ALI EL ZEIN

STUDY OF SERVICE QUALITY AND CUSTOMER SATISFACTION OF USING PUBLIC TRANSPORT IN LEBANON

NEU 2019

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A THESIS SUBMITTED TO THE GRADUATE SCHOOL OF APPLIED SCIENCES OF NEAR EAST UNIVERSITY

By
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Approval of Director of Graduate School of Applied Sciences

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I hereby declare that all information in this document has been obtained and presented by academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I had fully cited and referenced all material and results that are not original to this work.

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To my parents…

ABSTRACT

Lebanon is one of few countries in the world with a non-organized public transportation sector, were public vehicles move freely without any regulations or planning. The increase of country population causes an increase in travel demands. Now a day Lebanon is facing an explosive growth in private vehicles ownership turning its roads to a huge parking area. Public transportation is considered a major solution to these problems. The aim of this study is to verify the quality of service infrastructure in the public transport of Lebanese buses in order to give priority to improving quality in the future. In this study 384 questionnaires were distributed in Greater Beirut area (GBA), Saida and Tripoli, as they are the most crowded population area in Lebanon and the data were analyzed by Statistical packages for science scientists (SPSS) software. The study found that overall commuter's satisfaction is impacted by service quality factors. The results showed a high percentage of "not satisfying" 59.9% for "schedule and timetable" factor, 49.2% for "attractive and neat office" and 46.6% for "feeling safe during a transaction with staff". While the high percentage of extremely satisfied was around 15%. The results of correlation analysis recommend 5 factors that have a strong relationship with each other which are "arriving on time", "scheduled timetable", "feel safe", "bus comfort" and "maintenance".

Keyword: Lebanon; public bus transport; service quality; survey; bus service

ÖZET

Lübnan, toplu taşımacılık sektöründe planlama, düzenleme ve yönetme alanında dünyada geri kalmış ülkeler arasında gözlemlenmektedir. Planlama ve organizasyon alanındaki noksanlar bireylerin şahsi araç kullanımı tercih etmesine sebep olup, artan nüfüs ve araç sayısı ile birlikte ülkede caddeler devasa park alanlarına dönüşmüştür. Otobüsle toplu taşımacılık ise mevcut problemin çözümü için etkili bir yöntem olarak görülmektedir. Yapılan çalışmada amaç, mevcut toplu taşımacılık altyapısı ve servis kalitesini değerlendirmek ve ülkede toplu taşımacılık potansiyelinin gelişmesine ışık tutmaktır. Araştırma kapsamında, nüfüs yoğunluğu yüksek olan bölgeler ele alınıp, Beyrut (GBA), Saida ve Tripoli bölglerinde toplam 384 anket gerçekleştirilmiştir. Anket sonucunda elde edilen veriler SPSS yazılımı kullanılarak analiz edilmiştir. Çalışmada, hizmet kalitesinin toplu taşıma kullanıcılarının değerlendirmesinde etkili bir faktör olduğu gözlemlenmiştir. Analiz sonuçlarına göre, sırası ile, %59.9 güzergah çizelgesi ve sefer saatleri, %49,2 bilet ofislerinin cezbediciliği ve %46,6 toplu taşıma personeli ile iletişimde yaşanan güvensizlik gibi faktörler başlıca toplu taşıma kullanıcılarının memnun kalmadığı hizmetler olarak değerlendirilmiştir. Buna karşılık, %15 yolcuların toplu taşımada sunulan hizmetlerden tatminkar kalmış olduğu gözlemi analiz sonuçlarında ortaya çıkmıştır. Korelasyon analizi sonucunda ise etken faktorler içerisinde güzergah ve çizelge planlaması, sefer saatleri planlaması ve planlamaya bağlı kalınması, yolcu güvenliği, toplu taşıma araçlarının bakımlı durumda olması ve yüksek seviye yolcu komforu sağlaması faktorleri arasında güçlü korelasyon bulunmuştur.

Anahtar kelimeler: Lübnan; toplu taşıma; hizmet kalitesi; anket; otobüs servisi

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LIST OF ABBREVIATIONS

BTR: Bus Rapid Transit

RPTA: Railway and Public Transport Authority

GBA: Grater Beirut Area

SPSS: Statistical packages for science scientists

LCC: Lebanese Community Corporation

CSI: Customer Satisfaction Indexes

SQI: Service Quality Records

CHAPTER 1
INTRODUCTİON

1.1 Background

The transportation system has high importance to all of society. Transportation refers to a vehicle carrying some person or something from one place to another place, mostly over long distances than on the off chance that on foot. Development has presented a variety of vehicles, counting land, water, and air. In any case, through the innovation rapidly advancement division vehicles have gotten to be a requirement for connecting people from one place to another.

However, through the innovation quickly advancement division vehicles have gotten to be a need for connecting individuals from one destination to another. However, the expanding number of vehicles from time to time cause the number of vehicles on the street is increasing. This circumstance has caused a traffic distraction and street accidents that cause discomfort to the commuters. In this way, the existence of the public transportation system is an alternative to the situation that existed. The public transport system in place has been a positive and negative effect on the commuters, the economy, and the country. In any case, the accessibility of public transportation can decrease traffic error. Public transport sector contains all vehicles mode of which travelers do not use their own methods from travel to transportation.

Public transportation sector includes shared taxi and buses. A lot of functions were performed to passengers while using the public bus transport system, due to the opportunity it offers to the traveler to move from one area to another area easily. Public bus transport service plays out plenty of capacities for commuters. It improves the personal satisfaction in societies on condition that it provides safe, proficient and economical transport services. Also, the cost viability and accessibility of public bus transport services are basic to ensuring a versatile economy and enhancing portability. Similarly, associations gain access to public transport services to the extent that decreases traffic jam in streets, saves money and creates and supports jobs within communities.

1.2 Lebanese Public Transportation Overview

The capital of Lebanon “Beirut” once was titled "the pearl of the Middle East", after 15-year of civil war it was transformed into a genuine no-man’s-land. Going to an inactive railway system and decreasing the tramlines that were fully operated until 1994. Lebanese land transportation was minimized to a vehicle fleet consists of private and shared cars and a small number of buses that are operated by RPTA, these buses supported by the Lebanese government, private own buses operated by individuals or LCC (Lebanese Community Corporation). According to (MoE, 2017) around 1.55 million vehicles were registered in 2007, around 20 years old is the age of approximately 64% of the fleet, 81% of the fleet represents passengers cars. The car ownership is relatively high in the country is roughly about 1 car for every 3 persons. The high dependence on private cars also reduces the average occupancy rate in Beirut 1.7 compared to 1.9 for other means of transport (Danaf, Abou-Zeid, & Kaysi, 2015).

Demand for travel is growing much faster than the country transportation system is able to adapt, in 2007 the daily passenger's trips in GBA (Grater Beirut Area) around 2.8 million daily automobile trips, which are expected to increase in 10 coming years to 5 million (Chalak, et al. 2014). The modal share of automobile trips in GBA (Grater Beirut Area) is for private cars 71 %, taxi and shared taxi 19% and for public and private buses and minibus 10% (Chalak, et al. 2016).

At that point Lebanon needs a realizable and productive transportation system and foundation, to minimize the level of blockage on the street. Since Lebanon, traffic catastrophe has turned into a daily difficulty for commuters. The absence of serious plans by the government to improve public transport has weighed heavily on the Lebanese economy as well.

Figure 1.1 shows how the Lebanese roads network has a week roads network since the majority of roads consists of secondary roads network. Which means roads with a maximum width of 7 m.

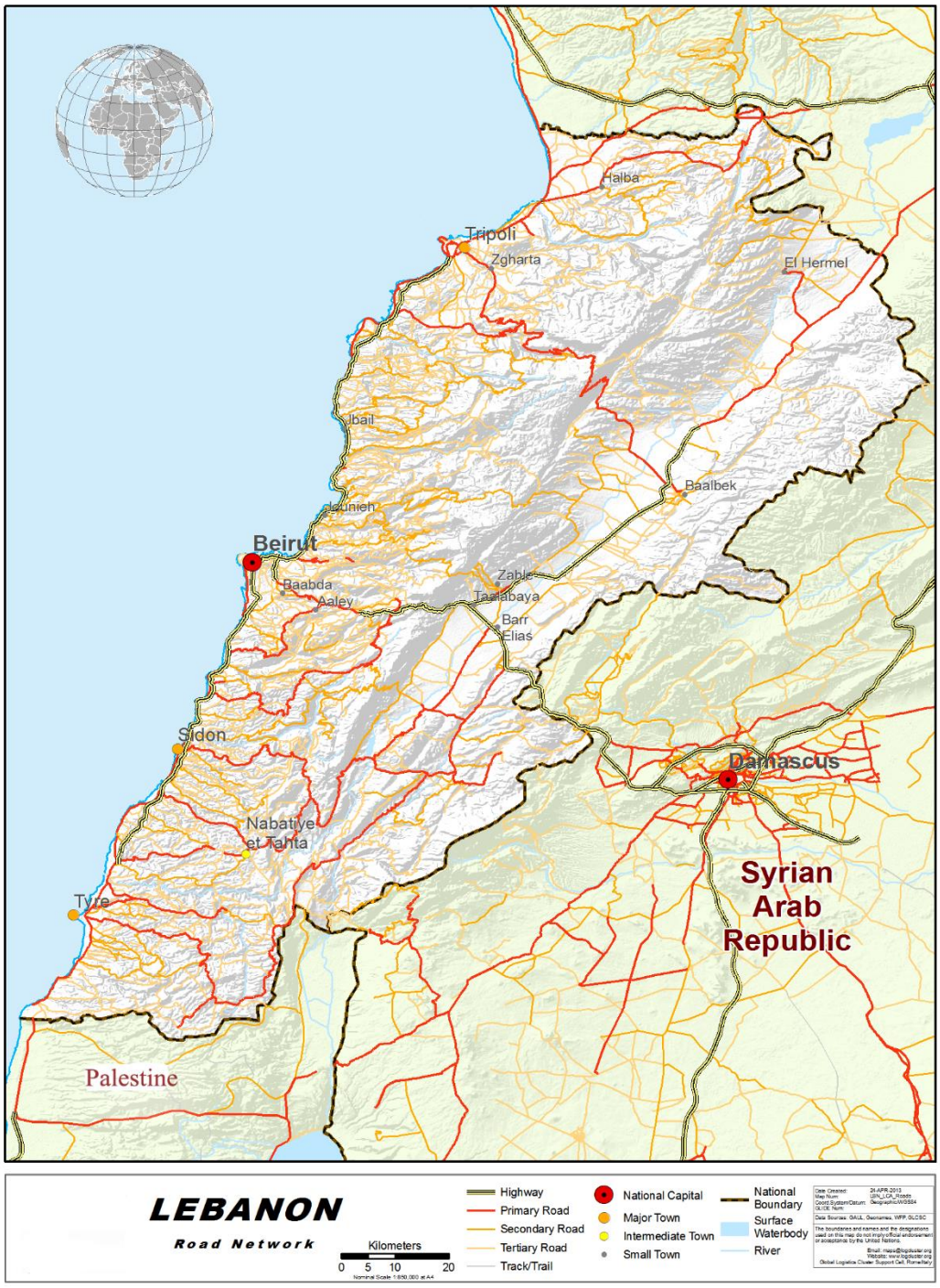

Figure 1.1: Lebanese road network

1.3 Problem Statement

Lebanon is one of few countries within the world that allows public transportation vehicles to move freely within the country without any arrangement or control. As a result to all

that, the Lebanese public transportation sector comes to a basic state that must be modified and organized.

The Lebanese public transportation sector is in a critical situation, and the unsustainable conditions resulted from the simultaneous occurrence of:

1- Increasing the numbers of red plates (taxis and shared taxis from 10650 in 1996 to 47707 in 2011 (MoE, 2017).
2- increasing the number of privately own buses into a triple to reach about 15000 buses in 2011 (MoE, 2017).
3- Creating a new category of public bus vehicles “Minibus” in 1998, and start by issuing 4000 plates (Baaj, 2000).

Over 1.2 million passengers private cars and the huge number of public transportation vehicles in a country whose total population is around 5 million. The use of insufficient road network causes a daily traffic crisis that impacts the Lebanese economy since it increases the transportation cost as well as pollution. Poor transport flows lead to unsafe competition, with implications for service levels, particularly traffic safety.

Moreover, 400,000 passenger enters the Greater Beirut Area (GBA) daily around 65,000 use public transportation (Chalak, et al. 2014)while others using their private cars causing delays at some intersections ranging from 5 to 15 minutes (MoE, 2017). this high percentage of people using private cars is due to the poor and unorganized public transportation sector, due to the absence of regulated schedules or routes. In addition, it's not restricted to one operational body.

Conclusively, the problem discussed in this thesis is how the service quality of Lebanese public transportation affects its commuter’s satisfaction. Also, what constitutes quality service to different travelers?

Figure 1.2: Greater Beirut area with respect to Beirut city Lebanon

1.4 Objectives of Study

The main objective of this study is to better understand the overall customer satisfaction using Lebanese public bus transportation, and this aim will be achieved by conducting the following objectives :

- Assessing and improving quality of public bus transport service is important to address the increasing rate of car ownership.
- To investigate which service quality attributes that have the most influence on customer satisfaction using Lebanese public bus transport.
- Investigate the structure of service quality in Lebanese `s public bus transport in order to make a priority on quality improvements in the future.

