficulties in traveling. However, public transport services in Sri Lanka

play salient and important role to sustain and to improve welfare of passengers by providing access and mobility.

1.2 Background of bus transport industry in Sri Lanka.

Public transport sector in Sri Lanka has passed several eras, and now it has been recognized that there are some inefficiencies in managing the bus operations. It shows that reforms are necessary to make well efficient public transport services in the country. The first bus service was started by the Collets Company by operating a bus service from Colombo to Chilaw in 1907, and there is a history of more than 100 years of bus industry in Sri Lanka.

It can be seen different services provisions in terms of management, ownership and regulatory structure of the bus industry in Sri Lanka. The country is not successful with providing a competitive service for passengers. But long distance bus services provide better comforts than the period before 1979. The problem is that long distance bus services fail to give acceptable performance to the passenger. Further bus services are not operated by the operators in accordance with the instructions of the regulator. Under these circumstances the National Transport Commission has recognized that franchising of long distance bus services is necessary to improve quality of the service. However the following periods of omnibus transport in Sri Lanka show that the needs of a different strategy like franchising of long distance bus services.

Table 1.1: Policies and problems of bus industry in Sri Lanka.

Periods	policies	Problems
1907 - 1938	Formative years of unregulated competition.	Owner – operator industry. Some routes were over bused and some were neglected. Accidents and cut- throat fares.
1939 - 1957	Consolidation under a regulated private monopoly.	Management of companies failed to improve quality of service.
1958 - 1978	Expansion under a nationalized state monopoly.	Deteriorated of management. High cost, overloading and lack of reinvestment.
After 1978	Regulated mixed competition.	State operator unable to create a competition. Private sector develops without regulatory body, and owner- operator industry.

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The problem is that the service shows inefficiency and low quality of the service, and the following situations are still remained in long distance private bus industry, and they show that quality of the service has to be improved. As the regulator, the National Transport Commission has to find on possible ways out improving quality of the service, and existing problems of bus industry can be mentioned as follows.

Unacceptable passenger loading level of buses in peak hours, and it makes inconvenience for passengers, and it has caused to a modal shift from public transport to private transport. This type of inefficient capacity has reduced the availability of long distance bus services. If the bus is full when arrives to the bus stop, the service is not available for passengers. Usually Sunday evening and Monday morning buses operating towards Colombo from long distance areas such as Kurunegala, Trincomalee, Katharagama, are full with passengers exceeding number of seats of the buses .There are some passengers traveling in luxury buses without having seats .Under this circumstance passengers have to wait for the next bus or to find another means to complete their trips. However this situation shows that the bus service fails to provide demand responsive service, and it is a normal situation that most of buses operating in morning and evening peak hours, are full with passengers. The regulator

has to solve this problem by ensuring seats for all the passengers to improve the quality of the service. But the situation takes place and it reduces service quality.

Low level of reliability of the service, and operators has not been prepared to provide reliable bus services, and the following situations could be recognized. Vehicle maintenance quality is not considered by bus owners, and they have not an idea of maintaining the vehicle to ensure the journey form origin to destination without having any breakdown. But the National Transport Commission has determined Specifications of buses, and conditions of buses are checked when renewing the passenger transport permit.

- When buses arrive to the destinations of urban centers, it creates delays due to mixed–traffic operations, on street parking, traffic signal delays, parking maneuvers and etc.

- There is no view of public transport priority measures such as signal priority, exclusive lane for buses and etc.

- There is no a system to monitor whether the bus is operating or not in accordance with the given scheduled time within the journey.

Bus services have failed to provide facilities for passengers to use their travel time productively. Long distance bus services still have not provided value added services such as providing facilities to use laptop, facilities to buy soft drink and foods, reading newspapers, listening to the radio while traveling in the bus. But these types of facilities are required by the passengers who involve in commercial and industrial sector, and lack of these facilities have discouraged passengers to use public transport, and it reduces passenger satisfaction level.

It is hardly to find attention to reduce journey time by mitigating waiting time for buses, travel time on-board the bus, travel time from transit stop to one's destination and time required to transfer between routes during the trip.

Higher risk level for accidents and lack of consideration of safety and security have imaged as an issue. Most of long distance buses are making competition on the road to pick up passengers, and these situations have increased probability of meeting accidents, and the following real examples show this dangerous situation.

- Accident at Yangalmora at the railway crossing at Walakumbura in 2005, and 40 passengers were killed by the accident.

Bus service fails to make good appearance and comfort levels to satisfy passengers. The bus service has not successful with having clean and attractive bus stops, bus terminals and modern buses. On the other hand lack of supporting infrastructure of the sector has created a question in the minds of passengers about the comfort and quality of the service. Long distance bus services fail to make appropriate climate control for existing conditions like heating inside the bus when it is acceptably filled with passengers. Although the Commission has taken step to determine standard levels, it could not be satisfied with seat comfort, amount of padding and leg room, acceleration and breaking pattern, noise and etc. Ride comfort should also to be increased with vehicle sway. On the other had the following facilities have to be increased to ensure the quality of the service.

- Seating facilities at bus stands and bus halts for passengers to wait for buses.

- Bus shelters with acceptable level of facilities.

- Information signings for convenience of passengers.

- Telephone facilities at bus stands for passengers to use while waiting for buses.

- Vending facilities.

- Luxury bus facilities for more bus services.

- Bus crews (drivers and conductors) have to be trained and ensuring their job security. Discipline of bus crews have to be improved.

- Removing existing activity of illegal operators.
- Training for non qualified bus crews.
- Minimizing loss of revenue of services.
- Mitigating bus operating cost by improving infrastructure.
- Removing effect of unauthorized parties.

1.3   Short distance bus services in Sri Lanka.

Bus services which are operated on a route where within a provincial council, are mentioned as intra–provincial bus services or short distance bus services

Ex.   Narahenpita to Colombo route (Route No.103).
        Rajagriya to Colombo route (Route No.144).

The above two bus services are operated within the boundary of Western Province, and these bus services are regulated by the Western Province Road Passenger Transport Authority. The authority issues passenger transport permits and make rules and regulations to provide transport services for passengers.

1.4   Long distance bus services in Sri Lanka.

Bus services which are operated via two or more boundaries of provincial councils are recognized as long distance bus services, and these services are also mentioned as inter-provincial bus services.

Ex. Colombo – kurunegala route (Route No. 06).

This bus service operates via Western   Province, Sabaragamuwa Province and North Western Province).

Ex. Kurunegala – Kegalle route (Route No. 507).

This bus service operates via Sabaragamuwa Province and North Western Province.

The National Transport Commission has issued [1]3275 of passenger transport permits for 399 of long distance bus routes as mentioned in Table 1.2. The Commission issues passenger transport permits by considering passenger demand for each route to make regulations in order to serve the passenger and the operator. The Commission is responsible for making a correct path to utilize country's resources of transport sector, and it expects to attract of more and more passengers from other transport modes to bus services in order to gain macro economic benefits for the society by reducing unnecessary consumption of country's resources. Under this situation the NTC has to

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[1] National Transport Commission (2012)

find on possible ways of improving quality of bus passenger transport services by using appropriate strategies.

Table 1.2: Issuing of passenger transport permits by the NTC.

Bus service	Number of issued permits	As a percentage of all passenger transport permits (%)
Super luxury	48	64
Luxury	654	20
Semi luxury	489	15
Normal	48	01
Total	3275	100

Source: National Transport Commission (2012).

The National Transport Commission conducts passenger transport related surveys to identify existing situations of bus industry, and it has done a survey to review passenger satisfaction regarding some quality factors.

Table 1.3: Passenger satisfaction of long distance bus services.

Quality factors	Satisfaction Level of Passengers				
	Satisfy	Somewhat satisfy	Average	Not satisfy	Extremely not satisfy
Overall quality.	20%	37%	31%	11%	2%
Loading level.	4%	20%	33%	30%	12%
Travel time.	16%	29%	30%	19%	6%
Waiting time at bus terminal.	17%	29%	32%	15%	6%
Safety when traveling.	23%	27%	30%	14%	6%
Discipline of driver and conductors.	18%	28%	33%	16%	5%

Source: National Transport Commission (2010).

Table 1.3 shows that the main problem of long distance bus service is overcrowding, and only 4% of passengers are satisfied with loading level of buses, and others are completely not satisfied. This data shows that as a developing country, Sri Lanka has to find on possible ways of making efficient and cost effective long distance transport service in order to avoid modal shift from public transport to private transport .However decreasing of comfort level and quality of the service have caused to

increase using of private vehicles, This type of situation reduces national economic profitability, and makes the following situations.

- Increasing of consumption of fuel, and it causes to spend foreign exchange of the country.

- Creating of big traffic congestion in main cities of the country, and it causes to create the following issues.

  - Environmental effect.

  - Higher risk level for accidents.

  - Increasing travel time.

  - Increasing stress level of passengers.

Long distance private bus passenger transport service in Sri Lanka needs reforms which could be able to improve quality of service.

Long distance bus service in Sri Lanka has not successful with providing quality service for passengers who require a suitable service which can satisfy existing modern society in an increasingly competitive market. The National Transport Commission receives about [2]250 of passengers' complaints per month, and in addition to these situations, passengers have to go through very difficulties themselves. Commercial and industrial sectors need more comfortable transport service than normal society, and they need more reliable service to schedule trips in order to save their valuable time, and otherwise these sectors will continue using of private vehicles. People of these sectors tend to use modern technology like GPS and GIS, and to get benefits like acceptable loading level, reducing waiting time, travel time saving, reducing risk level for accidents and well scheduled service and etc. But the existing situation has not successful in making quality bus services, and passengers have to go through very difficulties in using bus services.

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[2] National Transport Commission (2012)

Existing problems of long distance bus industry which should be overcome from the regulator point of view.

- **Inefficient competition between individual operators.**

The existing bus operations are taken place as individual bus operating system, and this has resulted inefficient utilizing of resources, and the individual bus owner's main target is to maximize his profits by getting more and more passengers. The individual operator doesn't consider the quality of the service, safety, reliability, comfort level and etc. Under this situation the regulator has to find out possible ways of mitigating this type of inefficient "competition in the market" and it has to be converted as "competition for the market" in order to create a quality bus service.

- **It is difficult for administrating of individual bus operators.**

As the main regulatory body the National Transport Commission has faced a very difficult problem of administrating of individual bus operators. It is difficult to drive each operator towards making of quality transport system by adopting policies. But if these individual operators of a route or of a network could be considered as a whole, it makes easier for making administration as a whole for the entire route.

- **There is no responsible of individual operator for operating buses by considering passenger's expectations.**

Individual bus operators always consider their profit and to get maximum number of passengers on the way to destination, and this type of situation is not good in passenger point of view. The considerable things are that there is no responsible for mitigating accidents, maintaining acceptable level of load factor of bus buses, managing travel time in line with the given time, establishing of reliable bus service, employing suitable and trained bus crews and etc. Under these circumstances competition at the road among buses has led to dangerous situations, and there is no clear assurance regarding quality of the service. However it is noteworthy that the existing individual bus operating system has not responsible to answer the question of neglecting safe, reliable and comfortable bus service.

- **Political intervention for issuing passenger transport permits.**

Most of individuals think that entering to the bus industry is an ideal opportunity to gain maximum profits as the whole income of the day could be collected in cash, and

there is no any risk of situations like returning of cheques. Competitors try to grab passenger transport permits by using political powers .Under this circumstance the regulator has to grant passenger transport permits as political favour. This situation makes a path where supply exceeds potential passenger demand, and this has led to dispatching of buses in strict turns which are controlled by a marshalling system. This has resulted in average daily running distance of buses has gone down, and utilization of buses to the industry is not taken place properly.

- **Illegal bus operations.**

Illegal bus operation has appeared as a considerable issue of the long distance bus industry of the country. The National Transport Commission has failed to remove these illegal bus operations which are taken place with neglecting rules and regulations of the industry. Under this situation passenger transport permit holders are got into trouble when operating buses, and on the other hand the NTC has to answer the question on how protect passengers and bus operators from illegal bus operations .

- **The NTC has failed to upgrade private investors of the industry from bus owner into reputed businessman.**

The existing individual bus operating system has not successful with upgrading social level of bus owners, and they have to remain at the industry as investors who don't have reputation as businessmen. Under this situation the regulator has neglected to make good attitude of bus owners on how to be a respectable businessmen who have managerial skills, and on the other hand this situation has led the existing bus owners to leave the industry. Bus industry has only very a little ability to attract educated and skilled investors who have global knowledge of responsible of public transport.

1.5 Introduction of franchise.

[3]Franchise is the practice of using another firm's successful business model. The word "franchise" is an Anglo–French derivation from France, and the word is used for both as a noun and as a verb. Franchising is used for any type of industry, and it is an agreement between a franchisor and the recipient "franchisee". The franchisor provides advice training and other incentives for the franchisee.

The first franchising effort in the United State dates back to at least 1950s. [4]Isaac Singer wanted to increase the distribution of his sawing machines, and his efforts was unsuccessful in the long run. But it has provided a good approach for business .After this situation a good example has been provided by   [5]Dr. John Stith Pemberton's successful franchising of Coca–Cola. Modern franchising has come to prominence with the increase of franchise–based food services establishment, and this trend was started in 1921 with A &W Root Beer.

Franchise could also be recognized as an institutional mechanism that provides a good path to achieve both social and private objectives by utilizing of resources efficiently and effectively, and it makes benefits for the franchisee and franchiser at the same time.

In 1950s, it could be recognized a boom of franchising connection with development of U.S. interstate highway system. A study on franchising was done by the University of Louisville in 1991-1993, and it has reviewed that franchising has helped to lead America out of its economic downturn at the time. However, franchising could be described as a unique business model which helps to create benefits for the franchisor and the franchisee. Franchising has been a good methodology for making social and economic benefits for developing and developed countries, and it provides institutional mechanism along the lines of service sectors like health and education. Franchise system of public transport sector could be shown simply as Figure 1.2

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[3] www.wikipedia.org/wiki/Franchising

[4] Inventor of singer sewing machine (1811-1875)

[5] Inventor of Coca Cola (1831-1888)
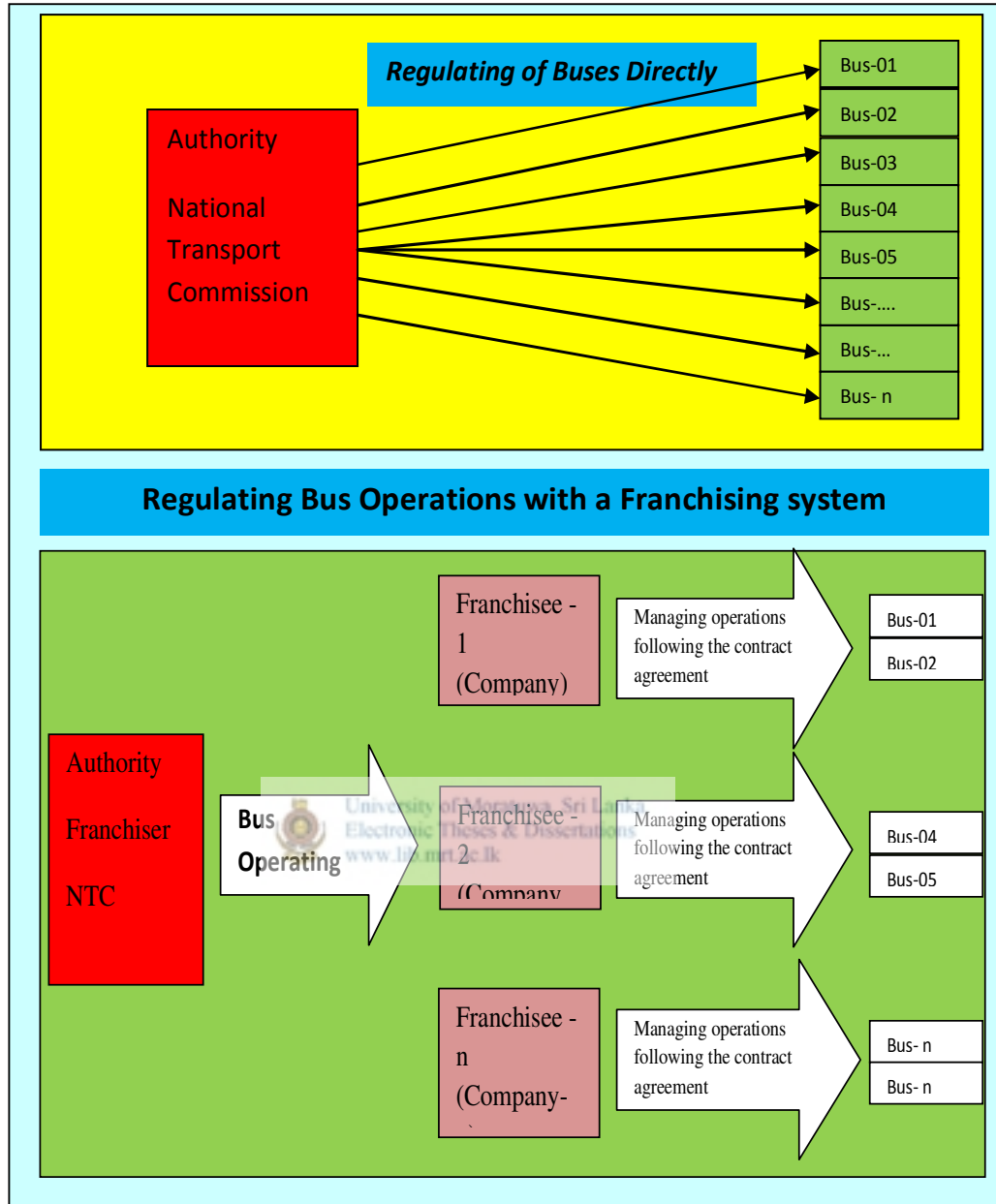
Figure 1.2: Regulating bus service directly, and with a franchising system.

When regulating bus service without a franchising system, the regulator has to control each bus owner, and this type of situation requires direct control system to improve quality of the service, and it makes difficulties for regulating large number of bus owners who operate buses on different routes. Usually this system makes a competition on the road to pick up more passengers. Policy makers of public transport sector have recognized that this kind of regulating system makes inefficiency, and it

has been a block to improve the quality of the service. This process causes to create competition among buses on the road (competition at the market) to pick up more and more passengers to increase daily income for each bus, and the following situations are made by the operators due to minimum consideration of passengers' requirements.

- Unacceptable loading level and inconvenience to the passenger.
- High speed and very low speed of operating buses.
- Poor interior conditions and poor comfort level of buses.
- Higher risk level for accidents.
- Buses are operating without considering time tables.

It is hardly to find reliable bus services with large number of bus operators within a country, and bus industry of Sri Lanka has proved it. It has recognized that controlling and regulating of large number of individual bus operators is very difficult, and it has been the main barrier to improve the quality of bus services in countries such as Sri Lanka. Improving accessibility to health, education, employment, recreational and other types of urban services have been a compulsory component in both developed and developing countries. Considering welfare of low-income household is necessary with increasing rate of motorization in developing countries. The National Transport Commission has recognized that the time has come to make a regulatory reform of bus industry in order to establish well efficient, reliable, well safe and courteous bus services to serve passengers. But regulating of bus services under a franchising system, converts "the competition at the market" into " the competition for the market" to grab market with acceptable behavior, and operating of bus is taken place under a bus company. The company expects to increase its income while managing the service conditions given by the contract. The main role of the company is operating buses on a given route by following the instructions given by the National Transport Commission, and this system helps to achieve both private and social requirements of public transport industry.

It has witnessed that developing countries are finding out possible ways of improving quality of public transport services with various types of strategies, and examples show that most of countries have involved in franchising of bus services and train services in order to get better performance. Examples could be found from developed

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and developing countries to prove that franchising is used to improve quality of bus service with business environment.

Franchisee always tries to maximize profits with efficient utilization of resources, and he has to find out possible ways of mitigating inefficient situations of the industry in order to make satisfy the franchiser. On the other hand the franchiser always tries to drive the franchisee on path which is given by the contract and the agreement .Under this condition it is noteworthy that franchising provides a better institutional framework than privately bus operating system and operating under the control of a regulatory body to improve quality of bus services.

1.5   Franchising of long distance bus services in Sri Lanka.

National Transport Commission has decided to create omnibus management companies (OMC) in 2008 in order to [6]streamline the bus industry from present condition of individual entrepreneurs who are loosely regulated, to one that is regulated through an institutional mechanism along the lines of service sectors such as health and education. These companies are the franchisees of this process. The NTC is the franchisor .Under this process the omnibus management companies have to be responsible to achieve targeted performance that are expected by the National Transport Commission. The companies will have to work under the contract that is made by the Commission. Initially the commission creates omnibus operating companies by providing financial facilities, and then the companies should be able to operate buses on given routes by following rules and regulations given by the NTC with the omnibus operating agreement. Under the re-organization, the National Transport Commission expects to enhance the quality of long distance bus services by making suitable institutional framework for the operator, passenger, and the regulator.

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[6] www.ntc.gov.lk

1.6 Objective.

The main objective of this study is to propose a suitable franchise system for long distance bus service in Sri Lanka in order to improve quality of the service. The National Transport Commission has recognized that the need of reform of the sector to improve the quality of the service and franchising of bus services has been initiated in 2008 as a strategy. Under this background the Commission is making bus companies and tries to establish an applicable franchise system which is able to address to improve the quality of the service.

1.7 Scope of the study

This study is entirely based on the long distance private bus passenger transport services, and it doesn't consider CTB bus services or short distance private bus services that are regulated by each Road Passenger Transport Authorities (RPTAs) of each province in the country. Long distance private bus services are regulated by the National Transport Commission, and franchising of bus services is also handling by the commission. Under this process the study mainly consider franchising of the bus services and improving the quality of the service. Usually quality of the service is measured by the passenger point of view, and this study mainly focuses passengers' perception and problems of the regulator of long distance private bus services in order to make suitable ideas to propose a suitable franchising system.

CHAPTER 2
LITERATURE REVIEW

2.1 Quality of the service of long distance bus services.

Quality of service regarding public transport services should be considered from global prospective and professionals review that quality of the service reflects the passengers' perception of transport performance. Quality of the service could be mentioned as the overall measured or perceived performance of transport service from the passenger's point of view. This definition shows that quality of the service of a transport system depends on operation decisions which are made by the transport system within the constraints of its budget. On the other hand decisions on where transport service should be provided, how long and how often transport service is provided and kind of service. Finally, quality of the service represents the passenger point of view regarding the activities and operations of a transit system.

Quality of the service can also be defend as an overall judgment similar to attitude towards the service and generally accepted as an antecedent of overall customers (Zenithal and Bitner, 1996). [7]Quality of the service of bus transport service is a broad category, and quality factors could be separated into two categories as availability factors and comfort and convenience factors.

1. Availability factors of public transport services.

- **Service coverage of transport system.**

Passengers need demand responsive services, and transport services should be provided within a reasonable walking distance of the passenger's origin and destination. Accessible should be provided to bus stops to serve passengers with disabilities and wish to use fixed route. If transport service is not available to reach to origin, the passenger discourages to use public transport.

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[7] Transit Capacity and Quality of Service 2nd Edition (2003) , Transport Research Board of the National Academy

- **Pedestrian access of transport system.**

Pedestrian access is a considerable factor, and minimum walking distance to transport services make easy to passengers, and quality transport service should be able to provide facilities to passengers to make minimum working distance to transit. Usually the passenger is not satisfied with more than 10 minutes walking distance to transport services. Improving of bicycle access and parking facilities for bicyclists by making bicycle connections to bus stops and stations, and on vehicle bicycle carrying facilities expands catchments area of transport system to improve quality of the service.

- **Scheduling of transport system.**

Well scheduled transport system reduces total travel time of passengers, and it provides facilities to utilize their time efficiently and effectively. Scheduling of transport means how often and when the transit service is provided during the day, and it is very important to use transport service as follows.

- The more frequent transit service makes short waiting time of passengers for buses.

- When the bus is missed there is a flexible to select acceptable travel times for the passenger.

- When the passenger knows the exact schedule he can select or manage travel time.

Number of hours per day when the transport service is provided is highly important .If the transit service is not provided when the passenger desired to travel, transport service will not be an option for that trip. On the other hand as increasing number of hours that transport service is provided, number of trips is increased. When the transit service is provided night time also, passenger is able to use night time for traveling, and it helps to increase productivity of passengers. Scheduling of transport service gives message to explain quality of service, and it shows that minimum journey time, minimum waiting time and availability of service for many hours of the day to increase number of trip types which are requirements for quality of the transit service.

- **Capacity of transit system.**

Capacity of a transport system highly effects on the quality of the service, and it shows availability of space of transit for the passenger. If the bus is full when it arrives to the bus stop, transit service is not available at the time for passengers who wait for the bus. Further lack of availability of securement space of the bus for disabled reduces quality of services. Although the service is operated at the time, trip cannot be provided at the requested time when the bus is full. This type of situation should not be existed within a quality transport system. However this situation shows the necessity of providing demand responsive transport service as a requirement of quality transit service.

- **Availability of information regarding transport system and access to service information.**

Availability of information regarding public transit increases quality of the service, and it provides facilities to passengers to plan their trips. Passengers need to know the followings, and efficient quality transport system provides facilities to make awareness of infrequent and regular passengers to plain their trips.

- How to use transport service.

- Where to go to access for transport service.

- Where the passenger should get off near their destination.

- Are there any transfers should be made.

- When transport services are scheduled to departure and arrive.

Timely and correct information is a basic feature of quality transport service when regular service adjustments are made, the temporary service changers are required, and when service problems arise, information are distributed as follows.

- Printed distributable information: Time table, maps fares and etc.