1.5 The scope

The scope is to investigate overall customer satisfaction with conventional public bus transport in GBA. Since Lebanon has a close range of public transportation the study will manage the regular public buses transportation sector. The study of regular public buses transport is a sign to improve it since the regular public bus transport is the main bone of the public buses transportation sector in Lebanon.

1.6 Structure of the thesis

The first chapter will contain background to the research area, an overview of Lebanese public transportation conditions, objectives, scope and structure of the master thesis. Then in the second chapter introduce related studies related to customer needs and satisfaction in the public transport area. The third chapter presents methods we chose to work with, respondents, questionnaire, procedure, software and tests to analyze data. The fourth chapter will present demographic and results from statical analysis such as reliability, correlation, frequency and descriptive analysis in global and local measurements. The fifth chapter will present discussion and conclusions from this work, a summary and resomation will be drawn and a study of limitation and prospect for future researchers.

CHAPTER 2
LİTERATURE REVİEW

This chapter will grant an outline of writing that's related to the investigate issue. This chapter will present the concept of client fulfillment and seen benefit quality by open transport clients.

2.1 Introduction

According to Chalak et al. (2014), Public transport in Lebanon is generally regarded as being of a low standard. Due to highly dissatisfy with the quality and levels of public transport (Danaf et al., 2015), because of this, societal needs such as mobility and accessibility remain largely unaddressed. Evidence of poor quality in the public transport sector is provided by the continued high levels of using private vehicles and the low levels of using on government or private-public transportation buses (Danaf et al., 2015), It is frequently suggested that to carry out a strategy such as reducing car ownership and ownership desire are largely reliant on the providing of an excellent public transport system (Luke & Heyns, 2017).

In Lebanon, the quality of public buses transport services is low that most public buses users aim at changing to private car ownership and travel, as soon as they are able to afford it (Chalak et al., 2014). The suggestion is that service quality in public transport requires impressive enhancement in case policies outlined to realize modular shifts from cars to public transport are to be effective.

2.2 Service Quality and Customer Satisfaction

In recent times all organization has progressively come to understand the importance of client satisfaction. It is broadly understood that it is far less expensive to keep existing clients than it is to gain new ones. For numerous organizations in the public sector, client fulfillment will itself be the measure of success.

2.2.1 Customer Satisfaction

According to Sanjay (2016), Client satisfaction measures how well a company's items or services meet or exceed client expectations. These expectations regularly reflect numerous

aspects of the company's business activities including the actual item, service, company, and how the company works within the worldwide environment. Client satisfaction measures are an overall mental assessment that's based on the customer's lifetime of item and service experience.

Satisfaction is characterized as the customer's fulfillment (Korale et al., 2015). It may be a judgment that an item or service feature, or the item or service itself, provide a pleasurable level of consumption-related fulfillment, counting levels of under- or over-fulfillment. Require fulfillment could be a comparative form giving rise to the satisfaction reactions. Any gaps lead to disconfirmation; i.e., Positive disconfirmations increments or keep up satisfaction and negative disconfirmation make a disappointment.

2.2.2 Service Quality

Service quality is an attitude formed by long-term by and large assessment of a firm's execution. Service quality is an extrinsically seen attribution based on the client's involvement around the service that the client seen through the service experience (Zeithaml & Bitner, 2006) Service quality evaluations are formed on judgments of result quality, interaction quality, and physical environment quality. Service quality is one of the key dimensions, which are figured into the consumer's satisfaction judgments.

Quality and satisfaction always have a complex relationship due to a complicated interaction between execution dimension used in satisfaction judgment and those used in quality judgments and due to the contrasts between global judgment and encounter-specific judgment. The quality based on performance has been surrounded as a result from quirky preference and ideal expectation of the customer. So also, satisfaction has been shown up to reply to quality disconfirmations and to other execution dimensions dis confirmations not related to the quality involvement.

Within the service region, in spite of the fact that developed independently, quality and satisfaction share one outstanding feature. Both see satisfaction as a work of expectancy disconfirmation and service quality as work of satisfaction. In proposing a quality impacts satisfaction demonstrate, it is necessary to formally endorse the viewpoint that satisfaction includes quality at the counter-specific level.

Hence, quality is one of several key dimensions which are related to the consumer's satisfaction judgments. Quality is the result of features and characteristics of a product or service that carry on its capacity to satisfy specified and suggested needs. In brief term, product or service features decide quality which at that point satisfies customer needs. Subsequent to this more quick effect, it'll be accepted that satisfaction may reinforce worldwide quality perceptions but as it were indirectly. In this way, quality is hypothesized as one dimension on which satisfaction is based, and satisfaction is one potential impact on worldwide quality perceptions.

2.2.2.1 Measures of the Service Quality

After reviewing plenty of literature it shows a variety of approaches for the estimation of service quality. Different national and worldwide records have been presented that are based on client recognition and desires (Johnson et al., 2001). Another approach is the use of Service Quality Records (SQI), which is based on random utility hypothesis and discrete choice models. SQI's are centered on choice data as supposed to the use of customer judgments evaluations (Eboli & Mazzulla, 2007). Customer Satisfaction Indexes (CSI) measure service quality based on client judgments passed on through a numeric scale (Eboli & Mazzulla, 2009).

The SERVQUAL methodology, created and refined by Parasuraman et al. (1985), has been utilized broadly by analysts to study and measure service quality. The SERVQUAL methodology is apparently the most widely utilized approach over different industries to compare and measure customers service quality desires with their discernment of real service involvement. The SERVQUAL model has been utilized by many researchers and applied in several countries to various uses like businesses, restaurants, retailing, hospitals, education, banking, hospitality and tourism, local government and transport (Saida et al., 2017).

Most of the SERVQUAL research conducted on service quality of transport services has utilized the RATER dimensions of service quality or an adaptation thereof (Ojo et al., 2014)

According to Too & Earl (2010), SERVQUAL is extensively utilized to measure service quality over different industries, the specific settings are distinctive which requires an adjustment of SERVQUAL. They further state that the first SERVQUAL scale should just give a framework that should be adapted to fit the specific service being measured. This can be also supported by Parasuraman et al. (1991), who opined that the SERVQUAL instrument should be refined and reexamined to fit particular contexts.

In spite of the truth that SERVQUAL demonstrate could be an extraordinary estimation for numerous businesses, It was reported by the researchers that this illustrates isn't suitable for some regions (Korale et al., 2015). After a long time on researches on this model by researchers, few of them says that this model is not complete for several applications. (Cronin et al., 2000) they suggested a clear model by considering execution as it calculated to measure service quality. They claim that service quality may be a consumer`s state of mind and the performance of the service is as it was estimated from service quality. Many investigations on service quality relationship with customers satisfaction and buying intention were the main topic of their study, they accept service quality as a sign of customer satisfaction. They suggested a new modern model for service quality who is based on SERVQUAL with regards to form a concept and a measurement tool of service quality which used executions it was estimation for service quality Model called SERVPERF. In this model shown by (Cronin, Brady, & Hult, 2000) in 1992, he continued to measure execution with the same five dimensions reliability, tangibles, empathy assurance and responsiveness for service quality estimations instead of "expectation – perception" contrast. The inquire approximately finding showed up SERVQUAL variables are conflicting, and SERVPERF may be a more correct estimation for advantage quality in comparison with SERVQUAL.

2.2.2.2 Dimensions of Service Quality

According to (Korale, Mandari, & Ray Suh, 2015) the criteria for evaluating service quality is the one explained by the customer. (Parasuraman, Zeithaml , & Berry, 1985) set up 10 service quality measurements that clients utilize to judge the quality of the service advertised in 1984. The ten measurements are not in a general sense autonomous of each other. There could be a couple of cover between the categories. As a result of an

development think about a combination of the 10 unique measurements were decreased into five measurements of quality done by (Cronin, Brady, & Hult, 2000): reliability, responsiveness, assurance (counting competence, kindness, validity, security), tangibles and empathy (including get to, communication and understanding).

According to (Zeithaml & Bitner, 2006), A five dimensions in the business service was found so important. Costumers will use some or all of these dimensions to determine the service quality he is receiving. Researchers also believe that different cultures will impact the relative significance put on the five dimensions. Tangible highlights, such as the personnel's or exhibition's appearance, are tolerably straightforward to assess. However, intangible highlights such as security and understanding clients' needs, maybe uncommonly troublesome for the professional and the client to assess.

- Reliability

  Reliability defined as "the ability to provide a promised service accurately and dependable". Reliability is a major key dimension where customer evaluates between quality he got and the provider granted at the delivery process. (Zeithaml & Bitner, 2006).

- Responsiveness

  Service providers should be active and voluntary to assist their customers and to provide prompt service according to (Zeithaml & Bitner, 2006). The dimension aims to show high flexibility from the service provider in understanding and knowing their client issues and needs. Firms indeed ought to have a capacity to customize services for overseeing with their customers' extraordinary needs.

- Assurance

  According to (Zeithaml & Bitner, 2006) "assurance" is defined as employees kindness, information and the ability to be cooperative. This dimension is made up of four original determinants: security, courtesy, competence, and credibility.

- Empathy

  Managing more facilities for a current client and improves the service capacity through customized or personalized service is the main goal of the dimension Empathy. According to (Parasuraman, Zeithaml , & Berry, 1985) empathy as the caring, individualized thought that the firm gives its clients.

- Tangibles

  According (Korale, Mandari, & Ray Suh, 2015), the appearance of physical facilities, equipment, communication materials, and staff are related to Tangibles. Moreover, as tangibles and visual components of the location will effect will be essential to productivity as well as to in common recognition of the firm and the brand, service companies are likely to use tangibles to move forward their picture and pass on quality service to clients.

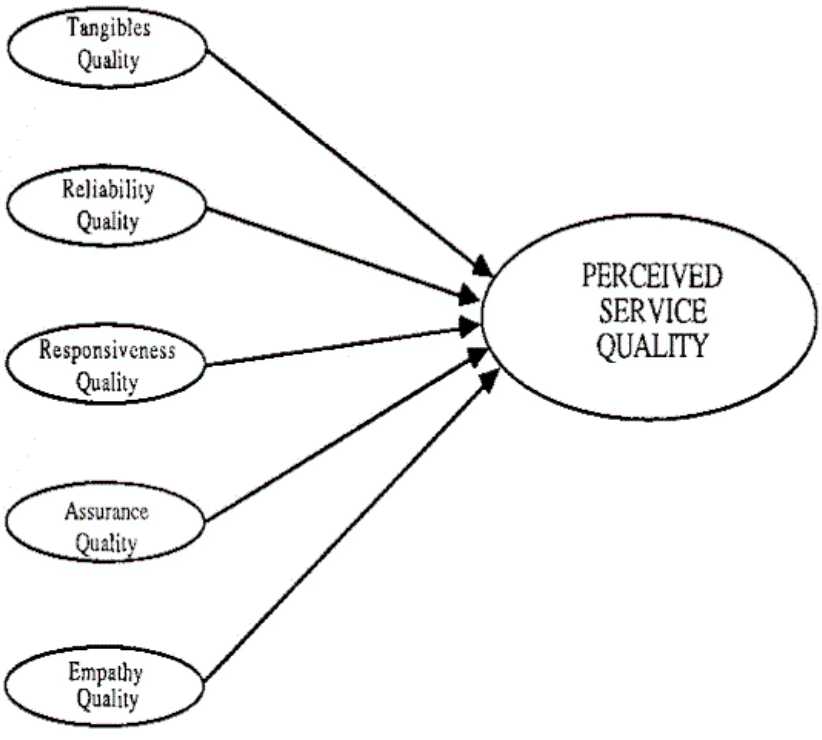

Figure 2.1: The five SERVQUAL dimensions

2.3 The Service in Public Industry

The type and range of service accessible are usually characterized by the fare cost and quality of a vehicle, Continuously, companies have found to achieve differentiation service is the most perfect way, and it can provide an operation a competitive edge inside the transportation sector.

According to (Korale, Mandari, & Ray Suh, 2015), in public transportation sector service is presented for commuters by individuals. The accentuation on typically on the passengers add up to involvement. From the point of view of the commuters service is the completion of the vehicles owner and his staff, thus it might be a major apparatus for showcasing of service. The traveler and the operators of the transport are really included in the service exchange. The service is delivered and exhausted at the same time and the encounter could be an essential component inside the exchange. The premise of service procedure is showcase division, for the most part, based on client service wants. Viable transport administrators create a service culture based on best commitment, administration consistency between approach and hone, and well-created channels of communication. Since service people are a part of the thing, an awesome service administrator is required.

2.3.1 Quality Service in Public Transportation Sector

The documentation of quality within the service industry is generally tied to the understanding of the service phenomenon. In four points the characteristics of service can be distinguished :

1- Services are unable to be touched in other words not having a physical presence.

2- Services are performance (activities).

3- Services at the same time are produced and consumed.

4- The customer takes a role within the production process to a few extents.