- Posted information: System maps and etc.

- Audible announcement: Major bus stops and etc.

- Visual displays.

- Transport infrastructure: Displaying of information at bus shelters, sign and etc.

- Telephone information.

- Internet information.

The information should be updated each time when the schedule is updated. Providing information during service disruptions should be accurate and completed. Possibility that circumstances could be changed should also be mentioned clearly .This process helps to passengers to plan their trips, and to find out other means of reaching their destinations. Real time information is very useful for passengers. When the next bus will arrive to the terminal or to the bus stop, and it helps to passengers to take different buses rather than waiting at the bus terminal or at the bus stop. On the other hand this information helps to spread out passenger load among different transport services and to use resources efficiently and effectively.

- **Refreshment facilities on the passengers' way to destination.**

Refreshment facilities for passengers is also a considerable factor of public bus transport service , and specially acceptable level of quality refreshment places should also be available in order to attract high income level people towards public bus services.

2. **Comfort and convenience factors of public transport services.**

Comfort and convenience transport service is a necessary requirement for a well quality transport system. Comfort means physically good and suitable facilities, and convenience gives easy and minimum difficulties for passengers. Usually comfort attracts more passengers and convenience makes strengthen to attract passengers. However the more comfortable and the more convenience make the more quality.

- **Passenger loads of transport services.**

It has been recognized that ensuring a seat for the passenger is a basic necessity for quality of service. Bus service is less attractive when passengers have to stand for long period of time, and this situation is very inconvenience when transit service is highly crowded. Crowded bus means inconvenience and slow down transport operations as the bus takes more time to board and alight to passengers. On the other hand when the passenger must stand at the bus, it becomes difficult for the passenger to use his travel time productively, and under this condition passengers have to go through very difficulties, and it reduces the quality of the service.

Usually passenger crowding on the bus is assessed based on the occupancy level of bus, and consider the number of seats. Professionals use load factor (the relationship between average number of seats and average number of passengers) to describe crowding level. The load factor should be at 01 to ensure passenger comfort and convenience. However, well quality transport systems always try to make balance between service frequencies and load factors. When a situation like boarding volume is relatively low, service frequencies should be low in order to ensure utilizing resources by avoiding loading level nearly empty buses. On the other hand sufficient buses should be provided to ensure seats nearly for all passengers. The best passenger loading level ensures that passengers will not have to wait long time for the next bus.

- **Reliability of transport services and travel time of the journey of a transport system.**

Reliability is also a factor that ensures the quality of the service in a transit system, and it shows both on time performance and the regularity of headways between successive transport vehicles. However reliability affects the followings.

- The amount of time that passengers must wait for buses.

- Passenger arrival time at the destination day to day.

- Total trip time of passengers.

If the bus will arrive earlier than the scheduled time, passengers have to come to the bus stop earlier, and if the passenger believes that the bus will arrive later than

scheduled time, he will have to reach to the bus stop later than it was scheduled. These situations make inconvenience to the passenger, and the situation minimizes the capability of planning trips by passengers. However decreasing of reliability reduces quality of services, and these situations create unscheduled waits that are not proper with passenger point of view. However reliability is reduced by the above situations and a transit system should be able to mitigate these situations in order to ensure quality of service.

Travel time is a considerable factor of a transport service, and the passengers prefer to utilize his time efficiently, and onboard transit time could be used productively from a quality bus service. Total trip time includes waiting time, onboard time and transfer time. Travel time can be measured by itself or relation to other modes. However minimum travel is one of features of quality service.

- **Safety and security of transit service.**

Safety and security is also a necessary factor to ensure quality of the service in any transport system. Safety includes potential for being involved a crash, slips and falls while using stairs or other elements of the transport system. Security means real and perceived chance of being the victim of a crime while using transport service, and quality transport system should be ready to provide safe transit facilities.

- **Cost of transport system.**

Cost of passengers should be justified with service facilities, and minimum cost for the passenger is a basic requirement in a quality transport system. Mainly price affordability for low income people and time affordability for high income level people are considered as a requirement of a quality transport system.

- **Cleanliness of buses.**

Cleanliness and good appearance of bus is a considerable factor which is able to attract higher income level people, and this factor makes happiness of passenger with pleasant environment of bus services. Cleanliness sometimes shows comfort level of buses.

- **Environmental protection.**

Environmental protection has been a basic requirement of modern public transport system, and it is a necessary factor for a sustainable transport system.

2.2 Public bus transport services management models.

Bus service management models could be found in the world, and these models should ensure the quality of the service along with protecting passengers, bus operators, and further they should address economic and social activities of countries. Any type of bus service management model should help to utilize country's resources with effective and efficient ways to make macro economic benefits for the society. However there are various regulatory options to drive the public transport sector of the world. Strengthens and weaknesses of each option is deferent from others, and policy makers have to select the real option to manage each county's public transport sector. Benefits of each alternative regulatory option depend on the nature of the market structure and the intervention of the government and rules and regulations that are being made by the government. [8]Each regulatory option should be discussed with its principal characteristics, and the options could be separated by the degree of intervention of the authority to the market, and the following [9]features provide different approaches to manage public transport services.

- Standards of quality of the services.
- Quality controls or quotas.
- Barriers to enter to the supply side of public transport.
- State ownership of public transport.
- Price regulation of public transport sector.

There are three main approaches of regulating of public transport in the world, and they provide clear vision to recognize existing public transport management models. Three main approaches could be recognized by considering the above features, and this could be shown as Figure 2.1.

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[8] Regulation of Bus Services Outside the Greater Dublin Area (2002) ,Department of Transport Board

[9] (There may be other features)
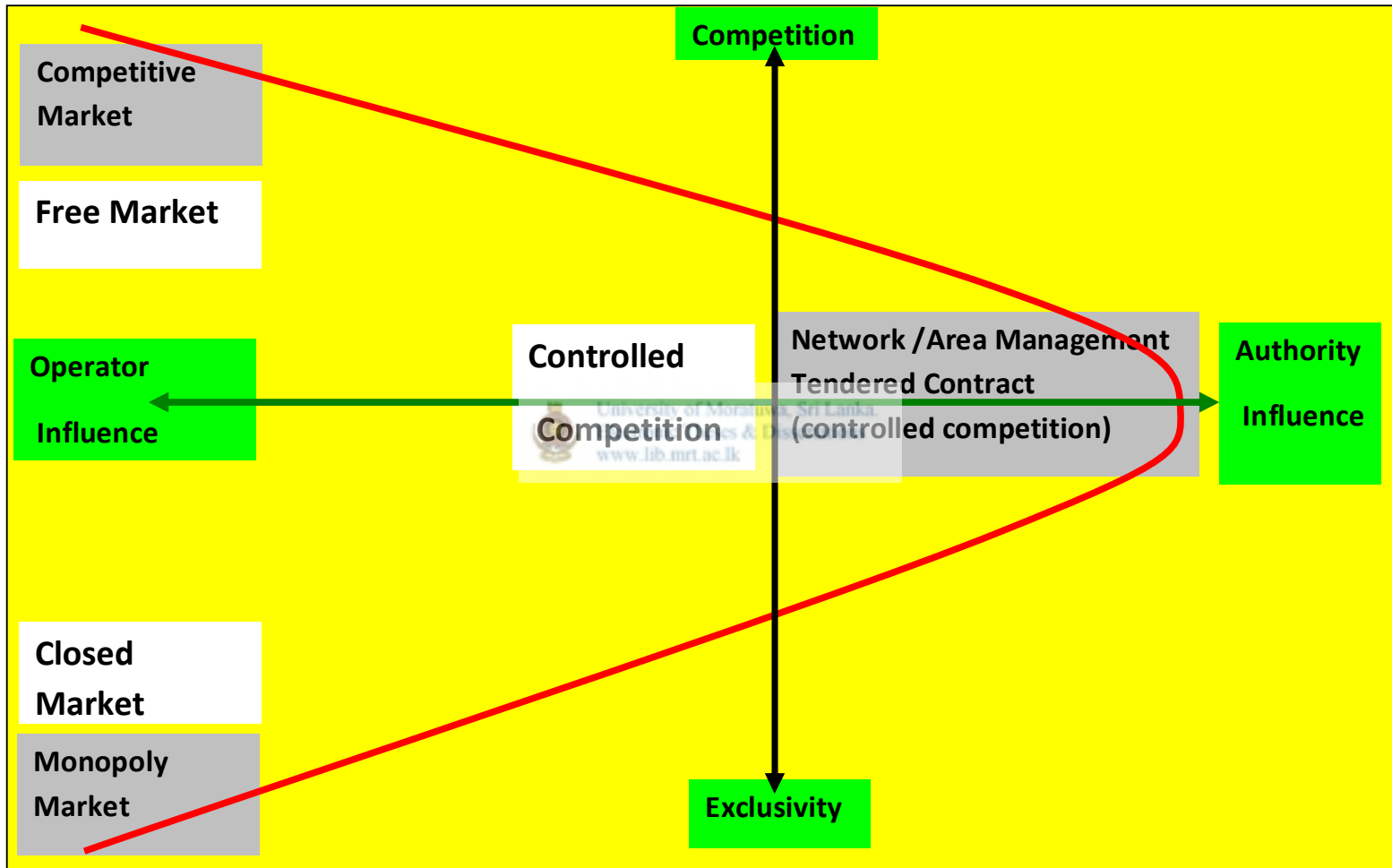
Figure 2.1: Range of bus transport regulatory options to make quality service.

2.3   Closed market structure to improve the quality of the service.

This management model of bus industry protects bus operators, and there is no competition among operators. Under this process there may be either as a network monopoly or licenses with exclusive right. Sri Lankan government had used this management system between 1931 and 1957 with consolidation under regulated private monopoly. Under this process it failed to establish quality bus service. Then the government has moved its policy for expansion under a nationalized state monopoly from 1958 to 1978. But this management system couldn't find solution and management of bus transport was deteriorated due to high cost, over loading and lack of re-investment. These experiences have shown that monopoly system is always not applicable for making quality bus transit system. Free of competition is not a good situation for service providers and it doesn't give signals to operators to recognize needs of passengers, and the operator could make decisions without considering inconveniences of passengers.

This management model doesn't provide alternatives to the government in situations where the existing operator doesn't play his role to provide bus services with satisfying quality parameters such as loading level, cleanliness of buses, travel time, safety during the journeys and etc. On the other hand closed market system of bus transport sector doesn't encourage the operator to make value added service such as entertainment during the journey.   However closed market monopolies of public bus transit sector represent legacy, and it has involved with ownership or involvement by the public sector, and the regulator and the operator as part of the same organization.

Policy makers review that natural monopoly makes economies of scale in public transit sector. But this argument is not applicable in Sri Lanka, and bus industry in the country is very different than other industries like rail transport system of Sri Lanka, and this argument is applicable for the rail industry due to efficient resources utilization of rail industry under the government monopoly. If the rail industry is driven at the competitive market, it makes inefficient resource utilization by making more rail lines, more rail station and etc. But there is no need of more roads, more bus terminals, more bus halts and etc. for the bus industry under the competitive market or controlled market system .As shown in Table 2.1 and Table 2.2, it could summarize

strengthen and weakness regarding quality of the service of bus transit system of closed market structure.

Table 2.1: Strengthen and weaknesses regarding some quality criteria of closed market system of bus industry.

Service Quality Criteria		
Service Quality Criteria.	**Strengthens of closed market system.**	**Weaknesses of closed market system.**
Reliability of the service	Responsibility is clearly identified by the government, and passengers can make requests and complaints when it makes breakdowns and other situations like neglect of time tables, providing on-time information regarding delays and breakdown.	The operator may not encourage minimizing breakdowns of the service as the whole market is entirely caught by the operator. The operator knows that passengers can't give up the idea of using bus service due to monopoly market. This process limits ability of making complaints by the passenger as the operator and the regulator is the same.
Safety and security	Usually the government always tries to recruit educated and well disciplined drivers and conductors, and they are trained.	Always the monopoly operator doesn't try to recruit educated and well disciplined drivers and conductors as political intervention is being existed.
Service coverage	Usually monopoly market tries to spread its service for all type of passengers for various trip purposes.	
Scheduling	The monopoly operator can operate its buses following a given time table as the whole benefits of each trip is taken by someone.	The operator may not encourage covering all trips of the day to minimize operating cost.

Table 2.2: Strengthen and weaknesses regarding some quality criteria of closed market system of bus industry, cont…

Service Quality Criteria.		
Service Quality Criteria.	**Strengthens of closed market system.**	**Weaknesses of closed market system.**
Passenger load	The operator doesn't try to pick up all the passengers as all the income of the route is taken by the same operator.	Sometimes the operator may not be able to provide number of enough buses to provide services as there is no any competitor.
Travel time	Usually this operator doesn't have more or less travel time as the operator already has taken the whole market.	The operator knows that the passenger doesn't have alternatives and the operator can change travel time for each trip to get more passengers to the bus.
Standards of buses	There is potential to obtain higher standard buses through large number of order size.	The government has to bear the cost of buses, and investment constrains are made by lack of availability of funds.