The customer satisfaction and quality of service equal service quality delivered and expected. Service quality equals the value of service to a customer, It is imperative to note that, the long-term client will regularly pay a premium for quality which they have experienced, and favored, they deliver free advancing through word-of-mouth and conventional bookkeeping hones do not partition the taken a toll of securing a substitution

client. The properties of service quality are tangible, reliability, responsiveness, assurance and empathy.

2.4 Empirical Literature Review

When considering public transport services, it is famously difficult to decide service quality. (Baaj, 2000) state that, to a few extents public sector organizations have a more difficult time than their private sector counterparts, given the differing qualities of customers. They encourage assert that this reinforces the requirement for public sector organizations to guarantee that they are giving quality services that match client expectations as closely as possible (Wisniewski & Donnelly, 1999). When considering public transport, it is especially important to decide service expectations and meet these, as when they are not met, customers are likely to resort to the alternative of using their cars. Because it could be a policy imperative inside the country to make a transport system that's public transport instead of car-centric (Division of Transport, 1996), it is significant that customer needs and expectations are understood so that it gets to be possible to provide public transport services that customers seem to be viable alternatives to the private car.

Randheer, et al. (2011) state that traditional SERVQUAL dimensions may not always be appropriate to all situations and contexts. For this reason, they added culture to their study of customer expectations in public transportation.

A transnational comparison of commuters using public transport service satisfaction is seen in 8 cities in Europe (Stockholm, Barcelona, Copenhagen, Geneva, Helsinki, Vienna, Berlin, Manchester, and Oslo) was conducted by Fellessn & Friman (2008). Four factors were generated by the results: buses and bus stop design that make commuters enjoying the travel experience and comfortable, information and reliability, traffic supply, staff skills, attitude toward the customer. Moreover, it was concluded that contrasts in public transport innovation and infrastructure might cause differences in person item loadings.

According to investigate done by Eboli & Mazulla (2007) service quality properties vital for client satisfaction with a public transportation bus in Cosenza, Italia. A rating was asked to be done by the respondents showing satisfaction and importance in addition to 16 service quality (personal security, bus stop availability, route characteristic, reliability, bus

stop furniture, frequency, bus overcrowding, cleanliness, cost, information, safety on board, personnel, complains, environmental protection and bus stop maintenance, promotion). The result appears that the inactive variable imperative for worldwide client fulfillment is benefit arranging which is reflected in the unwavering quality, recurrence, data, advancement, and complaint.

Advantages of using public transportation according to Portugal commuters was summarized by Beirao (2007). He highlights the significance of a taken a toll inviting and less upsetting public transport service. It is seen as less unpleasant since there's no ought to drive, it is conceivable to relax and one may be able to rest or study. Travel time on elite transport paths is considered quicker than the car, there are less deplete outflows and there are openings to the conversation to an individual traveler whereas traveling.

Oktiani (2009), in his literature assure that there is some researches aim to recognize disappointing and unattractive factors in public transportation. Also, Beirao (2007) conducted profundity interviews in Porto to discover out disappointing variables. Clients detailed squander time, as well swarmed, need of consolation, time vulnerability, need of control, instability, long waiting times, have to be exchanged, they cannot alter the course to dodge activity clog, need of adaptability, and long strolling time. The important factors causing dissatisfaction the driver incompetence, information and punctuality. (Zeithaml & Bitner, 2006)

CHAPTER 3
METHODOLOGY

3.1 Introduction

The chapter is presenting the methodology or the research approach used in the study, from the sample selection method to research design, collection data method and analyzing data method. At the end of this chapter, a part of reliability and validity issues will be discussed to chase the quality standard of the research.

3.2 Methodology of Study

In this study independent variables used as overall satisfaction using Lebanese public buses transportation services. While dependent variables are particular service quality properties which consist of information on public buses transportation, staff behavior, cleanliness, seat availability, bus comfort, bus stops conditions, being safe from accidents and information related to bus stops.

3.3 Collecting Data

To collect the data needed for the research, other resources were needed containing previous researches, studies, books, certified researchers, websites and references that highlighted and discussed this topic. Then distributing questionnaires on the respondents in the research area and get respondents point of view on service quality and customer satisfaction using public bus transportation in Lebanon.

3.4 Respondents and Sample Size

Sampling is divided into two types: Probability sampling and non-probability sampling. Probability sampling is to choose the participants by the confidence that this sample recently representing the target population. Also if the purpose of the research is to make some predictions affecting the whole population or drawing out conclusions, it is possible to use probability sampling. The main feature of using probability sampling techniques is that samples are chosen randomly. Respondents are randomly selected where the respondent has an equal probability of being chosen.

A respondent is a person that his age range is between 15 and 60 years old and regularly uses public bus transportation. The range of age between 15 and 60 was chosen since that people between this ages had a routine in travel and almost certainly has taken public buses transportation as their pattern of choice. Probably children at age of 15 have to go to the school that is far from their neighborhood. And when people pass 60 years old they don't have the same routine commuter behavior since they already pension.

The sample size was designed according to the population of people using public transportation in GBA (Grater Beirut Area).

An infinite sample size

$$S = Z^2 * \frac{P(1-P)}{M^2}$$

Were S: is sample size for infinite population

Z: Z score (were confidence level is assumed 95%)

P: population proportion (assumed to be 50% = 0.5)

M: margin of error (assumed to be 0.05)

S will be equal to 384.16

For GBA commuters population 400,000 sample size will be

$$S` = \frac{S}{1 + \frac{(S-1)}{P}}$$

Were S`: sample size for the required population

S: is sample size for infinite population

P: required population (400,000)

Where we get the sample size of the needed population is 383.79 so by rounding the sample size should be 384 samples. Figure 3.1 presents the summary of the research method and the relation of the chapters and sections to each other in every stage. This research employed qualitative and quantitative data to ensure the validity and reliability of the research findings.

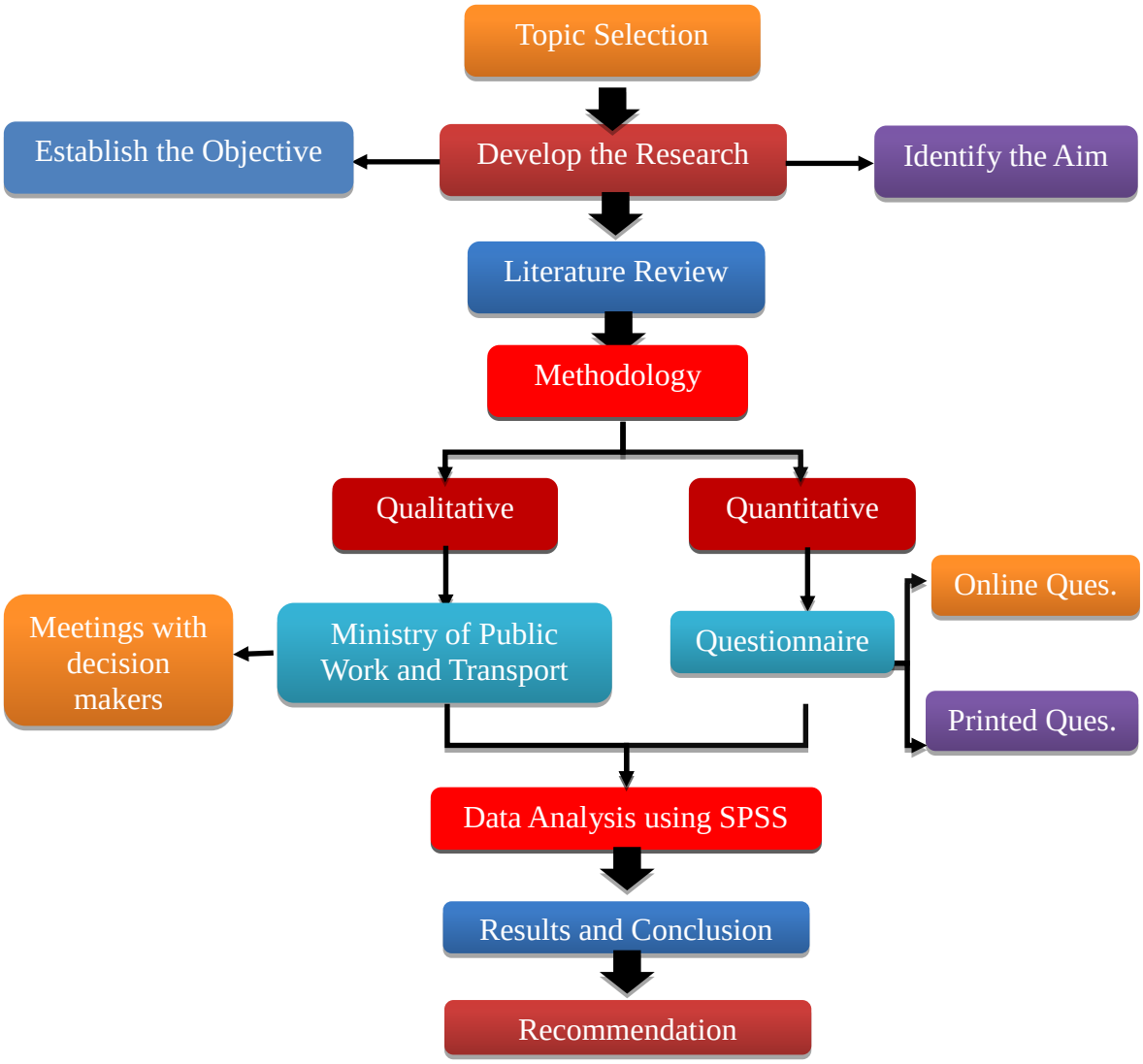

Figure 3.1: Methodology flow chart

3.4 Data measurement

To decide the right method of analysis, the ordinal scales were used based on the Likert scale as appeared in Table 3.1.

Table 3.1: Likert scale

Items	Not Satisfied	Moderately Satisfied	Satisfied	Very Satisfied	Extremely Satisfied
Scale	1	2	3	4	5

3.5 Questionnaire

The questionnaire could be a set of prepared questions given to a group of people. In this thesis, a questionnaire was used about fundamental apparatus for data collection. For logical investigating researches, questionnaire considers one of the widely used methods for gathering data or information about trends, convictions, considerations, and conditions of individuals.

Two versions of the questionnaire in English and Arabic was distributed to Clients in bus stations in GBA. It began with a cover letter clarifying the reason of the research, the way of reacting aim of the investigation and the security of information in arrange to encourage respondents to answer in an appropriate way and provide correct information, as well questions were organized in a logical arrangement and a fitting sequencing see appendix.

3.5.1 Design of Questionnaire

A well careful organization of the questionnaire will encourage the collection process and also will ensure and maximize the validity and reliability of information gathered from respondents. It was developed by generating 25 items, evenly distributed between the five dimensions, after a thorough consideration of the service quality elements of public transport services. The structured interviewer-administered questionnaires consisted of two sections.

The first section requested general information on characteristics such as age, gender, employment status and frequency of usage.

The second section measured the respondents' evaluation and perception regarding the service quality of the transport service provided by the specific transport service. The questionnaire was represented in Figure 3.2 shows the questionnaire types and sections contents.

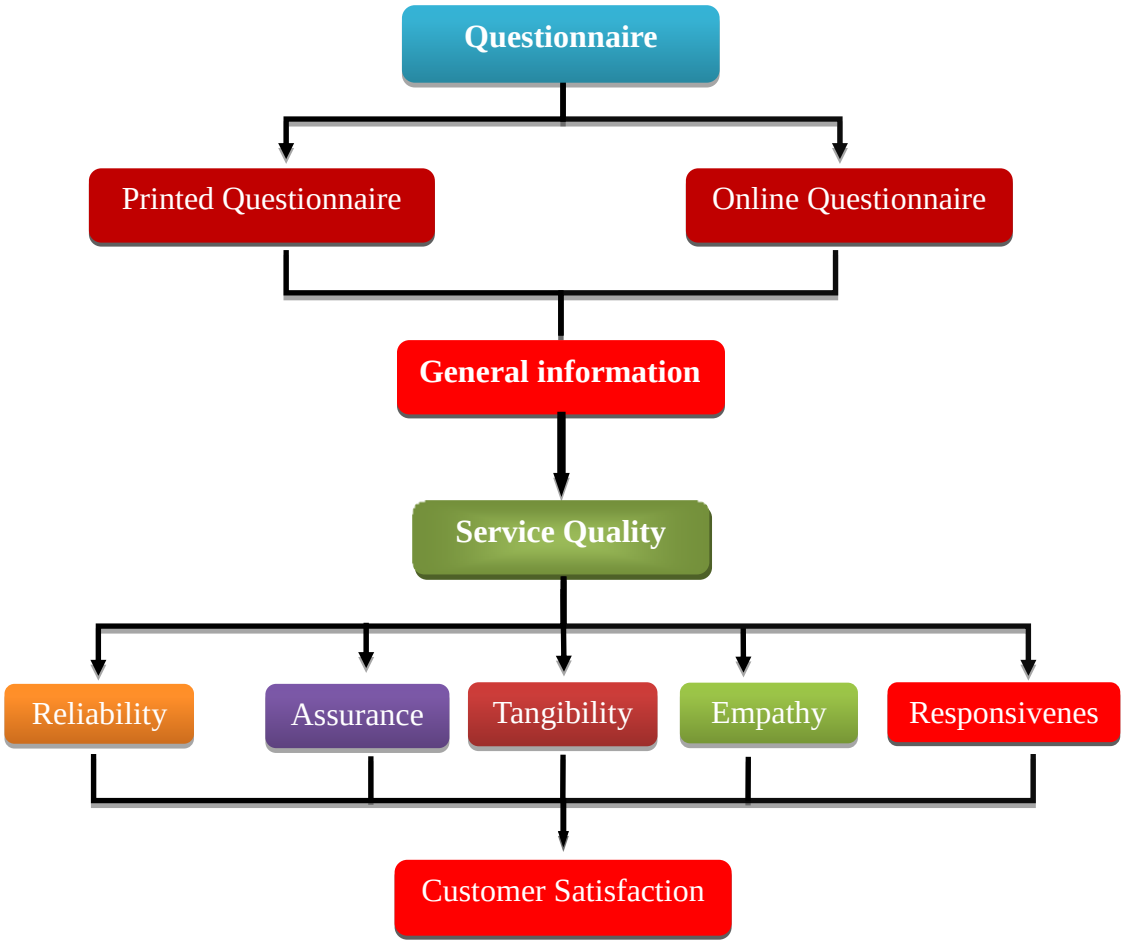

Figure 3.2: Questioner Flow Chart

The survey was conducted amongst the waiting commuters of the major two bus service providers at main bus stops Cola square area in Beirut D.C. Convenience sampling, conducted by research assistants, was thus for used to obtain around 400 responses from mini public buses operated by the Railway and Public Transport Authority (RPTA) respectively. Because convenience sampling was used, generalization from the results of this research is undermined.

3.6 Study Area

The Greater Beirut Area (GBA) extends over an area of close to 200 square kilometers and its population (approximately 1.5 million) is estimated to be one-third of the total Lebanese population. Different economic activities taking place in Beirut at different times of the day (businesses, schools, universities, retail, etc.) cause traffic to be spread throughout the

whole day, without any significant AM or PM peaks, except for the hour between 7:00 and 8:00 AM, which accounts for approximately 6.71% of the daily traffic (Danaf et.al., 2015).

3.7 Procedure

The self-rating questionnaire was utilized as an information gathering technique in this research. The reasons of using two sections survey are to gather information are (1) during filling the questionnaire respondent have break time to understand the aim of each point of the survey, and (2) survey offers privacy. The respondents were asked to fill out the questionnaire online (Google forms) or at bus stations in GBA (Grater Beirut Area). GBA (Grater Beirut Area) was picked since it is the heart of Lebanon were Beirut is a connection between all cities over Lebanon and it has a main transportation system in the country. And a new System with higher quality is planned to be in Beirut by purchasing 120 buses to service 40 kilometers of dedicated Bus Rapid Transit lanes from northern districts to the heart of Beirut. In addition to 250 feeder buses will operate between the main stations and the hinterland (Ziade, 2018). The data shows the satisfaction with the conventional bus transportation system, which is very useful to the Railway and Public Transport Authority (RPTA) to improve the quality of service in public transportation buses in future projects.

In Beirut, information was gathered by passing an out questionnaire in bus stations and various near workplaces by instructed surveyors. This information gathering method was used at peak hours since people were hardly convinced to participate at that time. People waiting at bus stations are regularly in a rush and along these lines hesitant to fill out the survey before the buses arrive.

In Beirut, information was gathered across all day. And in Saida and Tripoli at 6-10 toward the beginning of the day at all stations towards GBA (Grater Beirut Area). The rounded out polls were administrated and coded by one review individual inside the city. The surveyors were brothers, relatives, and friends. They were trained to make sure all data were handled is the same way and to granite an equal administration.

3.8 Data analysis

Data was checked before being used to ensure that they're reliable and valid. Data were checked to identify missing data, removing duplications, recognizing entry errors and checking for irregularities such as exceptions. The questionnaires were analyzed using the Statistical packages for science scientists (SPSS) computer software. The advantage of this bundle is that it can be used to analyze questionnaires with numerous questions counting both closed-ended and open-ended questions (Heyns & Luke, 2016).

3.9 Validity and Reliability

3.9.1 Validity of Questionnaire

In quantitative methods there are two major key concepts are reliability and validity. According to that validity has 3 particular aspects, including criterion validity, content validity, and constructs validity. Content validity alludes to regardless of whether the content of the list variable is right to measure the inactive idea that the investigation is attempting to measure. A large search of the literature on the concept that will be measured is one way to achieve content validity. Criterion validity likewise identified with the hypothesis and anticipated that would have the capacity to foresee certain results. There are 2 different way to build up criterion validity. First, great information of hypothesis related to the idea, second, a leading statical analysis measure the connection between the independent and dependent variables. Constructs validity is some way or another more mind-boggling issue related to the inner structure of an instrument and the idea it is measuring. Factor analysis was outlined to see whether everything evaluated the subscale it should quantify to measure at constructs Validity.

The data was collected from reliable sources, from respondents who have experience in using public buses transportation. The study questions were designed according to the literal view and frame of reference to guarantee the validity of results. The information gathered and collected within 2 weeks.

The validity of the questionnaire is the first statistical test that is used to examine the validity of the questionnaire. It is measured by a scouting sample, which consisted of 30 questionnaires by measuring the correlation coefficients between each item in one field and the whole field.

3.9.2 Reliability of Questionnaire

Reliability alludes to the consistency of a measure. This idea can be taken to involve two components: external and internal reliability. External reliability refers to the degree to which measure is consistent over time. This approach checking reliability is known as test/retest reliability.

The first statical tests are the internal validity of the questionnaire and its used to check the validity. The internal validity is measured by a survey sample, contacting 25 questions.

3.10 Cronbach's Coefficient Alpha

Cronbach's alpha is designed as a measure of internal consistency, that is, do all items within the instrument measure the same thing? The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0 and the higher values reflect a higher degree of internal consistency (George and Mallery, 2006). The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table 3.2 shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.738 and 0.867. This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.900 for the entire questionnaire which indicates excellent reliability of the entire questionnaire.

Table 3.2: Reliability statistics of each dimension of service quality in public bus transport

		Cronbach's Alpha
1	The bus always arrives on time.	
2	The bus never breaks down on the road.	
3	Passengers can book tickets easily.	0.738
4	Staff satisfies passengers' request right the first time.	
5	Is There is a scheduled timetable for buses.	
6	Passengers feel safe in their transactions with staff.	
7	Passenger's luggage is safe.	
8	Staff is always polite.	0.867
9	The staff has in-depth occupational of their jobs.	
10	The behavior of staff instills confidence in the passengers.	

11	Staffs attire is neat and smart.	
13	Bus companies have a professional appearance.	
13	Bus companies have adequate shed for passengers.	
14	Bus companies have spacious seats for passengers on board.	0.704
15	The ticket office is attractive and neat.	
16	Buses are well maintained and neat.	
17	Buses have ample legroom and foot space.	
18	Bus companies have passengers interest at heart.	
19	Bus companies convenient operating hours.	0.826
20	Staff is always polite.	
21	Easy to find and access the ticket office/station	
22	Staff provides individualized attention to help customers.	
23	Bus companies provide timely and efficient services	0.713
24	Communication with staff is clear and helpful.	
25	Staff is always willing to help passengers.	

Statistical packages for science scientists (SPSS) programming offers "dependability examination measurement", Reliability investigation enables you to think about the properties of estimation scales and the thing that influence them to up.

3.11 Statistical Analysis Tools

The Data was analyzed using (SPSS). The following statistical tools were used:

1) Cornbrash's Alpha for Reliability Statistics.

2) Frequency and Descriptive analysis.

3) Pearson correlation coefficient for Validity.

4) One-sample T-test

The t-test is used to determine if the mean of an item is significantly different from a hypothesized value 3 (Middle value of Likert scale). If the P-value (Sig.) is smaller than or equal to the level of significance, $\alpha = 0.05$, then the mean of an item is significantly different from a hypothesized value 3. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 3. On the other hand, if the P-value (Sig.) is greater than the level of significance $\alpha = 0.05$, then the mean an item is insignificantly different from a hypothesized value 3.

CHAPTER 4
RESULTS AND DISCUSSION

This chapter contains results analyzed by SPSS from collected data. These results were performed using reliability Statistics, frequency, and descriptive analysis and Pearson correlation coefficient. The other analyzed data is also used to improve the recommendation that could be applied is local areas.

4.1 Personal data of participants in the questionnaire

402 questionnaires were filled 14, online and 388 hard copy, out of the 402 and 384 were accepted. The sexual id of the respondents consists of 174 women and 213 men. Table 4.1 shows the respondents age range was consisted of 11.2% for ages less then 18, 68.8% age of 18-30; 7% age of 31- 40; 10.9% age of 41-50; and 1.6% age of 51- 60; 0.5% age above 60.

Table 4.1: Frequency and Percentage of Ages of participants

	Frequency	**Percent**
Age > 18	43	11.2
Age 18 – 30	264	68.8
Age 31 – 40	27	7
Age 41 – 50	42	10.9
Age 51 – 60	6	1.6
Age < 60	2	0.5
Total	384	100

323 Lebanese filled the questionnaires of a percentage of 84.1% and the percentage of other nationalities was 15.9% divided on a frequency of 56 Palestine's and 5 Syrians. The field of work was divided into 10.2% working in the engineering field and 12% in medical sector, 20.1% in the business field, 20.1% in the law field, 12.5% in the education field 11.3% as a Students and 13.8% for other fields were divided into (drivers, chief, makeup artist, security etc, ...).

Table 4.2 shows the frequency and percentage of qualification of respondents were 97 of the respondents are at "high school" of a percentage of 25.3%, and 244 has a "bachelor's degree" of a percentage 58.3%, and 62 holds "master degree" by a percentage of 16.2%, while none of the respondents hold a "Ph.D. degree" and 1 not fully educated respondent.

Table 4.2: Frequency and Percentage of qualification of participants

	Frequency	**Percent**
High school	97	25.3
Bachelor Degree	224	58.3
Master Degree	62	16.1
Ph.D. Degree	0	0
Others	1	0.3
Total	384	100

Figure 4.1 shows the percentage of qualification of respondents was 25.3%, of the respondents, are at "high school", and 58.3% has a "bachelor degree", and 16.2% holds "master degree", while 0.3% is not fully educated and 0% "Ph.D. degree". So we concluded that our research is based on highly educated people.

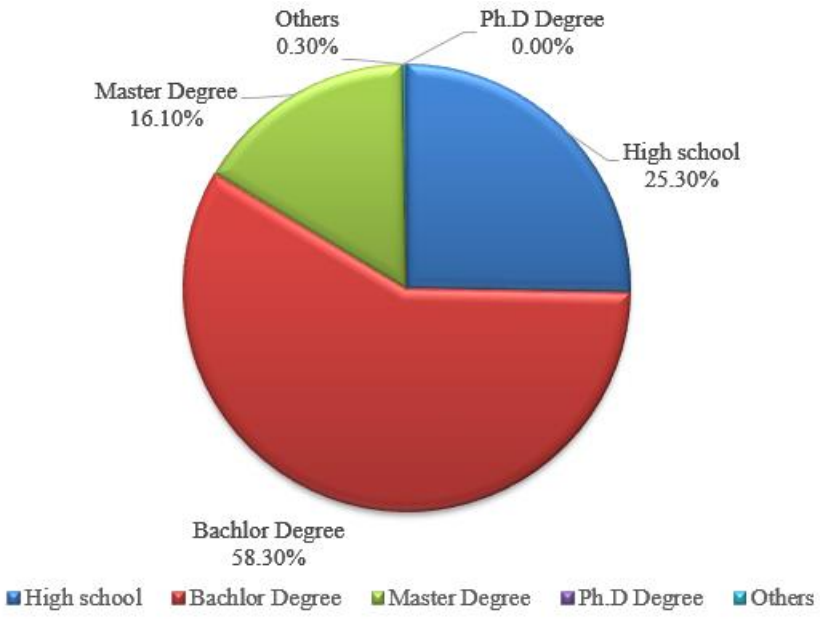

Figure 4.1: Percentage of qualification of participants

4.2 Reliability Statistics Analysis

Table 4.3: Reliability Statistics of the overall dimension of service quality in public transport.

Cronbach's Alpha	N of Items
.900	25

Table 4.3 clarifies the Cronbach's coefficient alpha for overall dimensions of the "Service Quality dimension factors" Cronbach's Alpha value is 0.900, so that shows a generally high internal consistency. Were all the questions are reliable and valid.

4.3 Analysis of Dimensions

4.3.1 Analysis of questions related to Reliability

Table 4.4 shows the analysis of question No 1 "Bus always arrives on time?", 147 respondents were "Not satisfied", 141 respondents were "Moderately satisfied", 47 respondents were "Satisfied" and 30 respondents were "very satisfied" while 19 respondents were "extremely satisfied".

Table 4.4: Frequency and Percentage of Q1 “The bus always arrives on time?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	147	38.3	38.3	38.3
	Moderately satisfied	141	36.7	36.7	75.0
	Satisfied	47	12.2	12.2	87.2
	Very Satisfied	30	7.8	7.8	95.1
	Extremely Satisfied	19	4.9	4.9	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.2 that the 38.3% of respondents were “Not satisfied”, 36.7% were “Moderately satisfied”, 12.2% were “satisfied”, 7.8% were “very satisfied” while 4.9% were “extremely satisfied”.