Although at the present natural monopoly is hardly found, an argument is made to recognize of public transport as an essential service and it should be driven by the government monopoly. The considerable thing is that experience of Sri Lanka has shown failure of such a system to provide quality bus services during the period of 1939 -1957 and 1958 – 1978 where regulated private monopoly and nationalized monopoly were existed, respectively. On the other hand there is an argument that social cost of failure to provide quality bus service is too high to put at risk from market failure. But this argument is justified when only the pure competitive market is being existed, and under a controlled market this problem is solved by intervention of the government as the regulator by drawing policies towards neglected parties by the private operator. However this monopoly market structure may not be a sustainable approach to provide quality bus service in Sri Lanka as it has not shown performance during the system was existed.

2.4 Competitive market structure to improve the quality of the service.

Competitive market structure allows operators to introduce or remove services, and under the pure competition it requires to behave freely for the operator. But pure competition was not existed and intervention of the government is necessary to justify social requirement such as acceptable price, safety, minimum comfort level and etc. This deregulation is best known as the British model (except London), and the United Kingdom introduced it in 1986. Most of policy makers review that this deregulation is able to make dynamic efficiency in order to utilize resources of the public transport

sector. The main objective of the competitive service provider is to maximize profits by operating buses, and on the other hand he always tries to minimize cost of the service .Under this process the competitive service provider utilizes his resource with efficiently and effectively. But in practically this situation is deferent, and service providers tend to maximize their profits by reducing quality of the service.

This competitive structure mainly focuses commercial activities rather than considering the quality of the service. The more quality makes the more cost of the transport sector. Competitive operator usually neglects the service quality parameters such as safety of passengers, reliability of the service, comfort level of bus services, travel time, cleanliness of buses and etc. Under this condition, the following argument could be made, and Table 2.3 shows strengthen and weaknesses of deregulated bus industry.

Competitive market stricture of bus transit sector makes dynamic efficiency and effective utilization of resources .But efficiency and effectively utilization of resources is unable to provide quality service without intervention of the government or without making strong service monitoring system. Under this situation this market structure requires regulations of the government.

Table 2.3: Strengthens and weaknesses of deregulated market of bus industry.

Service Quality Criteria		
Service Quality Criteria	**Strengthens of deregulated market**	**weaknesses of deregulated market**
Reliability of the service.		It requires enforcement through regulatory actions.
Safety and security.		Regulatory intervention is necessary.
Service coverage.	It covers higher passenger demand routes.	Regulatory intervention is necessary to serve passengers at peak hours, to make demand responsive service such as services for vulnerable people.
Scheduling.	Operator encourages to operate buses during peak hours.	Regulatory intervention is necessary to operate buses under a time table, and to operate buses at night time.
Passenger load.		Regulatory intervention is necessary to ensure acceptable load factors of buses.
Travel time.		Regulatory intervention is required to enforce operators to make operate buses at acceptable speed without high or less speed during the journey.
Standards of buses.	Automatically operators are encouraged to invest on high quality buses to get higher commercial returns.	Operators tend to use aged or sub – standard buses to increase their profits without making new investment on high quality buses.

Both deregulation and competitive models limit in terms of achieving broader social and economic policy objectives that are needed to offer quality bus service for passengers in order to satisfy their rights to get an acceptable public transport service within existing social and economic environment. Fare policy requires at least minimum regulations to ensure concessions for the passenger and the operator. On the other hand qualitative regulation should be continued to make sure of safety standards like age of operating buses, and other conditions like number of seats of buses, interior conditions of buses, travel time for journey, minimum qualifications of drivers and conductors and etc. However, deregulation models applied in many countries have shown shortages. Under this situation it is noteworthy that completely deregulation can't provide quality bus service without intervention of the government, and this reviews that it is needed other improved management model to ensure the quality bus services.

2.5   Controlled competitive market for improving quality of the service.

Closed market and free market systems for providing public transport services have many difficulties in establishing quality transport services as mentioned in the above. [10]Controlled competition is a market where operators have exclusive right to operate services for fixed periods following award through a competitive process. Under this condition it requires more applicable bus transport management model to provide quality transport service for passengers. But both of the government's intervention and the competitive market have provided good approach to make a applicable management model to reach the expected standard of bus services. In one hand competition of the transport supply market could be used to make efficient and effective utilization of country's resource .On the other hand intervention of the government to the market, could make maximum benefits by improving quality of the service, and this type of system could be recognized as controlled competition and this model could be shown as Figure 2.4.

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[10] Regulation of Bus Services Outside the Greater Dublin Area (2002), Department of Transport ,Dublin 2
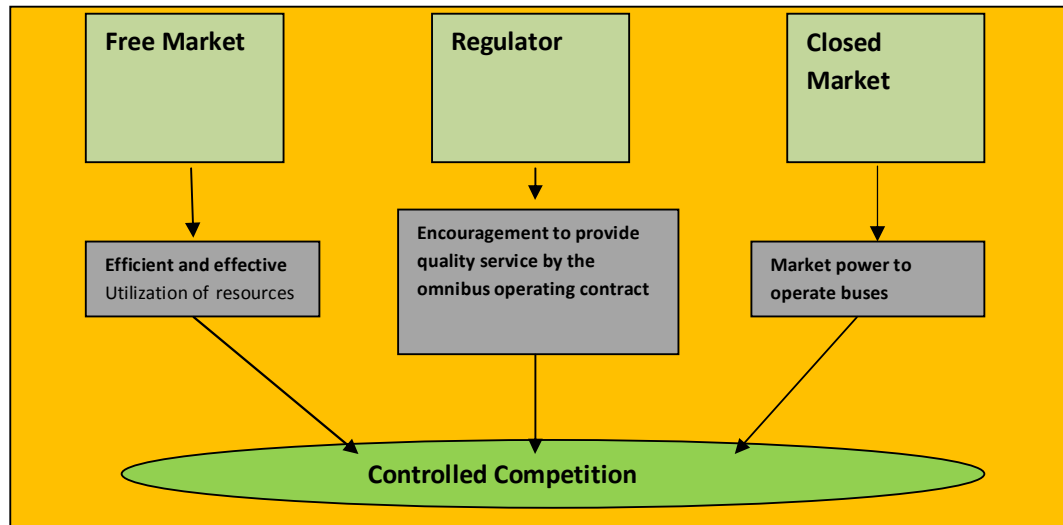
Figure 2.2: Controlled competition market.

This model consists with mixed features of the closed market and competitive market structures .The considerable feature is that this model converts the supply market of bus industry from "competition at the market" into "Competition for the market". This component helps to recommend and validate of franchise system for public transport service to ensure quality of the service. Competition at the market of public bus transport services means that bus operations are taken place with competitive activities on the road. Under this process bus operators try to pick up more and more passengers, and to increase their daily income, and they hardly consider the quality of the service. This type of system makes violation of rules and regulations that have been provided by the regulator, and this situation is not good for a quality service. Competition for the market of public bus transport services means that operators try to get permission to operate buses by showing their capabilities of making quality service to the regulator. Under this process the regulator select the real and suitable operator to operate buses on each route by considering their abilities to reach regulator's objectives. These objectives make quality services for the passenger and benefits for the operator, and further more it utilizes resources to make maximum benefits for the society.

Under this controlled competition market, many types of franchising systems could be found, and the following franchising models could be selected for the purposes of the study. A report on "Regulation of bus services outside the Greater Dublin Area" has

been published by the department of transport in 2002, and the report has mentioned descriptions of the following public transport management models.

2.5.1 Management contract between the regulator of the public transit sector and the company under the system of competitive tendering.

This model gives power to the company to manage bus operations under the conditions of the regulator. This model transfers of staff with associated premises and buses or other vehicles as a single economic entity. The regulator can make minimum standards and integration requirements, and to expect professional management to drive policies into practice. On the other hand the management company could be given the responsibility for establishing quality service and monitoring performance. This system could be found in French cities.

2.5.2 Negotiated contract between the regulator and the operator (company).

Under this system the regulator and the operator come to an agreement, and this system allows the regulator for a considerable flexibility in planning service. Negotiation between the regulator and the company could make a good path for a suitable system which apply to deliver efficient service within the existing social and economic environment .This process may not be transparent and it seem to be bias. But it could be more suitable for a situation where there is actually limited potential for competition .This system could be seen in Norway, Germany and Spain.

2.5.3 Term Limited Licenses for Operating Buses on Specific Bus Route or a Network.

Under this system, the regulator invites to bus operators to apply for fixed period of exclusive operations. Usually this system allows the regulator to select operators by competing "bids". The selection could be done based on "quality comparison", and assessing benefits of different service propositions. The regulator may face very difficult task in selecting the real and the most suitable operator among operators which has track record and the premises of new entrant.

2.5.4 Net Cost Contract between the regulator and the operator.

This contract is made between the regulator and the company, and under the Net Cost Contract the regulator pays the "net" difference between the predicted revenue and the cost. It is necessary detailed information on both costs and revenues in order to make a realistic bid. Conflicts between the regulator and the company may be created when subsequent changers or additions are made to the route or network. Net cost approach could be found in Britain and New Zealand.

2.5.5 Creating Bus Operating Companies by the Regulator by Providing Financial, Managerial and Institutional support.

Under this process the regulator creates bus operating companies by clustering existing individual bus operators of a route or a network. Bus operating companies are being created by the National Transport Commission in Sri Lanka, and financial, managerial and institutional supports are given to the company by the Commission. Shares of the company are distributed among the existing bus operators of the route as ownership of one bus is one share of the company. The company should operate buses by following rules and regulation which are made on the omnibus operating contract by the National Transport Commission. The Bus operating company is responsible for the followings.

- Operating buses on the given route.
- Operating buses according to the time table given by the NTC.
- Issuing tickets for all passengers.
- Loading only acceptable number of passengers for buses.
- Listing and arranging buses according to the time table.
- The company should operate only buses which have valid passenger transport permits.

The omnibus operating Company manages bus operations as a single controller which has buses to satisfy passenger demand in times where passenger needs the service.

2.6 World experience of franchising of public transport.

It is necessary to recognize why franchising system is proposed to increase quality of the service of long distance bus service in Sri Lanka. In many countries have followed this kind of franchising system to achieve their objectives regarding the quality of the service, and their experiences provide good path to recognize the performance of franchising system. Under this situation the following studies show the validity of franchising system to improve the quality of the service.

A study on **"Public Transit for the Urban Poor in Pakistan: Balancing Efficiency and Equity" has been done by Murtaza Haider, (Ph.D) and Madhav Badami , Ph.D** *(Assistant Professors, McGill University)* , and this study mostly focuses on franchising of public transport in GIRA (Greater Islamabad Rawalpindi Area) in Pakistan. They mentioned on study that franchising of public transit provides a good path to achieve targeted social and economic benefits for the society and the operator. This study reviews that bus franchising experience in Pakistan suggests that the gains in quality and efficiency have been realized at the cost of equity.

They have made comparison between non- franchised and franchised transport in GIRA, and the following conditions have been recognized in GIRA during non–franchised transport process, and they show that public transit was unreliable and transit operator often overcharging during the peak demand period.

Deficiencies in non-franchised transit in GIRA.

- Public transit did not follow a schedule, and regular services were effectively provided only during the peak period.
- Transport operators didn't consider the published fare, and in holidays reduced transport supply , and it made difficulties for passengers.
- During rush period transit vehicles didn't come to the bus stand to allow passengers to board and alight, and it caused to make congestion on the road.
- Overcrowding was a common practice in peak periods.
- The operators didn't operate transit over the entire route and abandon passengers at stops where rider ship runs thin.

- Transit vehicles operate only they are filled, and otherwise they remained parked at bus stops , and it caused to make inconvenience for passengers.
- Transit vehicles were not properly maintained, and it caused to meet accidents and to make environmental pollution.
- Speeding and reckless driving and unnecessary competition for passengers caused to meet accidents.

Further this study reviews that the following conditions have contributed to the government's decision to initiate franchising transit in GIRA.

- Inefficient poor quality transit service.
- Difficulty with regulation.
- Lack of specialized transit services for vulnerable people.
- State subsidy had to be given.
- Pressure from multilateral donor agencies.

Conclusions of the study have been mentioned as follows.

- Franchise urban transit has capacity to improve mobility in GIRA.
- Franchised transit can offer safe, courteous , reliable and efficient transit service that has not been offered by private transport operators in GIRA.
- The government should provide vocational training.

However this study has mentioned some issues of franchised transit services in GIRA as follows.

- Franchising of public transit in GIRA has caused to lose their livelihood because their route permits are cancelled to allow exclusive operating rights to franchised buses.
- People who could not afford to pay higher transport fares for the franchised transit, have to be treated by the government.

This study explains that franchising of public transport is a better approach to make well efficient and reliable transit service, and it provides facilities to utilize resources with management of private sector under the specifications of the government. But the considerable situation is that any type of franchising system should not neglect the existing bus operators, and they must also be attached to the new market system, and otherwise franchising will case to create economic and social problems in the country .If the new system will not consider the problems of existing operators, it causes to loss the operators' livelihood, and the proposing franchising system for Sri Lanka should definitely attach the existing bus operators to the new system. Fare policy will have to be handled strictly by the NTC.

A study on **"Designing of New Franchising Schemes for Urban Public Transport" has been done by Chris ,Bryan Matthews , Pura Granero and Nick Marler (2001),** of Institute of Transport Studies , University of Leeds .They have recommended that Franchising of public transit is the best way of obtaining private sector capital for transport project. They have identified two broad approaches as outright privatization and public private partnership (PPPs), and the authors have clearly mentioned that franchising system is the most promising approach. PPPs are made by government and private sector organizations .The government plays its role as the facilitator, and private sector provide services by following the instructions of the authority. This partnership has the potential for catering synergy between public service culture and entrepreneurial approach. The authors have mentioned five desirable features for a successful private public partnership as follows, and they show effectiveness of a franchising system to make an applicable path to improve quality of the service.

- It provides a joint interest by delivering an efficient service.
- It provide co-operative effort , with clear division of responsibility.
- Shared cost and revenue relationships, with more flexibility than if the public sector operates alone.
- Private sector is interested in making good customer care and to provide quality service.
- Public sector considers for the wider range of public interest including non–users.

The authors have made their conclusions by considering experience of Manchester Metro link, East Leads Bus Corridor, Leeds Supper tram, and London Dockland, and they made the following conclusions.

- Private finance may be used to finance urban transit schemes in a variety of ways.
- Outright privatization causes to make decisions based on commercial objectives rather than social consideration.
- Franchising is the best option to make better performance of public transit, and generally they have recommended franchising of public transit to gain social and commercial benefits with utilizing resources in well efficient manner.

This study has clearly reviewed that applicable franchising system is able to achieve both of commercial and social objectives, and the proposing franchising system should ensure co-operative connection between the NTC and bus operating companies, and it should be able to play its role as the facilitator and the leader of franchising system.

A study on **"An Assessment of franchise Based Urban Transport scheme in Punjab" has been done by G.A. Anjum and R. Hameed (2007)** , Department of City and Regional Planning, University of Engineering and Technology in Lahore. This study has made good details and conclusions regarding the franchising of urban transport in Punjab.

Until the late 1990s, urban transport in Pakistan had shown limited element of quality and planning of development, and the public transit system failed to provide reliable service for passengers and they were unable to treat women, children and elders. Under this condition the government of Punjab has decided to make safe, reliable and affordable public transport system through a system of competitively tendered franchises. According to the study Punjab government has launched a franchised based transport system in 1999 within five major cities of Punjab. This study provides a thorough review of performance of the new transport system. The analysis of the study has been based on the data collected in numerous occasions and including surveys conducted as a part of faculty research project. On the other hand the authors have made structured interviews with government officials and franchise operators.

This methodology shows that making structured interviews with government officials is very important, and this method could also be applied to get experts' opinion on effectiveness of each public transport management model to improve quality of the service.

The study reviews that franchising system has improved quality of the service, and it has increased mobility. But they have reviewed that there are some negative situations could also be found with the franchising scheme. Marginalization of low income passengers, mismanagement by inexperienced operators and low investment for brand new buses had been recognized. This type of situation has been made by insufficient support of the regulator. There are some lessons to be taken from this study. Providing support measures such as training of operators, managerial staff, drivers and conductors, on-street regulation, removal of encroachments, installations of bus stops, sign boards and passenger shelters are must also be considered by the regulator. Finally the study mentioned that the future of the franchising scheme will highly be depend on both political part of the government and managerial competence of the regulatory authorities , and it is necessary to provide market sensitive regulations. However the study recommended that franchise scheme needs a strong institutional capacity to provide acceptable level of services with sustainable approach. The NTC will have to provide facilities to make improvement of managerial skills of OMCs , or otherwise the proposing franchising system may not be able to solve existing management and operational problems which are taken place in Sri Lanka due to inapplicable regulatory system which has been made with many number of bus operators. Usually regulatory bodies of Sri Lanka have to depend on political part of the government, and the NTC will have to create market sensitive regulations to avoid unnecessary political intervention.

[11]The World Bank has recommended treating public transport as a commercial business, and Sri Lanka needs a regulatory reform of the public transport sector in order to maximize benefits for the passenger and to the whole society. The World

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[11] Bus Franchising in Developing Countries: Some Recent World Bank Experience (2005) , Ken G William

Bank has recommended the followings when making regulatory reforms in developing countries.

- Political commitment to the reform is essential.
- A proper legal foundation is necessary.
- A strong local institutional foundation is required.
- Design of the franchising system must realistically reflecting social objectives.
- Fares control must be consistent with financial viability of franchisees.
- The administrative agency must be expert and trustworthy.
- Industry restructuring must be provided.
- Sub contracting should strictly be limited.
- Vested interest of public enterprises must be confronted.
- Good monitoring and enforcement is essential.

This studies show that as a developing country, Sri Lanka needs a franchising system to improve the quality of the service of bus industry. However properly designed franchising system has to be adopted to the industry, and proper administrative, legal , independent and strong regulatory body have been basic requirements for a successful franchising system.

CHAPTER 03

METHODOLOGY

This study consists of three surveys to reach to the main objective, and first survey is to get passengers opinion on importance level of each quality factor according to feelings of them. Second survey is done to get experts' opinion on effectiveness of each management model to improve behavior of quality factors. Third survey is going to be conducted to get experts' opinion on effectiveness of each management model to solve existing problems of the regulator of bus industry. The survey which is done to get passengers' opinion, expects to rank quality factors based on the opinion of passengers. Five of the most important (comparatively) quality factors are selected to be considered to the survey which is made to gets experts' opinion on effectiveness of each management model to improve behavior of these quality factors. The third survey has done to get experts' opinion on effective level of each management model to solve selected problems of the regulator. The most effective franchising system will be selected based on experts' opinion. The second and the third survey will select the most effective market model to solve existing problems of passengers and the regulator, respectively.

3.1   Passenger interview survey for ranking quality factors of bus service.

The first survey (interview - passengers) helps to identify priorities of quality factors of long distance bus service in Sri Lanka, and it will provide a correct direction to make understand expectations of passengers when using bus transport services. Further the survey provides a good path to understand attitude of bus transport users. However, findings of the first survey will provide a clear background to determine what policies should be adapted to the franchising system in order to meet or exceed their expectations.

Survey form of this survey considers 13 of quality factors consists of six factors regarding availability of service ,and six factors regarding comfort and convenience of public transport services . One quality factor (Environmental protection) is included to the survey due to its neediness for a sustainable transport system, and all of these quality factors have been described at the literature review. This survey helps to the study to identify quality factors of greatest importance to the passenger. On the other

hand this survey helps to identify the most important quality factors in order to pay attention when proposing a suitable franchising system. Data of this survey shows passengers' expectations. Conclusion of this survey helps to list quality factors with priority basis based on passengers' opinion .This survey shows which factors should be considered when establishing any type of management model such as franchising system of public bus transport services. Final results of this survey could be used to identify what are the main areas where should be considered when proposing a suitable franchising system for long distance bus service in Sri Lanka.

Sample size of this survey is total of 500 of passengers, and they are selected shown as Table 3.1 by considering availability of each service type of long distance bus service (supper luxury, luxury, semi luxury and normal) in Sri Lanka. Under this procedure of selection method, all types of services users are represented, and the following survey form is used for data collection.

Selecting sample from each type of service users.

Service type	Number of passengers selecting to be interviewed
Super luxury	5
Luxury	120
Semi luxury	50
Normal	300
Total number of passengers	**500**

Survey for Ranking and Prioritizing of Quality Factors of Long Distance Bus Service in Sri Lanka

Quality Factor	Degree of importance				
	Not important	Somewhat important	Important	Very Important	Extremely very important
Availability of bus terminals and bus halts	Not important	Somewhat important	Important	Very important	Extremely very important
Service frequency	Not important	Somewhat important	Important	Very important	Extremely very important
Reliability of bus that come on scheduled time	Not important	Somewhat important	Important	Very important	Extremely very important
Loading level of buses	Not important	Somewhat important	Important	Very important	Extremely very important
Cleanliness of buses	Not important	Somewhat important	Important	Very important	Extremely very important
Cost affordability (Reasonable Bus fare)	Not important	Somewhat important	Important	Very important	Extremely very important
Availability of information regarding bus service (Schedule , Maps , Transferring places)	Not important	Somewhat important	Important	Very important	Extremely very important
Availability of service information by phone, E mail, internet and etc.	Not important	Somewhat important	Important	Very important	Extremely very important
Safety when traveling by buses	Not important	Somewhat important	Important	Very important	Extremely very important
Behavior of bus crews	Not important	Somewhat important	Important	Very important	Extremely very important
Physical conditions of bus terminals and bus halts	Not important	Somewhat important	Important	Very important	Extremely very important
Refreshment Places to have facilities on your way to destination	Not important	Somewhat important	Important	Very important	Extremely very important
Environmental protection	Not important	Somewhat important	Important	Very important	Extremely very important

3:2   Survey to get experts' opinion on effectiveness of each management model to improve behavior of selected quality factors.

This survey will select 15 of experts and professionals of public transport sector in order to get ideas and opinions on which management model improves behavior of selected quality factors .Quality factors are ranked by considering important level of them to the passenger, and the most sensitive and important five quality factors are selected from the above survey. These selected five quality factors contribute to the quality of the service more than the other quality factors. These five quality factors are included to this survey to get experts' opinion on effectiveness level of each management model to improve behaviors of these factors. Five of public transport management models including creating omnibus management companies, have been selected for this to make comparisons, and these management models are taken from the literature survey. The following survey form is used to get experts' opinions.

Questionnaire for Experts' opinions for a suitable franchising system for long distance bus service in Sri Lanka in order to improve the quality of the service

Quality Factors	Selected Franchising Models to Compare suitability for Sri Lanka in order to improve Quality of the Service of Long Distance Bus Service from the Point of Passenger Point of View																								
	Model -01 Management contract between the regulator and the company					Model -02 Negotiated contract between the regulator and the operator					Model -03 Term Limited licenses for operating buses					Model -04 Net Cost Contract between the regulator and the operator					Model -05 Creating Bus Operating Companies				
	Not Effective	Somewhat Effective	Effective	Very Effective	Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Very Effective
Expectable Passenger Loading Level of Buses	Not Effective	Somewhat	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat	Effective	Very Effective	Extremely Very Effective
Safety When Traveling by Buses	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective
Reliability of bus that come on scheduled time	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective
Service Frequency of Bus Service	Not Effective	Somewhat Effective	Somewhat Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective
Behavior of Bus Crews	Not Effective	Somewhat Effective	Somewhat Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective

The main objective of doing this survey is to get and absorb knowledge of transport sector experts' for the purposes of proposing a suitable franchising system in order to improve the quality of the service. Experts have global knowledge on each type of public transport management model, and they will provide correct direction for a suitable franchising system for the country.

If large numbers of passengers are selected to be interviewed, to get ideas and opinions, it may not be useful because many times they are not competent to discuss on management models of public transport sector or otherwise they will have to be guided by improving their knowledge of management models of the sector. This type of task takes much time, on the other hand accuracy and trustfulness of data will be very low. Under this situation and with the nature of this study, statistically–sound sample consists of passengers may not be feasible, and convenience sample consists of experts and professionals of the sector will provide more accurate and trustful data and information which could be used to propose a suitable franchising system**.**

3.3   Survey to get experts' opinion on effectiveness of each management model to solve selected problems of the regulator.

This survey expects to get experts' opinion on effectiveness of each franchising model to solve six of selected problems of the regulator, and these problems are described at the introduction chapter. This survey will consider the same 05 of franchising models which have been considered for the above survey. The following survey form will be used to get experts' opinions.

Questionnaire for Experts' opinions for a suitable franchising system for long distance bus service in Sri Lanka in order to improve the quality of the service

Problems of Regulator	**Selected Franchising Models** to Compare suitability for Sri Lanka in order to improve Quality of the Service of Long Distance Bus Service from the Regulator Point of View																								
	Model -01 Management contract between the regulator and the company					**Model -02** Negotiated contract between the regulator and the operator					**Model -03** Term Limited licenses for operating buses					**Model -04** Net Cost Contract between the regulator and the operator					**Model -05** Creating Bus Operating Companies				
	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very
Inefficient competition between individual operators	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective
Difficult for administrating of bus operators	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective
No responsible for bus operations	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very	Somewhat Effective	Effective	Very Effective	Extremely Very	
Unnecessary Political intervention	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	
Illegal bus operations	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective
Upgrade social level of bus owners	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	N Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective	Not Effective	Somewhat Effective	Effective	Very Effective	Extremely Very Effective

3.4   Data collection.

Data collection of the passenger interview survey will be done at main bus stands at Bastian Mawatha, Kurunegala and Kandy in order to get results from passengers who are living under different economic and social environment. Passengers will be guided by the enumerator to make awareness on each quality factor when the passenger is not able to understand what is the meaning of each factor.