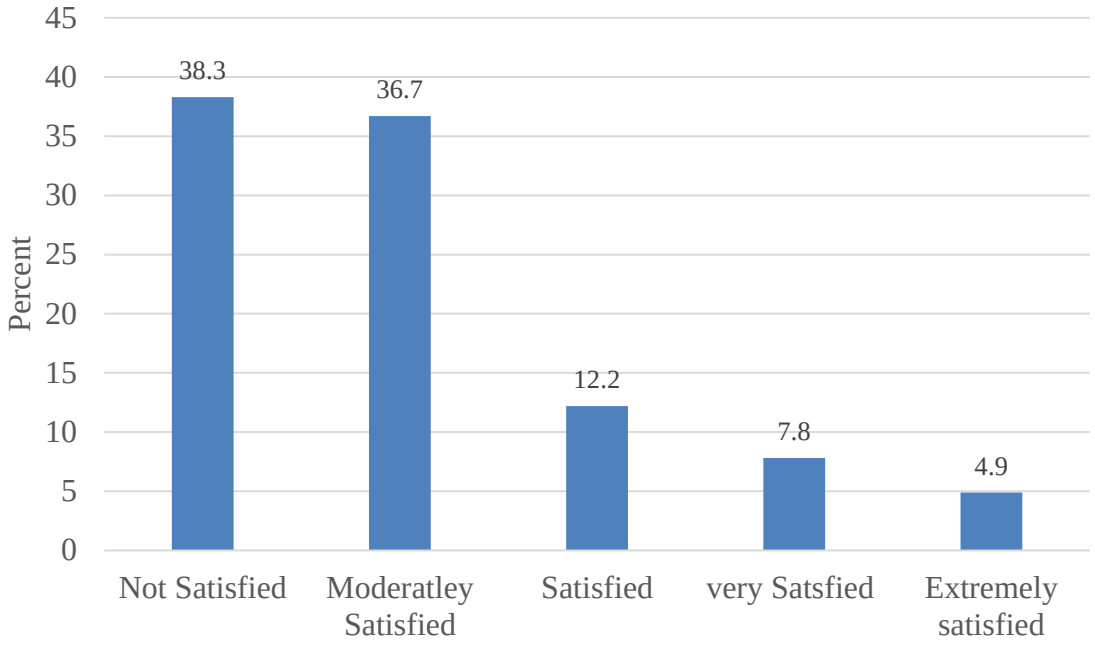

Figure 4.2: Percentage of Q1 “The bus always arrives on time?”

Table 4.5 shows the analysis of question No 2 "The bus never breaks down on the road?". The 121 respondents were "Not satisfied", 89 respondents were "Moderately satisfied", 123 respondents were "Satisfied" and 34 respondents were "very satisfied" while 17 respondents were "extremely satisfied".

Table 4.5: Frequency and Percentage of Q2 “The bus never breaks down on the road?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	121	31.5	31.5	31.5
	Moderately satisfied	89	23.2	23.2	54.7
	Satisfied	123	32.0	32.0	86.7
	Very Satisfied	34	8.9	8.9	95.6
	Extremely Satisfied	17	4.4	4.4	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.3 that the 31.5% of respondents were “Not satisfied”, 23.2% were “Moderately satisfied”, 32% were “satisfied”, 8.9% were “very satisfied” while 4.4% were “extremely satisfied”.

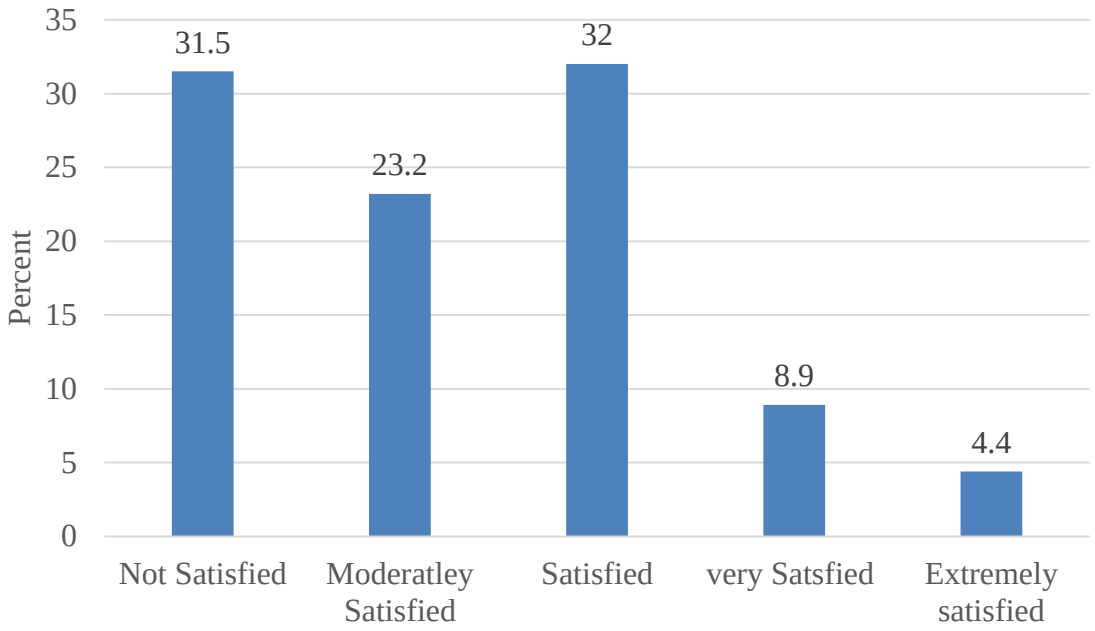

Figure 4.3: Percentage of Q2 “The bus never breaks down on the road?”

Table 4.6 shows the analysis of question No 3 "Passengers can book tickets easily?". The 98 respondents were "Not satisfied", 10 respondents were "Moderately satisfied", 214 respondents were "Satisfied" and 39 respondents were "very satisfied" while 23 respondents were "extremely satisfied".

Table 4.6: Frequency and Percentage of Q3 “Passengers can book tickets easily?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	98	25.5	25.5	25.5
	Moderately satisfied	10	2.6	2.6	28.1
	Satisfied	214	55.7	55.7	83.9
	Very Satisfied	39	10.2	10.2	94.0
	Extremely Satisfied	23	6.0	6.0	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.4 that the 25.5% of respondents were “Not satisfied”, 2.6% were “Moderately satisfied”, 55.7% were “satisfied”, 10.2% were “very satisfied” while 6% were “extremely satisfied”.

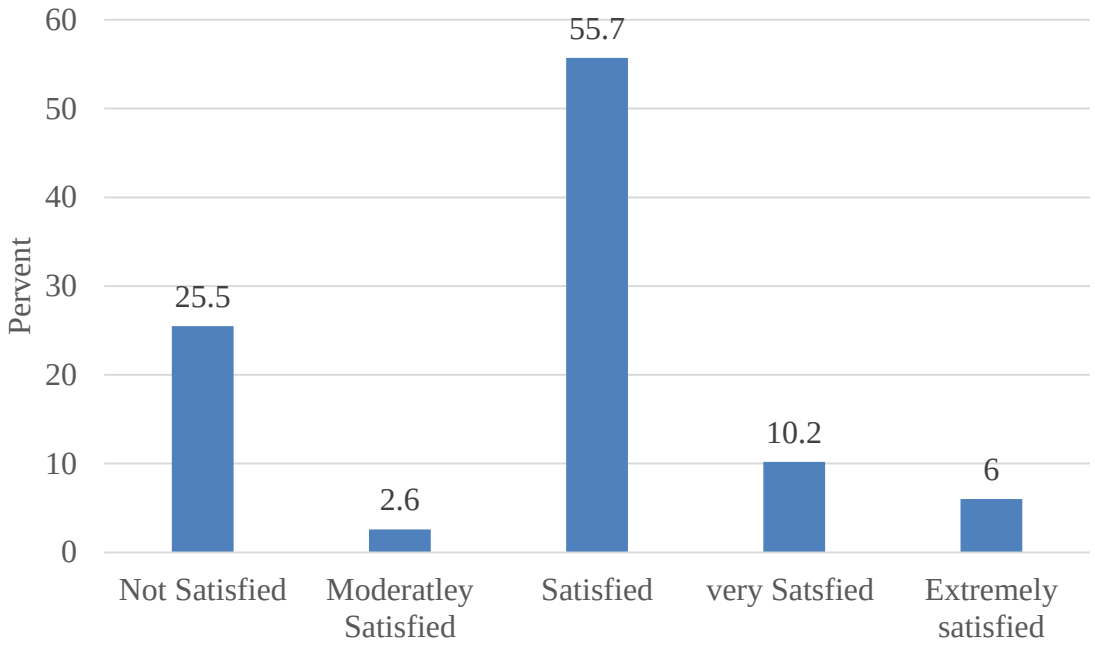

Figure 4.4: Percentage of Q3 “Passengers can book tickets easily?”

Table 4.7 shows the analysis of question No 4 "Staff satisfy passengers' request right the first time?". The 59 respondents were "Not satisfied", 86 respondents were "Moderately satisfied", 121 respondents were "Satisfied" and 78 respondents were "very satisfied" while 40 respondents were "extremely satisfied".

Table 4.7: Frequency and Percentage of Q4 “Staff satisfy passengers’ request right the first time?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	59	15.4	15.4	15.4
	Moderately satisfied	86	22.4	22.4	37.8
	Satisfied	121	31.5	31.5	69.3
	Very Satisfied	78	20.3	20.3	89.6
	Extremely Satisfied	40	10.4	10.4	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.5 that the 15.4% of respondents were “Not satisfied”, 22.4% were “Moderately satisfied”, 31.5% were “satisfied”, 20.3% were “very satisfied” while 10.4% were “extremely satisfied”.

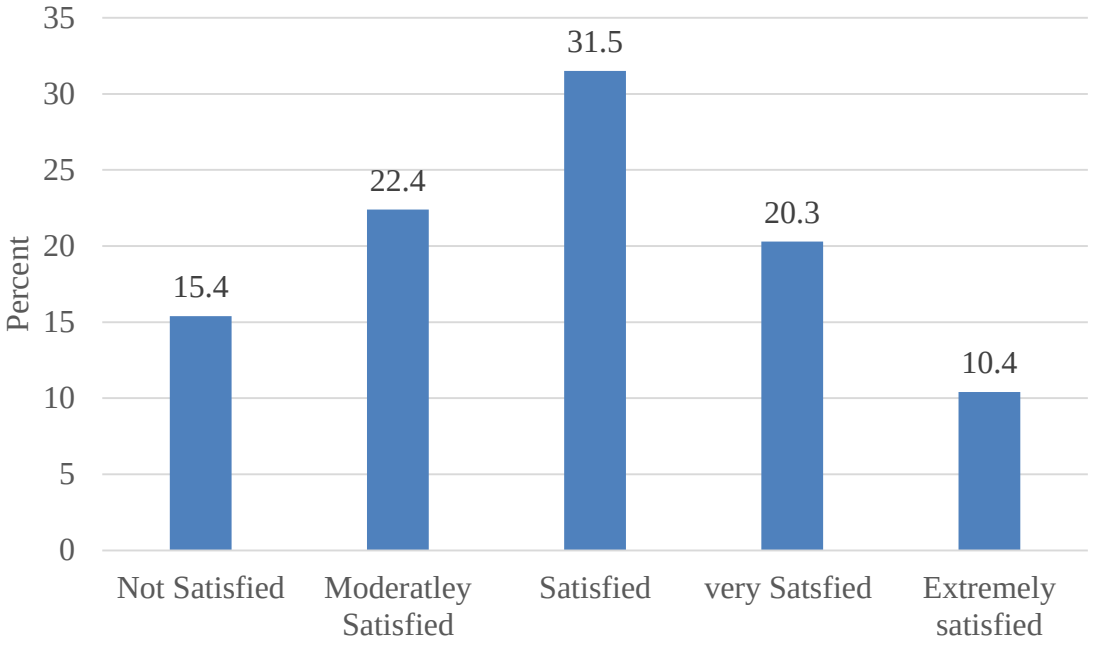

Figure 4.5: Percentage of Q4 “Staff satisfy passengers’ request right the first time?”

Table 4.8 shows the analysis of question No 5 "There is a scheduled timetable for buses?". The 230 respondents were "Not satisfied", 89 respondents were "Moderately satisfied", 30 respondents were "Satisfied" and 4 respondents were "very satisfied" while 31 respondents were "extremely satisfied".

Table 4.8: Frequency and Percentage of Q5 "There is a scheduled timetable for buses?"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	230	59.9	59.9	59.9
	Moderately satisfied	89	23.2	23.2	83.1
	Satisfied	30	7.8	7.8	90.9
	Very Satisfied	4	1.0	1.0	91.9
	Extremely Satisfied	31	8.1	8.1	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.6 that the 59.9% of respondents were “Not satisfied”, 23.2% were “Moderately satisfied”, 7.8% were “satisfied”, 1% were “very satisfied” while 8.1% were “extremely satisfied”.