Data collection of the other two surveys will be done by the enumerator by meeting and making discussion with each expert. The enumerator meets each expert having an appointment, and he discusses with the expert on management models of public transport sector, and existing situation and problems related to the passenger, regulator and bus operator of long distance bus services, and then makes awareness on the selected five management models. Ideas and opinions of experts and professionals will be asked regarding effectiveness of each model to solve each problem of the passenger and the regulator. Opinions are requested from the same experts for these two surveys .When the survey form is filed, suggestions will also be requested from experts in order to recognize how to enhance applicability of new suitable franchising system.

3.5   Analysis of data

Hypothesis testing method is going to be used to analyze data, and comparisons are done based on the mean value, and SPSS software will be used to make analysis .Data of the three surveys are analyzed separately by using the same software.

Mean value is equal to the sum of the values divided by the number of values, and in other wards mean is just the average of the numbers. Mean value give a planner arc between two endpoints.

Important levels of each quality factor of the passenger interview survey are rated as follows.

Important level of quality factor to the passenger	Rate
Not important	0
Somewhat important	0.25
Important	0.50
Very important	0.75
Extremely very important	01

According to this rates maximum mean value is "01" and minimum is "0", and mean value is varying between "01" and "0", and when the mean value is closed to "01" , important level of the quality factor is high, and mean value is closed towards "0", it means that importance level of the quality factor is low. Quality factors are ranked based on these values.

Effectiveness level of each management model to improve behavior of each quality factor, and to solve each problem of the regulator, is rated as follows.

Effectiveness level of each management model	Rate
Not effective	0
Somewhat effective	0.25
Effective	0.50
Very effective	0.75
Extremely very effective	01

In addition to statistical analysis of experts' opinions, suggestions of experts will be described to enhance applicability of management model which will be selected based on the conclusions of the above surveys.

CHAPTER 04

REVIEWING OF RESULTS OF DATA COLLECTED BY THE THREE SURVEYS

4:1   Ranking of quality factors.

This section contains findings from statistical analysis, based on the survey which has been done to identify and to list quality factors. However Table 4.1 shows the important level of each quality factor of long distance bus transport service, and it has divided the factors into three groups as "very strong quality attributes", "strong quality attributes" and "comparatively less important quality attributes". Passenger interview survey was conducted to recognize what quality factors should be considered on priority basis, and the quality factors have been ranked by using mean value by using SPSS software.

This survey was done with 8 enumerators at Kurunegala,Kandy and Bastian Mawatha bus stands

Response from passengers and selecting completed survey forms.

Data Collection :03, 04 December 2011				
Number of interviewed passengers	Number of passengers rejected to answer	Number of passengers participated to answer	Number of uncompleted survey forms	Number of completed survey forms
644	36	608	21	587

Only 500 of completed survey forms were selected to make the analysis.

Table 4.1: Ranking of quality attributes of long distance bus service in Sri Lanka

Quality Factor	Important level to the quality of service (Mean Value)									
	All service types	Rank	Normal service	Rank	Semi Luxury	Rank	Luxury	Rank	Super Luxury	Rank
Loading level of buses	**0.97**	**1**	0.97	1	0.99	1	0.97	1	0.91	**3**
Safety when traveling by buses	**0.95**	**2**	0.95	2	0.96	2	0.94	2	0.95	**2**
Reliability of bus that come on scheduled time	**0.91**	**3**	0.91	3	0.89	4	0.92	4	0.99	**1**
Service Frequency	**0.90**	4	0.89	4	0.92	3	0.93	3	0.95	**2**
Behavior of bus crews	**0.80**	5	0.81	5	0.74	5	0.81	5	0.80	**4**
Cost affordability (Reasonable Bus fare)	**0.65**	**6**	0.67	6	0.59	6	0.64	7	0.55	**7**
Environmental protection (operating environmental friendly buses)	0.54	8	0.52	9	0.52	9	0.61	8	0.70	**5**
Physical conditions of bus terminals and bus halts	0.37	13	0.37	13	0.38	11	0.36	12	0.40	**9**
Cleanliness of buses	0.62	7	0.57	8	0.59	7	0.75	6	0.65	**6**
Availability of Bus Terminals and Bus Halts	0.38	12	0.39	12	0.35	12	0.35	13	0.45	**8**
Refreshment Places to have facilities	0.48	10	0.46	11	0.56	8	0.51	9	0.45	**8**
Availability of service information	0.50	9	0.61	7	0.27	13	0.37	11	0.20	**11**
Availability of information regarding bus service	0.46	11	0.47	10	0.48	10	0.45	10	0.03	**10**

The above Table 4:1 shows that what quality attributes should be considered, and how priority should be given on each quality attribute. The most important quality attribute of the long distance private bus service in Sri Lanka is "loading level of buses", and policies of new franchising system should mostly address it, and the results of this survey provides a good path to focus quality of the service with practical environment of the long distance bus industry of the country. But it doesn't mean that less important quality attributes are not important for a quality bus service, and this survey does only ranking of quality factors to do the study. This survey has pointed out that important level of quality factors and Figure 4.1 shows how they are behave with passenger's opinion.
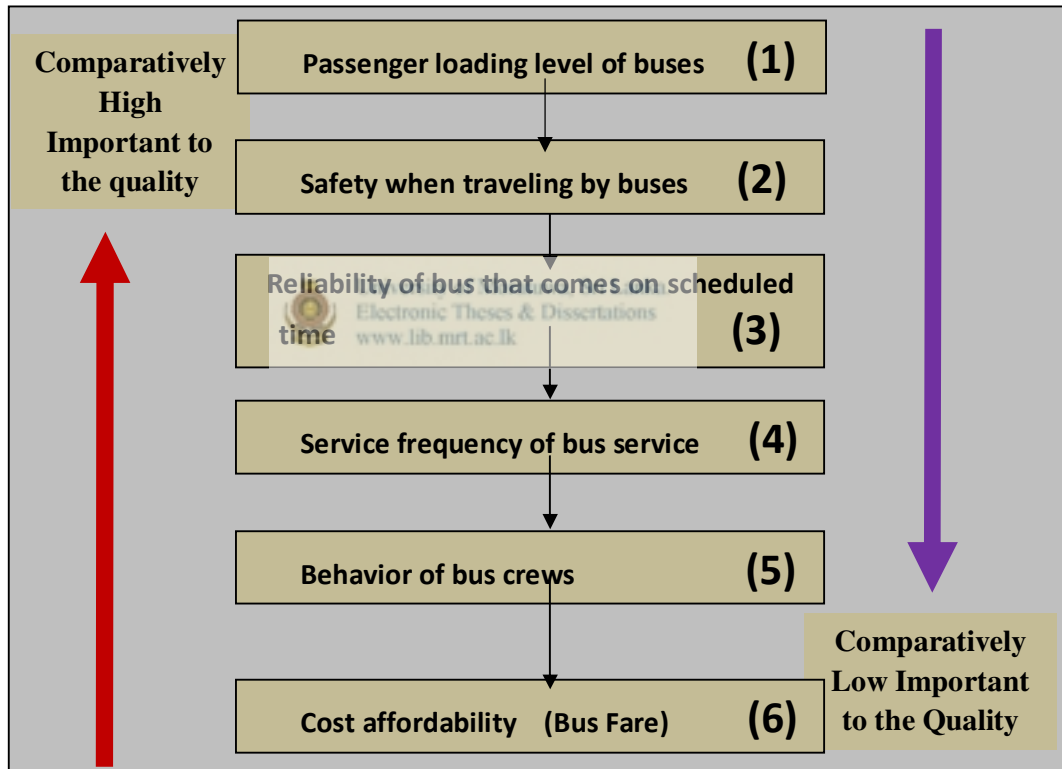

Figure 4.1: Influence pattern of quality factors based on passengers' expectations (for all types of services)

The first service quality attribute that is highly related to the overall quality of the service is loading level of buses. This situation shows that the passenger prefers to travel with comfort environment. Usually exceeding of load factor of 01 is making uncomfortable for the passenger, and it causes to increase stress level and to reduce ventilation to inside the bus. Overcrowded bus is perceived as uncomfortable, and the passenger expects to enjoy their travel experience as comfortable as using his own vehicle. But in our country competition on the road among bus operators has led to the industry to get more and more passengers to the ongoing buses without considering comfort level of buses. However this situation shows that the franchising system which is going to be proposed should mainly consider to control unacceptable loading level of buses, and it should be able to tackle this situation properly.

The second service quality attribute that is related to overall quality is safety when traveling by buses, and the existing competition on the road among bus operators has created very dangerous situations which have caused to meet accidents on the road when operating buses targeting maximum number of passengers. Under this situation passengers of the country have a fear to travel by buses due to their feeling of unsafe when traveling. Passengers think that most of bus drivers are low skilled young men who involved in the job without having proper training to drive passenger transport vehicles. On the other hand feeling unsafe while traveling at night and waiting for buses should also be considered in our country. Security at transit stops and bus terminals are also very important for passengers, and they may feel more comfortable when passengers are around. The proposing franchising system should consider these situations broadly.

The third service quality attribute that is related to overall quality is reliability of bus that comes on scheduled time. This shows that passengers of Sri Lanka consider the ability to perform the promised service dependably and accurately, and they pay attention on-time performance and regularity of headways between successive operating buses. But reliability depends on factors like traffic conditions of the country, vehicle and maintenance quality, vehicle and staff availability, schedule achievability, operation control strategies and etc. Under this situation these broad areas have to be considered when proposing a suitable franchising system.

The fourth service quality attribute that is related to overall quality is service frequency of bus service, and this shows that passengers need bus service when and

where they need to have the service. The fifth service quality attribute that is related to overall quality is behavior of bus crews**,** and passengers in Sri Lanka need to have courteous bus crews specially bus drivers, conductors and time keepers who work at bus terminals in the country. This situation printout that the new franchising system should be able to develop attitude of bus crews towards a quality bus service. The sixth service quality attribute that is related to overall quality is cost affordability**.** Although passengers of Sri Lanka consider bus fare, they have not given the first priory for it. However this situation shows that the new franchising system   should address to make cost affordability to save passengers who have low income level too.

4.1.1   Important level of quality factors regarding different service types.

As shown in Table 4.1, important level of quality factors for normal and semi luxury bus users are somewhat same. These four types of service users consider that loading level, safety, reliability, service frequency and behavior of bus crews are as very important quality factors, and further more loading level could be recognized as the most powerful and important factor that is able to make the highest influence for normal, semi luxury and luxury bus services. But the most powerful factor which is able to make the highest influence for super luxury bus service, is reliability, and it is extremely very important (See the Figure 4.2) to super luxury bus users, and they consider that availability of bus terminals, refreshment places, service information and availability of information , are as somewhat important quality factors. On the other hand super luxury bus users have recognized environmental protection as nearly very important factor ,and other service users have consider it as an important quality factor .Cost affordability has not been a very important quality factor , and it has appeared as an important factor.
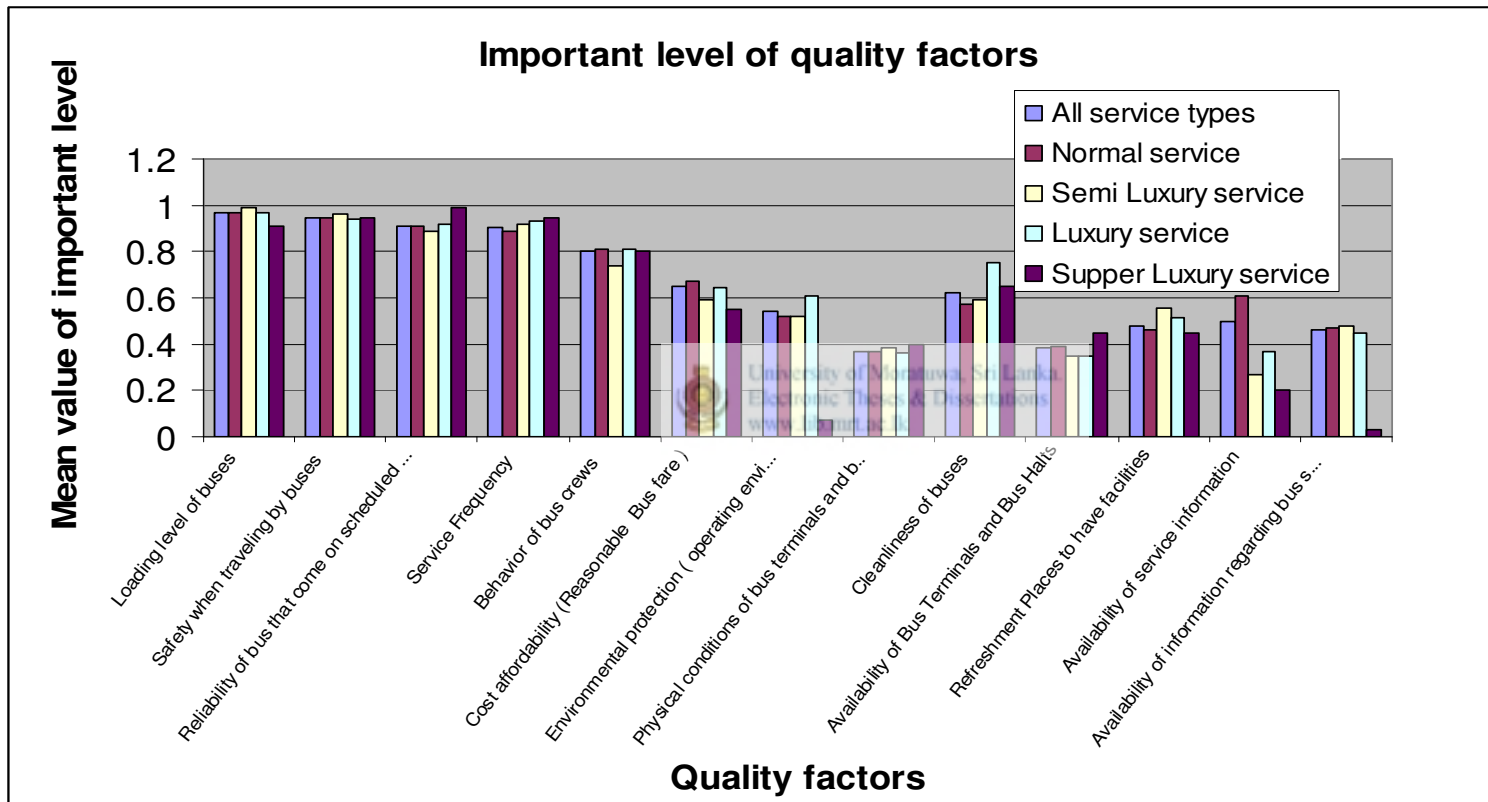
Figure 4.2: Important level of quality factors regarding each type of bus service (normal, semi luxury, luxury, super luxury).

4:2   Experts' opinions on effectiveness of each franchising model to improve behavior of five selected quality factors, and six of existing problems of the regulator

These two surveys were done with 06 enumerators, and 16 transport sector experts were interviewed, and it has taken approximately two hours to get opinions from one expert for the two surveys.

Limitations of selecting transport sector experts.

Transport sector experts (especially public transport sector) were selected by considering the following criteria in order to get correct information as much as possible.

- Master degree level educational qualifications with 2 years transport sector experience, and holding grade 01 (Director) staff level position.

- Master degree level educational qualifications with 5 years transport sector experience and holding executive level position if the transport sector experience is less than 15 years.

- First degree educational qualification with 10 years experience in the transport sector if no master level degree.

- Advanced level educational qualification with 20 years experience in the transport sector.

According to the above criteria 15 of experts were selected as follows.

Institute	Number of selected experts (Transport sector)
National Transport Commission	10
Road Passenger Transport Authorities	03
Sri Lanka Transport Board	02
Total	**15**

Justification of selecting 10 of the 15 experts from a single organization.

In accordance with the above criterion which was considered to select 15 experts, there was a limitation when selecting 10 of the 15 experts from a single organization. Although 10 experts have been selected from the National Transport Commission, it bias data doesn't make due to higher educational qualifications and experience of them regarding public transport sector. Usually well educated and experienced experts recognize their social responsibility properly, when participating this type of surveys. On the other hand there are 05 of the 15 experts from other two institutes where have entirely involved in public bus transport sector in the country. Under this situation it has not been an unacceptable effect on data of these two surveys when selecting 10 of the 15 experts from the National Transport Commission. Furthermore the NTC Officers have more experience on public transport management models than the others who are involving in the transport sector. Under this situation selecting 10 of the 15 experts could be justified when considering awareness and experience of the 10 experts on franchising of bus services in the country.

Response of experts.

Usually it was difficult to contact these experts, and they were very busy in any work related to their profession. But all the experts who were interviewed have responded with great care and enthusiasm in order to drive the survey on correct direction. The experts have provided additional details on regulatory structure of public bus transport sector in Sri Lanka. The considerable situation was that the experts strongly described that as the main regulatory body, if the NTC is not able to play its role independently, any type of franchising system may not be successful. Under this situation the experts have given their opinion for these two surveys, based on the assumption on the NTC is upgraded and independent regulatory body where is able to drive franchisees on successful correct path.

Although it has planned to get opinion from 15 of experts, it had to find one more expert because one of selected expert rejected to give his opinion for these two surveys .But this expert reviewed which features should be there when proposing a suitable franchising system, and what are the policies should be adopted to the new franchising system.

Reviewing results of the two surveys (surveys to get experts' opinions)

Mean value is used to recognize effectiveness level of each model. Mean values regarding effectiveness level of each model are calculated by using marked effectiveness level on the survey forms by 15 experts. According to the given rates (given rates for effectiveness level), Effectiveness level of each selected model to solve each selected problem of the passenger and the regulator are varying between "01" and "0" .When the mean value is moving towards "01", it means that the selected model is more effective, and the mean value is closer to "0", it shows that effectiveness level of the model is less effective. Under this situation mean value regarding effectiveness level of each model could be measured as follows.

Effectiveness level to solve problems of the passenger and the regulator	Mean Value regarding effectiveness level
Not effective	Between "0" and "0.24"
Somewhat effective	Between "0.25" and "0.49"
Effective	Between "0.50" and "0.74"
Very effective	Between "0.75" and "0.99"
Extremely very effective	"01"

Based on this method, effectiveness level of each management model to improve behavior of selected quality factors could be shown as Table 4.2.

Table 4.2: Effectiveness level of each management model to improve behavior of quality factors.

Public transport management models	Mean value regarding effectiveness level to improve behavior of quality factors				
	Acceptable loading level	Safety when traveling by bus	Reliability of bus service	Service frequency of bus service	Behavior of bus crews
Management contract between the regulator and the company	0.35	0.33	0.33	0.36	0.45
Negotiated contract between the regulator and the operator	0.43	0.43	0.43	0.40	0.45
Term Limited licenses for operating buses	0.40	0.36	0.36	0.38	0.43
Net Cost Contract between the regulator and the operator	0.40	0.41	0.41	0.41	0.41
Creating Bus Operating Companies	0.53	0.56	0.56	0.56	0.61

Table 4.2 shows that creating omnibus operating companies has been the most effective management model to improve behavior of the selected five quality factors. Mean values of effective levels of creating omnibus operating companies to behave quality factors, are varying between 0.53 and 0.61, and this value reviews that creating omnibus operating companies is an effective market model, and it doesn't mean that it is very effective or extremely very effective. But this management model has been the best option among the others to behave quality factors of long distance private bus services in Sri Lanka. Effectiveness levels of other options to improve behavior of quality factors are varying between 0.33 and 0.45, and this situation shows that the other options are also somewhat effective.

Suggestions of the experts are very important, and majority of them explained that recruiting of well educated and trained staff is a basic requirement to the successfulness of creating omnibus operating companies. On the other hand managerial and technical skills of the management staff of omnibus operating companies should also be improved for a sustainable franchising system.

It is noteworthy that the experts very strongly explained that all these five models are better than the existing individual bus operating system, and effectiveness of each model to improve the quality of the service will definitely depend on strengthen and independency of the National Transport commission. If the NTC will fail to get strengthen itself with managerial skills, global knowledge on public transport services, monitoring and performance measures of the industry, it will be declined seriously by making poor institutional framework.

Table 4.3: Effectiveness level of each management model to solve regulators' problems

Public transport management models	Mean value of effectiveness level to solve regulators' problems					
	Efficient competition	Efficient administration framework	Responsibility for bus service	Minimize unnecessary political intervention	Minimizing illegal bus operations	Upgrade social level of bus operators
Management contract between the regulator and the	0.41	0.46	0.45	.045	0.43	0.43
Negotiated contract between the regulator and the operator	0.46	0.45	0.48	0.45	0.41	0.46
Term Limited licenses for operating buses	0.41	0.40	0.40	.040	0.38	0.40
Net Cost Contract between the regulator and the operator	0.38	0.36	0.38	0.36	0.40	0.36
Creating Bus Operating Companies	**0.56**	**0.58**	**0.55**	**0.61**	**0.60**	**0.63**

Table 4.3 shows that the most effective management model is creating omnibus operating companies in order to solve existing problems of the regulator. This management model could be recognized as the model which is comparatively effective for solving existing problems. Mean values of effectiveness level of creating omnibus operating companies, are varying between 0.55 and 0.63, and this data doesn't show that creating omnibus operating companies is very effective or extremely very effective, and it means that this management model is an effective one among the others. On the other hand experts explained that this market model has to be improved by making proper legal foundation to increase practicability of it. The other models could hardly be established in the country due to a very little availability of competitive companies where are able to operate buses to satisfy existing passenger demand. Under this circumstance experts have paid their attention on applicable models which could be established without disappointing the existing individual bus operators.

However, creating omnibus operating companies could be recognized as the best alternative among the others, and these companies provide practical and applicable approach to enter into a franchising system. The other models are somewhat effective, but the problem is that they are not applicable for our country due to reasons like neglecting of existing bus operators, and no economic and social environment to establish them. Under this situations creating of omnibus operating companies could be recognized as the most applicable and the most effective franchising system where is able to improve the quality of the service by addressing existing problems of both the passenger and the regulator. On the other hand this system protects the existing bus operators. The suitable franchising system could be shown as Figure 4.1.The NTC creates omnibus operating companies for each route, and initially the Commission provides financial and managerial supports to the company. On the other hand performance of the company is measured by the NTC.
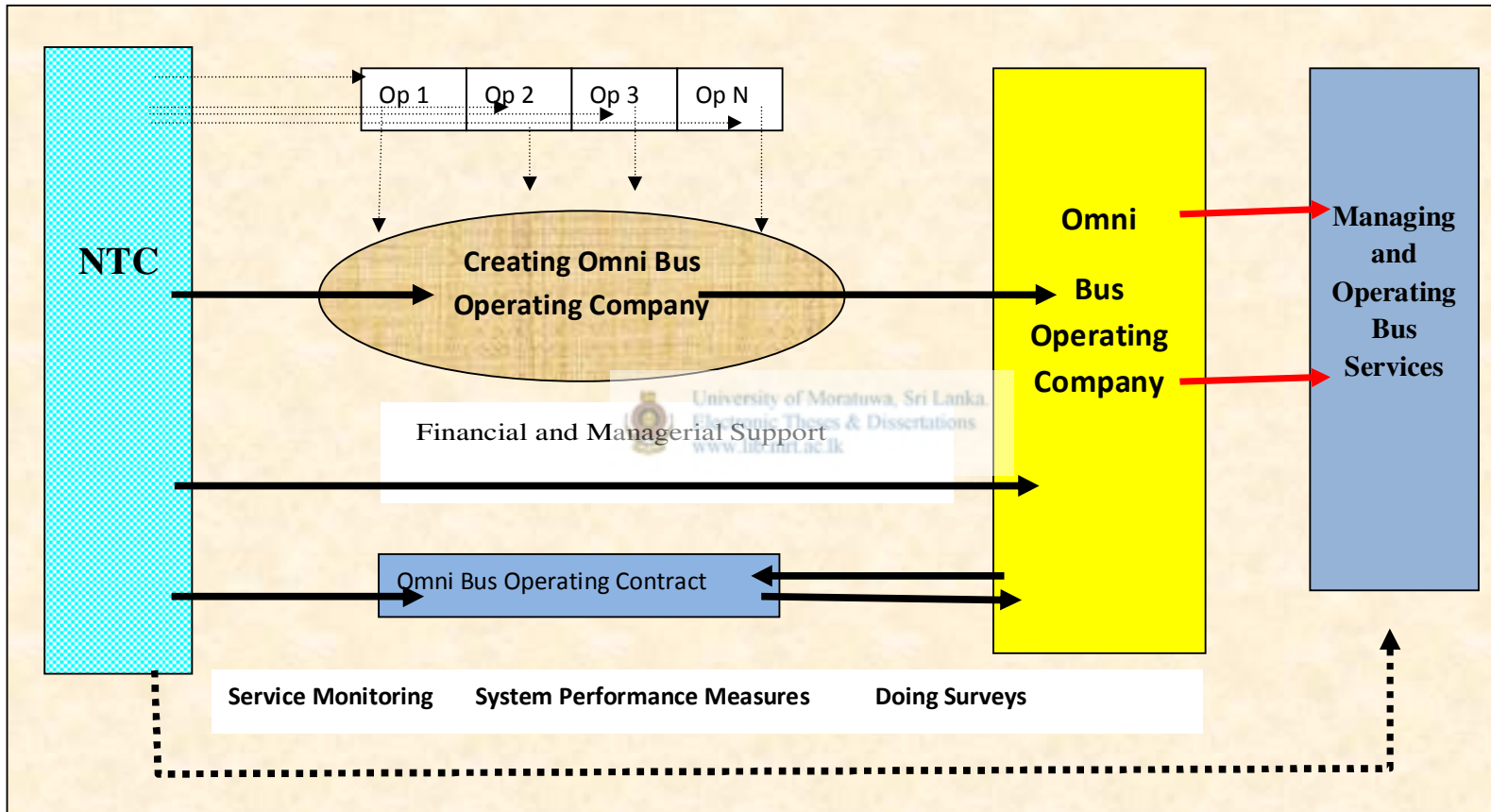
Figure 4.3: Suitable franchising system to improve the quality of the service of long distance bus service.