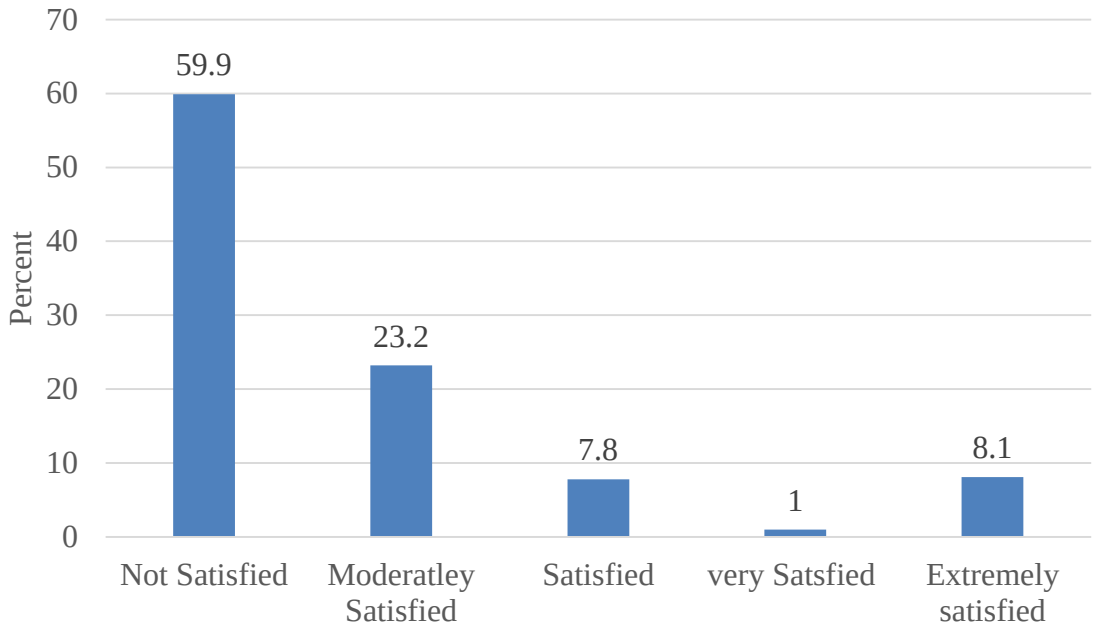

Figure 4.6: Percentage of Q5 "There is a scheduled timetable for buses?"

Table 4.9 Shows the means of service quality factors related to reliability dimension, and this result shows that commuters were unsatisfied with the factors of service quality while using public bus transportation. Results show that commuters were not satisfied at all for not a having a scheduled time table for buses (M= 1.74) were improving this factor commuters and individuals may be encouraged to more use public buses transportation in their travels.

Table 4.9: Mean and Std. deviation of Q1, Q2, Q3, Q4 and Q5

	Q1	Q2	Q3	Q4	Q5
Mean	2.0443	2.3151	2.6849	2.8802	1.7422
Std. Deviation	1.12443	1.13670	1.13670	1.20323	1.17577

As shown in Table 4.9 Q1 “The bus always arrives on time?” the mean M= 2.0443. And in Table 4.10 T value is equal -16.656, and P value = 0.000 which is less than the level of significance α = 0.05. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

In Table 4.9 Q2 “The bus never breaks down on the road?” the mean M= 2.3151. and in Table 4.10 T value is equal –11.807, and P value = 0.000 which is less than the level of significance α = 0.05. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

In Table 4.9 Q3 “Passengers can book tickets easily?” the mean M= 2.6849. And the T value is equal -16.656, and P value = 0.000 which is less than the level of significance α = 0.05. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

In Table 4.9 Q4 “staff satisfy passenger`s right the first time?” the mean M= 2.8802. And the T value is equal -1.951, and P value = 0.052 which is greater than the level of significance α = 0.05. so, the mean of this factor is insignificantly different. So the respondents are neutral to this factor.

In Table 4.9 Q5 "There is a scheduled timetable for buses?" the mean M= 1.7422. and the T value is equal -20.963, and P value = 0.000 which is less than the level of significance α = 0.05. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

Table 4.10 : T value test for Q1, Q2, Q3, Q4 and Q5

One-Sample Test						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q1	-16.656	383	.000	-.95573	-1.0686	-.8429
Q2	-11.807	383	.000	-.68490	-.7989	-.5708
Q3	-5.432	383	.000	-.31510	-.4292	-.2011
Q4	-1.951	383	.052	-.11979	-.2405	.0009
Q5	-20.963	383	.000	-1.25781	-1.3758	-1.1398

Table 4.11 shows the Pearson correlation coefficient of validity analysis on each item related to "Reliability Dimension". P values shown are less than 0.05 level, therefore the Pearson correlation coefficient of this dimension is significant at the α=0.05. as a conclusion of this dimension, it can be said that the items are valid and consistent to measure what it was set for.

Table 4.11: corellation cofficent of Q1, Q2, Q3, Q4 and Q5

Correlations

		Q1	Q2	Q3	Q4	Q5
Q1	Pearson Correlation	1				
Q2	Pearson Correlation	-.009	1			
Q3	Pearson Correlation	.458**	.109*	1		
Q4	Pearson Correlation	.326**	.360**	.503**	1	
Q5	Pearson Correlation	.554**	.336**	.527**	.414**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Note: The red mark is indicated that the correlation value is not significant (p>0.05)

4.2.2 Analysis of questions related to Assurance

Table 4.12 shows analysis of question No 6 "Passengers feel safe in their transactions with staff?" the 179 respondents were "Not satisfied", 22 respondents were "Moderately satisfied", 176 respondents were "Satisfied" and 7 respondents were "very satisfied" while 0 respondents were "extremely satisfied".

Table 4.12: Frequency and Percentage of Q6 “Passengers feel safe in their transactions with staff

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	179	46.6	46.6	46.6
	Moderately satisfied	22	5.7	5.7	52.3
	Satisfied	176	45.8	45.8	98.2
	Very Satisfied	7	1.8	1.8	100.0
	Extremely Satisfied	0	0	0	
	Total	384	100.0	100.0	

As shown in Figure 4.7 that the 46.6% of respondents were “Not satisfied”, 5.7% were “Moderately satisfied”, 45.8% were “satisfied”, 1.8% were “very satisfied” while 0% were “extremely satisfied”.

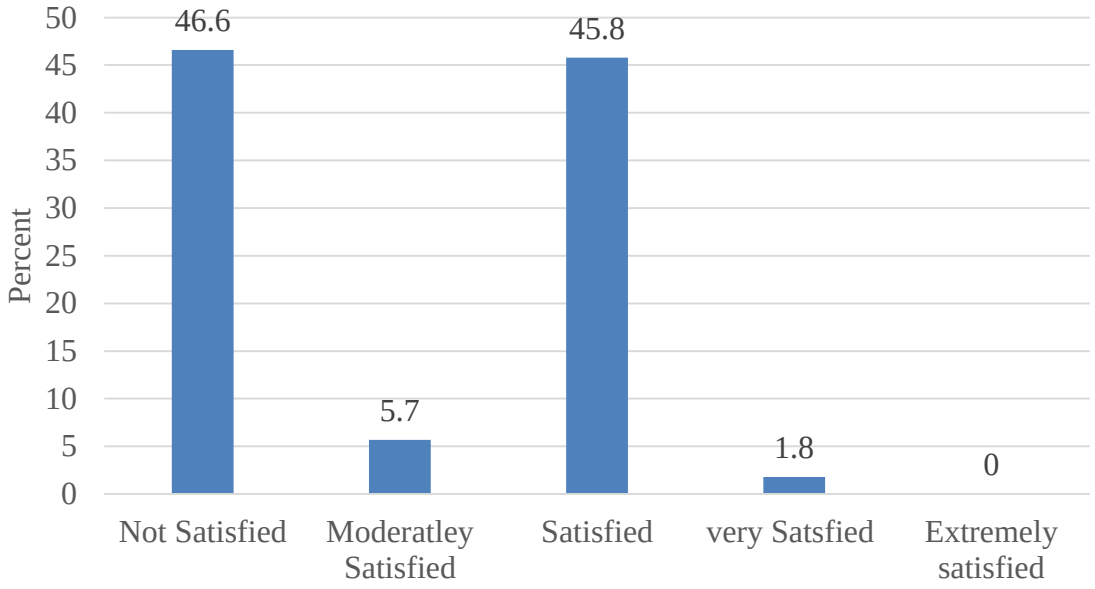

Figure 4.7: Percentage of Q6 “Passengers feel safe in their transactions with staff

Table 4.13 shown analysis of question No 7 "Passengers luggage is safe?". The 86 respondents were "Not satisfied", 120 respondents were "Moderately satisfied", 86 respondents were "Satisfied" and 36 respondents were "very satisfied" while 56 respondents were "extremely satisfied".

Table 4.13: Frequency and Percentage of Q7 “Passengers luggage are safe?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	86	22.4	22.4	22.4
	Moderately satisfied	120	31.3	31.3	53.6
	Satisfied	86	22.4	22.4	76.0
	Very Satisfied	36	9.4	9.4	85.4
	Extremely Satisfied	56	14.6	14.6	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.8 that the 22.4% of respondents were “Not satisfied”, 31.3% were “Moderately satisfied”, 22.4% were “satisfied”, 9.4% were “very satisfied” while 14.6% were “extremely satisfied”.

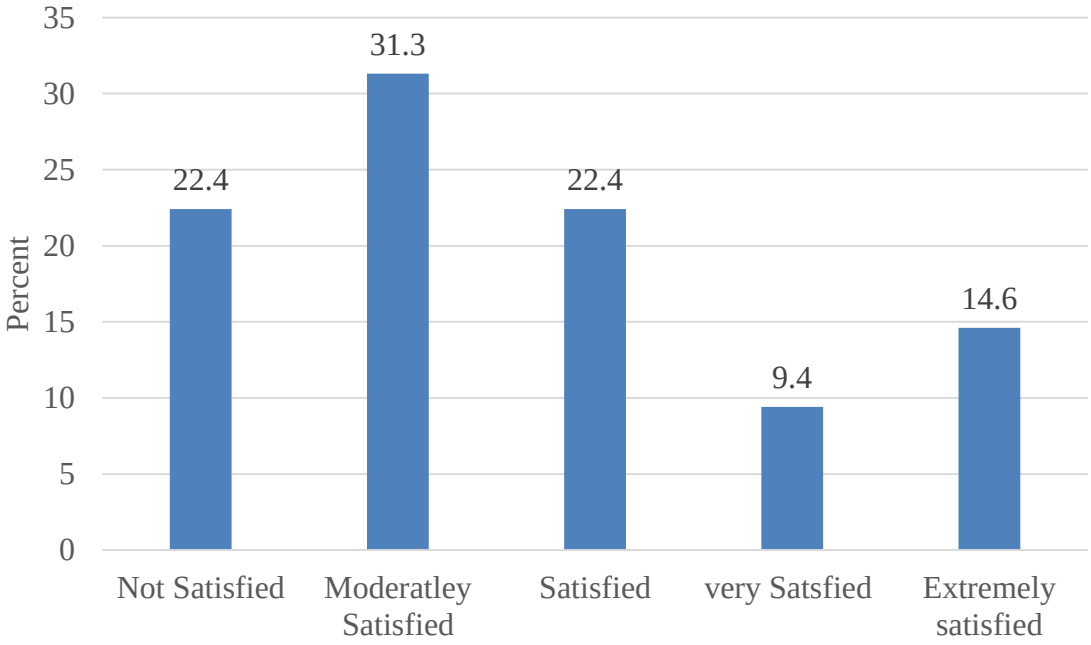

Figure 4.8: Percentage of Q7 “Passengers luggage are safe?”

Table 4.14 shows the analysis of question No 8 "Staff are always polite?". The 90 respondents were "Not satisfied", 123 respondents were "Moderately satisfied", 89 respondents were "Satisfied" and 48 respondents were "very satisfied" while 34 respondents were "extremely satisfied".

Table 4.14: Frequency and Percentage of Q8 “Staff are always polite?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	90	23.4	23.4	23.4
	Moderately satisfied	123	32.0	32.0	55.5
	Satisfied	89	23.2	23.2	78.6
	Very Satisfied	48	12.5	12.5	91.1
	Extremely Satisfied	34	8.9	8.9	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.9 that the 23.4% of respondents were “Not satisfied”, 32% were “Moderately satisfied”, 23.2% were “satisfied”, 12.5% were “very satisfied” while 8.9% were “extremely satisfied”.