4:3   Discussions of suggestions of experts' participated to give opinions.

Independency of the National Transport Commission is also a major requirement to make effectiveness of any type of franchising model, and policies should be made independently without making any bias that is caused to break smooth function of the industry. On the other hand political intervention for functions of the NTC should also be taken place when it is necessary to solve problems of stakeholders of public bus transport sector, and decisions should also be made based on analysis of actual data regarding demand and supply. The experts mainly reviewed that it could hardly discuss on effectiveness of each franchising model without considering independency and strengthen of the NTC, and effectiveness is very dependable situation. However based on these situations summarizing of experts' suggestions creates a good path for an applicable franchising system.

The experts mainly consider the social, economic, cultural and industrial situations of Sri Lanka, and they have paid their attention on availability of bus operating companies presently, and it is clear that it is hardly found bus operating companies in our country .It should be mentioned that discussions with experts was mainly done on suitable franchising system and effectiveness of each model to Sri Lanka..

The experts reviewed that if the NTC is not an independent and strengthen regulatory body, even one of these franchising models could not be established, and it was hardy understood effectiveness of each model to address the problems of the passenger and the regulator. Under this situation the above assumption on the NTC is independent, has to be made to precede the study.

It is hardly found transport companies (in Sri Lanka) where are able to supply bus transport facilities on a bus corridor or a bus route. Under this situation the National Transport Commission has to create omnibus Operating Companies by providing financial, managerial, institutional and entrepreneurial resources in order to establish a suitable franchising system for long distance bus service. Already the NTC is playing this role, and continuing of this process is needed for the franchising system, or otherwise it will have to find out possible ways of seeking alternatives to find bus operating companies. Under this situation financial cost of the National Transport Commission for creating omnibus operating companies could easily be justified with comparing long term social and economic benefits which will be created by the new

franchising system. But in developed countries have competitive transport companies to be selected to give permission to manage bus operations. Under this condition the existing situation where the regulator formalizing omnibus operating companies may be the best solution to convert the "competition on the road" into "competition for the market". Otherwise the regulator will have to invite to foreign transport companies to manage long distance bus operations in Sri Lanka.

Inefficient competition between government sector (SLTB bus operations) and private sector bus operations has to be stopped. The SLTB also plays a good role in operating buses as long distance and short distance services, and this situation is also considered, and coordinated time table system between private operators and SLTB operations will have to be continued in order to minimize conflict between the two parties. On the other hand this competition could be used to improve the quality of the service by making a good path for an efficient and effective competition between the government bus operator and the private sector operators.

Lack of experience of bus operators on "competition for the market" by proving quality of the service may be imaged as a problem. It is hardly found bus operators who have idea of maximizing profits by making "competition for the market" with quality service, and the majority of them try to gain benefits by making unacceptable behavior. Attitude of individual bus operators have to be changed because they always try to pick up more and more passengers and collecting fares without considering safety, speed of buses, comfort of the bus, and travel time of the journey.

Although long distance bus operations are regulated by the National Transport Commission, administration of long distance bus operations at bus terminals is made by bus crews of Road Passenger Transport Authorities of Sri Lanka. Issuing of log sheets, setting off buses by following time tables, giving permission to enter the terminal and etc., are done by bus crews of Road Passenger Transport Authorities. Under this situation the NTC has to create suitable and efficient relationships between bus companies and bus crews of Road Passenger Transport Authorities. This situation gives a hint that Road Passenger Transport Authorities have a shadow and hidden power to control long distance bus services, and as the regulator, the National

Transport Commission has only paid a very little attention on this problem, and this has been a serious issue to the long distance bus services.

The considerable situation of this franchising model is that the regulator creates companies, and it bears the   risk of spending government funds, and on the other hand gathering of route–based individual bus operators into a one bus operating company is also done by the regulator. Under this situation the regulator has to play very important role.

The most sensitive six of quality factors were selected by using the results of analysis of the survey done to rank quality factors. These quality factors were ranked based on the important level of them to the passenger. Furthermore the highest sensitive six quality factors were selected to recognize the most effective management model to behave these factors properly. Although creating omnibus operating companies has been the most effective one comparatively, the experts explained that these quality factors may not behave properly even within the franchising system. Under this situation the experts explained possibility to behave the factors improperly, and further the experts expressed their opinion on suitable policies and activities should be adapted to the franchising system in order to behave these factors properly.

The following problems for the passenger and the regulator were selected from the introduction chapter (1.2 Background of bus transport industry in Sri Lanka , 1.4 Long distance bus service in Sri Lanka) ,and they have been case to reduce quality of the service . According to the experts' opinion, if suitable policies and activities are not adopted, these issues may be continued even within the franchising system. Further the experts explained policies and activities which should be taken to overcome these problems. Table 4.4, 4.5, 4.6 show problems and suitable policies and activities regarding the passenger, and Table 4.7, 4.8, 4.9 describe problems and suitable policies and activities regarding the regulator.

Table 4.4:   Continue of problems and suitable policies should be adapted.

Selected Existing Problems of Individual Bus Operating System	Possibility to remain the problem even within the proposed franchising system	Policies and activities which should be taken by the National Transport Commission to overcome the problem
Unacceptable loading level of bus services.	The company may operate a minimum number of buses to reduce operating cost, and they may not consider overloading, and they may pick up more and more passengers to increase its revenue.	Establishing of strong monitoring system, and making awareness of bus companies on how to reduce cost and on how to increase revenue without exploiting passengers.
Operating buses without considering safety of passengers.	Reckless driving may be existed, and drivers' quality may not be improved, and attitude of bus drivers may not be driven towards safe driving.	Determination of minimum educational qualifications for bus drivers on the agreement, and providing special training for them. Improving attitude of drivers by making awareness of drivers on different between responsibility of passenger transport and goods transport. Making policies to upgrade quality of drivers towards professional driving.

Table 4.5: Continue of problems and suitable policies should be adapted cont…

Selected Existing Problems of Individual Bus Operating System.	Possibility to remain the problem even within the proposed franchising system.	Policies and activities which should be taken by the National Transport Commission to overcome the problem.
Failing to maintain required service frequency.	The company may not be encouraged to operate buses in times where passenger demand is low, and late night, and early morning bus services due to maintaining a higher per km income. The company may use minimum number of buses to facilitate passengers by increasing load factor, and this will result longer headways, and the passenger's waiting time may be increased.	It should recognized actual passenger demand during the day and optimal level of supply should be arranged .Encouraging of companies to use small buses in times where demand is low. Making strong monitoring system and dispatching frequency should be determined by the commission.
Poor reliability of service.	The company may not consider vehicle standard and quality of them, and regularity of headways. The company may not make arrangement to save passenger when the service is broken down due to faults of them.	Determination of vehicle standard, and providing enough infrastructure, and strong monitoring system. It should improve good information system to facilitate passengers to arrange their trips.

Table 4.6:   Continue of problems and suitable policies should be adapted cont…

Selected Existing Problems of Individual Bus Operating System.	Possibility to remain the problem even within the proposed franchising system.	Policies and activities which should be taken by the National Transport Commission to overcome the problem.
Undisciplined bus crews specially conductors and drivers.	The existing conductors and drivers have to be entered to the company, and they may continue their undisciplined behavior.	The conductors and drivers should be trained, and frequent training programs are necessary to change their attitude towards quality transit services. Proper recruitment policy should be made for new drivers and conductors. Keeping conductors and drivers on permanent basis, and providing EPF, ETF for them, increasing their social recognition.
Price policy (fare) may not be used to make efficient transit system.	The company may not consider fare policy to attract different social segment	The NTC should create a suitable fare policy to attract different social segment for different layers of the society. Price discrimination as different prices for different services (normal, semi luxury, luxury, supper luxury, city liner and etc.).

Experts have clearly mentioned that existing problems for the regulator may be remained even the situation where within any type of franchising system, and bus operations are managed by omnibus operating companies, and the National Transport Commission has to find on possible ways of making suitable policies to overcome these issues as Table 4.7 , 4.8 and 4.9 .

Table 4.7: Continue of problems and suitable policies should be adapted.

Selected Existing Problems for the regulator.	Possibility to remain the problem even within the proposed franchising system.	Policies and activities which should be taken by the National Transport Commission to overcome the problem.
Inefficient competition between individual operators.	Unhealthy competition may be existed because one company operates buses on one route, and this may lead to a monopoly for the route.	Making policies to make healthy competition by increasing completion with the SLTB. The existing share of the time table (Private bus operations - 60%, SLTB bus operations 40%) must be continued by encouraging both SLTB and private company. Rotation time table should also be continued to distribute benefits uniformly. These policies will lead companies to make competition by minimizing cost and by improving service quality.
Difficult for administrating bus operations.	Ownership share of the bus owners of the company depends on ownership of number of passenger transport permits, and bus owners who have large number of buses may try to grab other buses of the route ,and they may control the company against the NTC by violating rules ,regulations and neglecting conditions of the operating contract.	Making a strong and strict regulation method to control powerful bus owners, and giving incentives to protect less powerful bus owners, and getting higher amount payments to transfer ownership of passenger transport permits.

Table 4.8: Continue of problems and suitable policies should be adapted cont…

Selected Existing Problems for the regulator.	Possibility to remain the problem even within the proposed franchising system.	Policies and activities which should be taken by the National Transport Commission to overcome the problem.
No responsible when it has negative effect for bus services and to the passenger.	The company may not appear as the responsible body at the situations where broken down the service like buses are operating against the time table, slow speed and high speed, meting accidents and etc.	Responsibilities of the company should properly be described. Introducing ongoing monitoring system such as GPS. Providing good infrastructure facilities such as exclusive lane , signal priority ,introducing good conditioned buses for bus operations. Making integration system among institutes (RDA,CTB,NTC, Police) where are responsible for land transport.
Unnecessary Political Intervention	In the context of our country majority of businessman has involved with political activities to get powerful background for their business. They may make pressure to control policies of the company and the NTC also.	The NTC should play its role independently, and it should make more clear understanding of social responsibility of public transit, and showing macro level benefits which are made for the society, and explaining the benefits of sustainability of public transit. Taking determination based on actual data regarding bus transit.

Table 4.9: Continue of problems and suitable policies should be adapted cont…

Selected Existing Problems for the regulator.	Possibility to remain the problem even within the proposed franchising system.	Policies and activities which should be taken by the National Transport Commission to overcome the problem.
Illegal bus operations.	Illegal bus operations may be existed.	Making awareness of passengers on recognition of illegal buses, dangerous situations (no insurance policy, higher risk level, no responsible for the journey and etc.) when traveling by illegal buses.
Fail to upgrade social level of bus owners.	Bus owners may not change their attitude towards formal and well organized businesses.	Changing attitude of bus owners towards professional business knowledge, and making awareness of them on benefits in addition other than collecting daily income from the bus.

CHAPTER 05

CONCLUSIONS AND RECOMMONDATIONS

Conclusions

The most effective public transport management model to improve the quality of long distance bus passenger transport service in Sri Lanka is creating omnibus operating companies. But it doesn't mean that this model is very effective or extremely very effective, and it only means that this model is more effective than the others. The proposed franchising model may not be able to improve quality of the service if the NTC does not make suitable policies, rules and regulations to overcome problems .Strong monitoring and performance measuring systems are mandatory to gain expected benefits from the new franchising system. The NTC should be an independent and strong regulatory body, and otherwise the existing problems of stakeholders will be existed even within the franchising system.

Although creating omnibus operating companies has been the best option in order to improve the quality of the service, this option will not be a feasible strategy when a poor regulatory body has been established. The regulator must play its role without making bias policies which cause to break smooth functions of bus industry. Decisions must be made based on actual data, and political intervention should be taken when it is necessary.

The most important factor on total quality of (all service types as a one) the service of bus transport service is passenger loading level of the buses, and the second, third and fourth factors are safety when traveling, reliability of service and service frequency, respectively. But important level of quality factors is different on each service type.

Recommendation

Creating of omnibus operating companies should be done under the regulation of independent, strong, skilled and very capable regulatory body. If the regulator is weak, it will not be a feasible option to improve the quality of the service of long distance bus service in Sri Lanka.

This study has made a path to recognize suitable franchising system to improve the quality of the service, and another study could be done on strategies to improve applicability of selected franchising system (creating omnibus management companies).

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