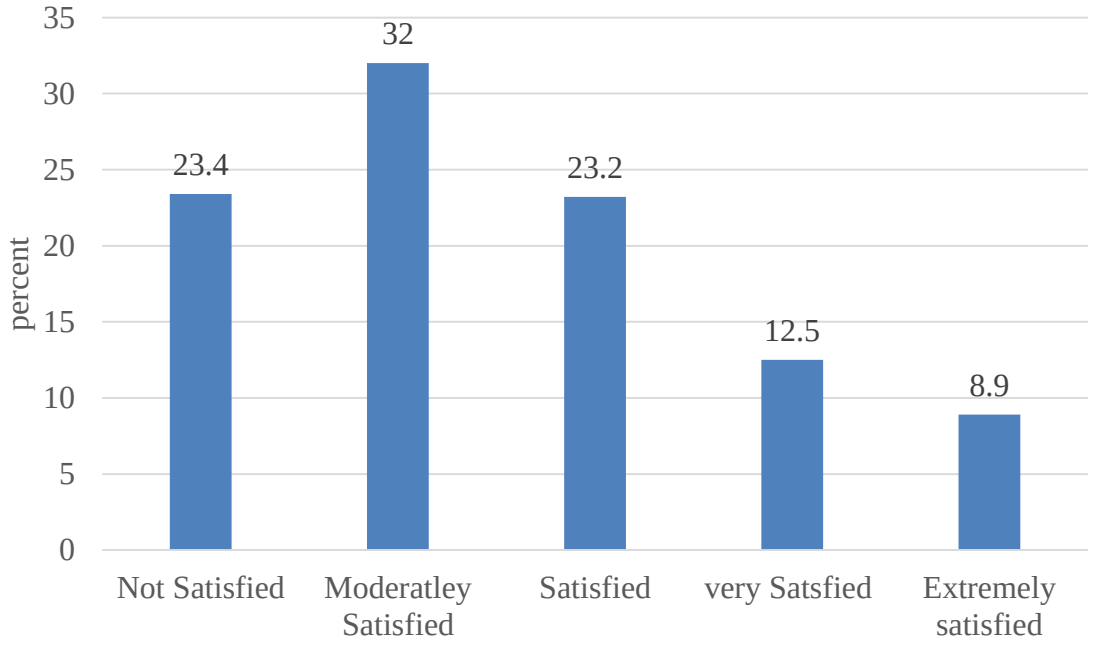

Figure 4.9: Percentage of Q8 “Staff are always polite?”

Table 4.15 shows the analysis of question No 9 "Staff have in-depth occupational of their jobs?". The 44 respondents were "Not satisfied", 107 respondents were "Moderately satisfied", 200 respondents were "Satisfied" and 32 respondents were "very satisfied" while 1 respondent was "extremely satisfied".

Table 4.15: Frequency and Percentage of Q9 “Staff have in-depth occupational of their jobs?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	44	11.5	11.5	11.5
	Moderately satisfied	107	27.9	27.9	39.3
	Satisfied	200	52.1	52.1	91.4
	Very Satisfied	32	8.3	8.3	99.7
	Extremely Satisfied	1	0.3	0.3	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.10 that the 11.5% of respondents were “Not satisfied”, 27.9% were “Moderately satisfied”, 52.1% were “satisfied”, 8.3% were “very satisfied” while 0.3% were “extremely satisfied”.

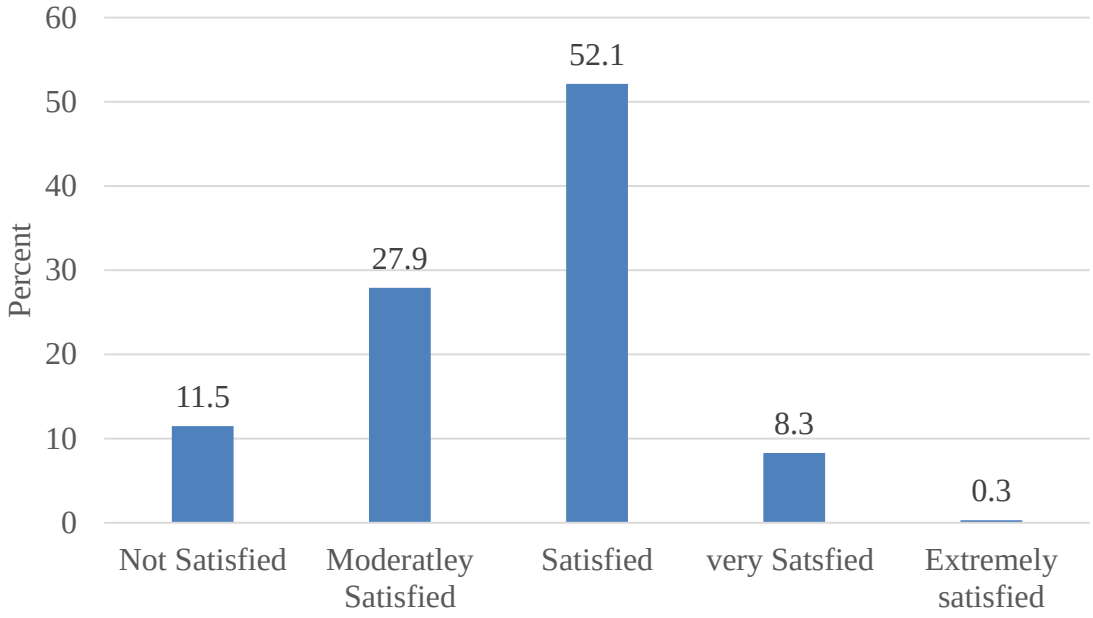

Figure 4.10: Percentage of Q9 “Staff have in-depth occupational of their jobs?”

Table 4.16 shows analysis of question No 10 "Behavior of staff instills confidence in the passengers?" the 46 respondents were "Not satisfied", 118 respondents were "Moderately satisfied", 178 respondents were "Satisfied" and 42 respondents were "very satisfied" while 0 respondents were "extremely satisfied".

Table 4.16: Frequency and Percentage of Q10 “Behavior of staff instills confidence in the passengers?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	46	12.0	12.0	12.0
	Moderately satisfied	118	30.7	30.7	42.7
	Satisfied	178	46.4	46.4	89.1
	Very Satisfied	42	10.9	10.9	100.0
	Extremely Satisfied	0	0	0	
	Total	384	100.0	100.0	

As shown in Figure 4.11 that the 12% of respondents were “Not satisfied”, 30.7% were “Moderately satisfied”, 46.4% were “satisfied”, 10.9% were “very satisfied” while 0% were “extremely satisfied”.

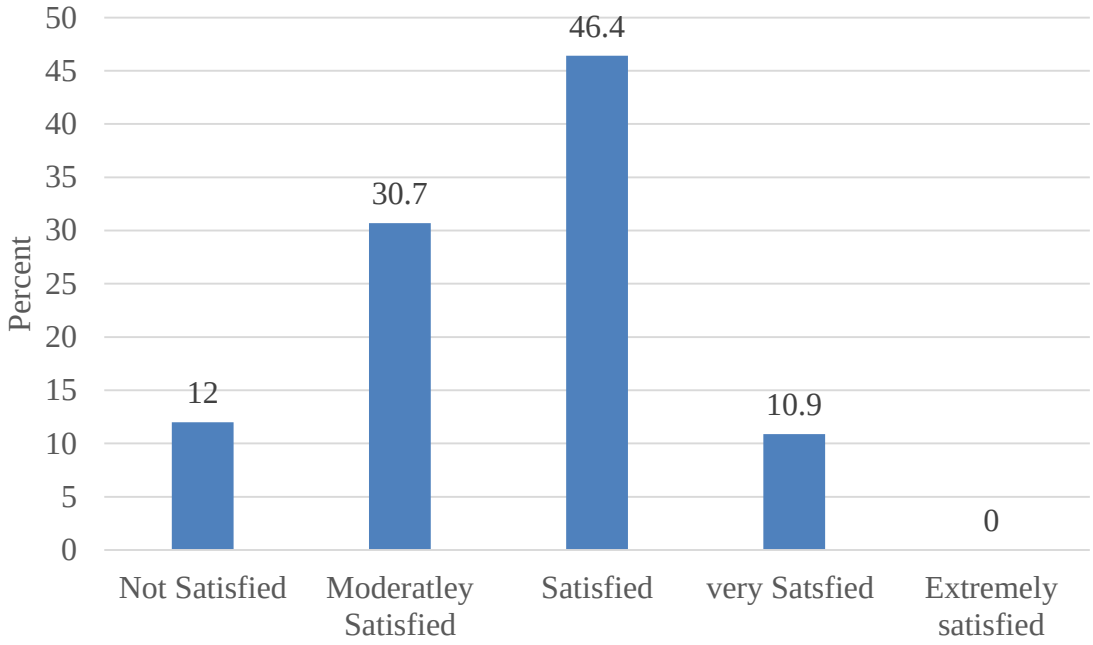

Figure 4.11: Percentage of Q10 “Behavior of staff instills confidence in the passengers?”

Table 4.17 Shows the means of service quality factors related to reliability dimension, and this result shows that commuters were unsatisfied with the factors of service quality while using public bus transportation. Results show that commuters were not feeling safe in their transaction with staff (M= 2.0286) were improving this factor commuters and individuals may be encouraged to more use public buses transportation in their travels.

Table 4.17: Mean and Std. deviation of Q6, Q7, Q8, Q9 and Q10

	Q6	Q7	Q8	Q9	Q10
Mean	2.0286	2.6250	2.5130	2.5807	2.5625
Std. Deviation	.99959	1.32263	1.22627	.81034	.84040

Table 4.18 shows that T value of the quality service related to " Assurance Dimension " is between -5.556 and -19.042, and P-value = 0.000 which is less than the level of significance $\alpha = 0.05$. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

Table 4.18: T value test of of Q6, Q7, Q8, Q9, and Q10

One-Sample Test						
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q6	-19.042	383	.000	-.97135	-1.0716	-.8711
Q7	-5.556	383	.000	-.37500	-.5077	-.2423
Q8	-7.782	383	.000	-.48698	-.6100	-.3639
Q9	-10.139	383	.000	-.41927	-.5006	-.3380
Q10	-10.201	383	.000	-.43750	-.5218	-.3532

Table 4.19 shows the Pearson correlation coefficient of validity analysis on each item related to "Assurance Dimension". P-values shown are less than 0.05 level, therefore the Pearson correlation coefficient of this dimension is significant at the α=0.05. as a conclusion of this dimension, it can be said that the items are valid and consistent to measure what it was set for.

Table 4.19: Correlation cofficent Q6, Q7, Q8, Q9 and Q10

Correlations						
		Q6	Q7	Q8	Q9	Q10
Q6	Pearson Correlation	1				
Q7	Pearson Correlation	.689**	1			
Q8	Pearson Correlation	.604**	.824**	1		
Q9	Pearson Correlation	.418**	.537**	.548**	1	
Q10	Pearson Correlation	.500**	.540**	.459**	.631**	1

**. Correlation is significant at the 0.01 level (2-tailed).

4.3.3 Analysis of questions related to Tangibles

Table 4.20 shows the analysis of question No 11 "Staffs attire is neat and smart?" the 93 respondents were "Not satisfied", 128 respondents were "Moderately satisfied", 137 respondents were "Satisfied" and 9 respondents were "very satisfied" while 17 respondents were "extremely satisfied".

Table 4.20: Frequency and Percentage of Q11 “Staffs attire is neat and smart?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	93	24.2	24.2	24.2
	Moderately satisfied	128	33.3	33.3	57.6
	Satisfied	137	35.7	35.7	93.2
	Very Satisfied	9	2.3	2.3	95.6
	Extremely Satisfied	17	4.4	4.4	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.12 that the 24.2% of respondents were “Not satisfied”, 33.3% were “Moderately satisfied”, 35.7% were “satisfied”, 2.3% were “very satisfied” while 4.4% were “extremely satisfied”.

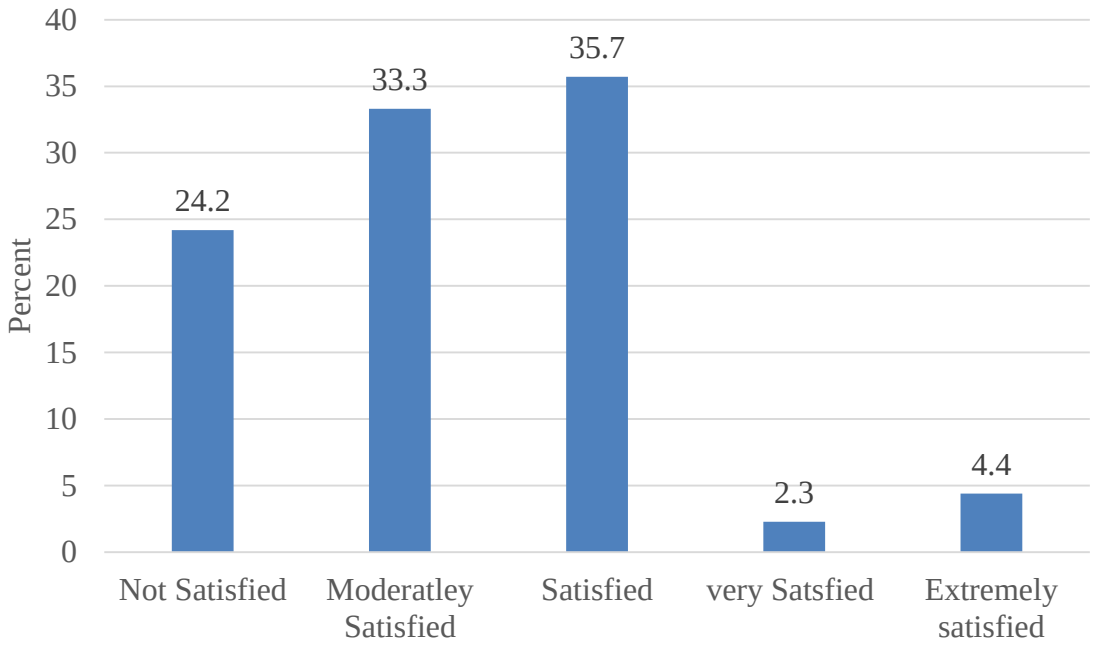

Figure 4.12: Percentage of Q11 “Staffs attire is neat and smart?”

Table 4.21 shows analysis of question No 12 "Bus companies have a professional appearance?" the 176 respondents were "Not satisfied", 122 respondents were "Moderately satisfied", 86 respondents were "Satisfied" and 0 respondents were "very satisfied" while 0 respondents were "extremely satisfied".

Table 4.21: Frequency and Percentage of Q12 “Bus companies have a professional appearance?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	176	45.8	45.8	45.8
	Moderately satisfied	122	31.8	31.8	77.6
	Satisfied	86	22.4	22.4	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.13 that the 45.8% of respondents were “Not satisfied”, 31.8% were “Moderately satisfied”, 22.4% were “satisfied”, 0% were “very satisfied” while 0% were “extremely satisfied”.

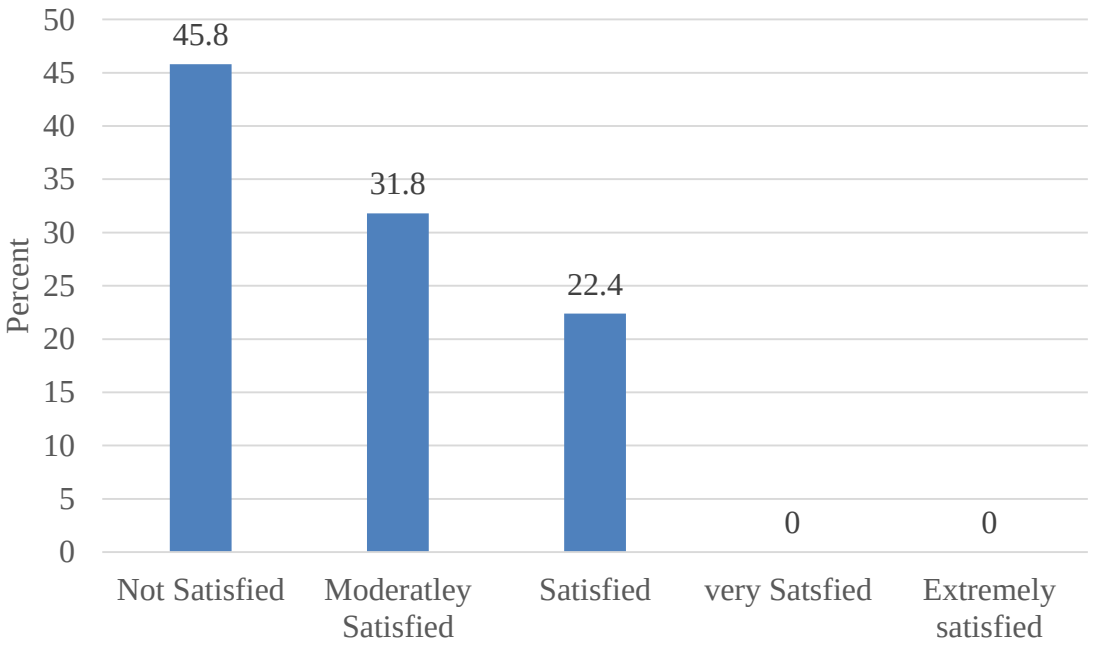

Figure 4.13: Percentage of Q12 “Bus companies have a professional appearance?”

Table 4.22 shows analysis of question No 13 "Bus companies have a professional appearance?" the 101 respondents were "Not satisfied", 157 respondents were "Moderately satisfied", 115 respondents were "Satisfied" and 9 respondents were "very satisfied" while 2 respondents were "extremely satisfied".

Table 4.22: Frequency and Percentage of Q13 “Bus companies have a professional appearance?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	101	26.3	26.3	26.3
	Moderately satisfied	157	40.9	40.9	67.2
	Satisfied	115	29.9	29.9	97.1
	Very Satisfied	9	2.3	2.3	99.5
	Extremely Satisfied	2	.5	.5	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.14 that the 26.3% of respondents were “Not satisfied”, 40.9% were “Moderately satisfied”, 29.9% were “satisfied”, 2.3% were “very satisfied” while 0.5% were “extremely satisfied”.

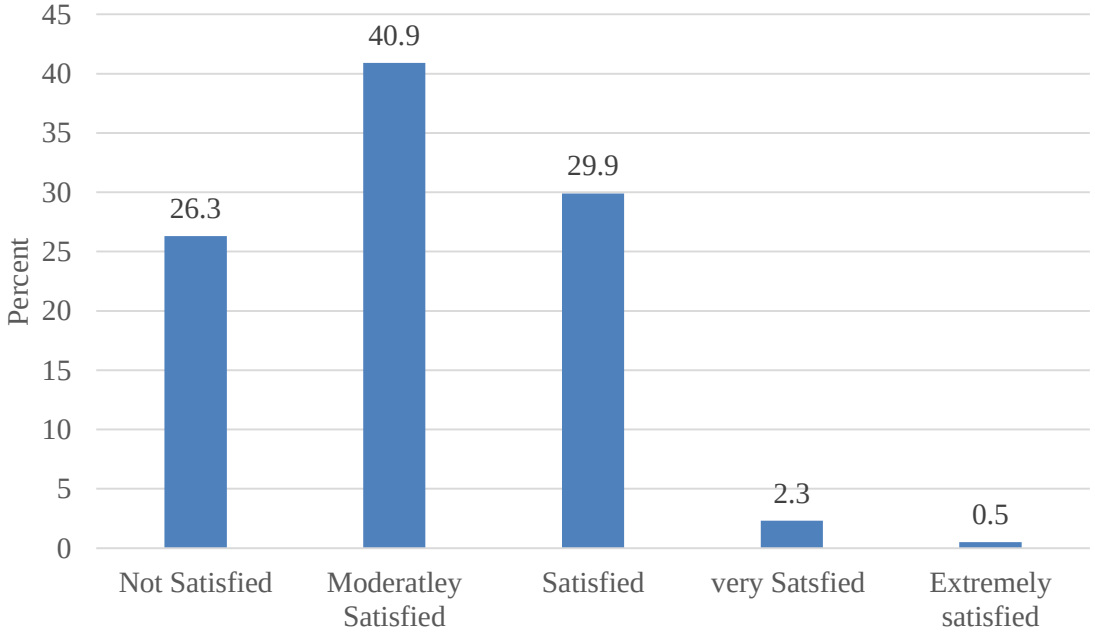

Figure 4.14: Percentage of Q13 “Bus companies have a professional appearance?”

Table 4.23 shows the analysis of question No 14 "Bus companies have spacious seats for passengers on board?". The 147 respondents were "Not satisfied", 141 respondents were "Moderately satisfied", 47 respondents were "Satisfied" and 30 respondents were "very satisfied" while 19 respondents were "extremely satisfied".

Table 4.23: Frequency and Percentage of Q14 “Bus companies have spacious seats for passengers on board?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	82	21.4	21.4	21.4
	Moderately satisfied	52	13.5	13.5	34.9
	Satisfied	168	43.8	43.8	78.6
	Very Satisfied	31	8.1	8.1	86.7
	Extremely Satisfied	51	13.3	13.3	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.15 that the 21.4% of respondents were “Not satisfied”, 13.5% were “Moderately satisfied”, 43.8% were “satisfied”, 8.1% were “very satisfied” while 13.3% were “extremely satisfied”.

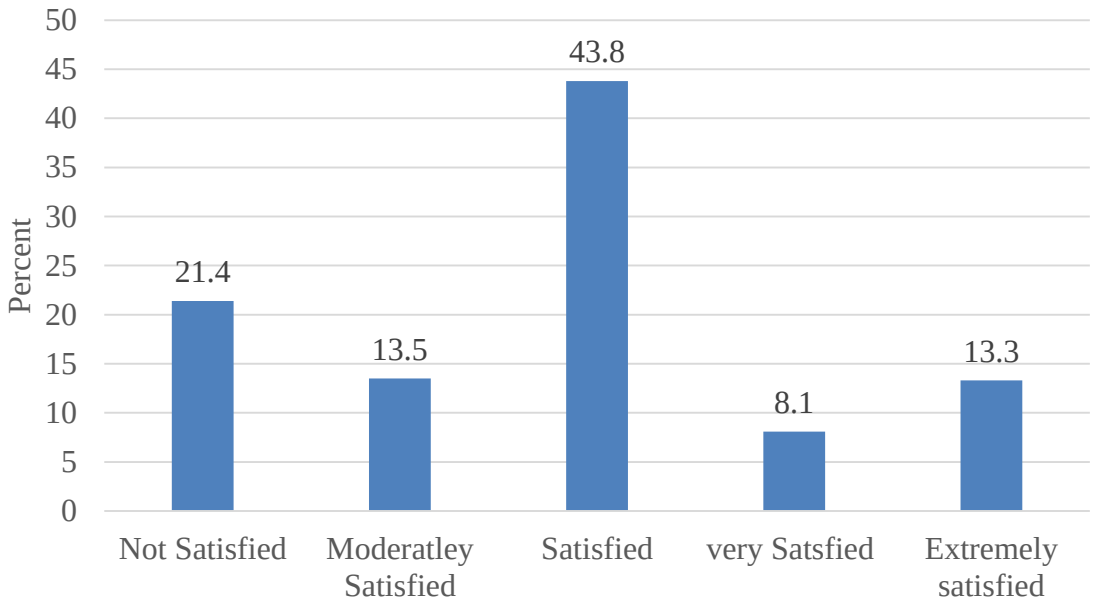

Figure 4.15: Percentage of Q14 “Bus companies have spacious seats for passengers on board?”

Table 4.24 shows analysis of question No 15 "Bus companies have a professional appearance?" the 189 respondents were "Not satisfied", 99 respondents were "Moderately satisfied", 74 respondents were "Satisfied" and 1 respondent was "very satisfied" while 21 respondents were "extremely satisfied".

Table 4.24: Frequency and Percentage of Q15 “Bus companies have a professional appearance

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	189	49.2	49.2	49.2
	Moderately satisfied	99	25.8	25.8	75.0
	Satisfied	74	19.3	19.3	94.3
	Very Satisfied	1	.3	.3	94.5
	Extremely Satisfied	21	5.5	5.5	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.16 that the 49.2% of respondents were “Not satisfied”, 25.8% were “Moderately satisfied”, 19.3% were “satisfied”, 0.3% were “very satisfied” while 5.5% were “extremely satisfied”.

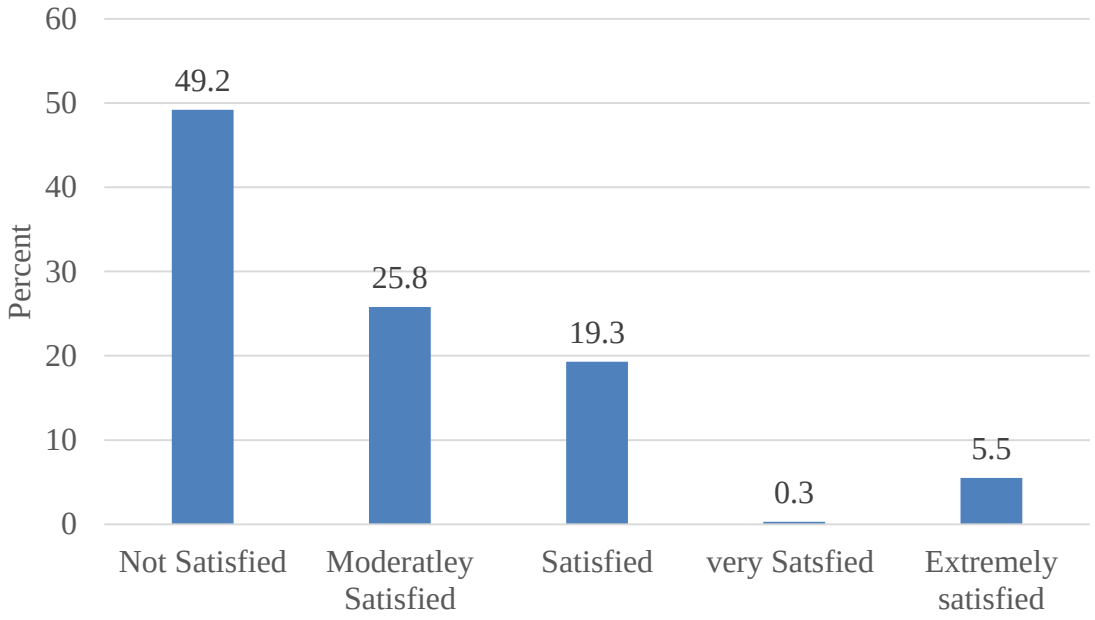

Figure 4.16: Percentage of Q15 “Bus companies have a professional appearance?”

Table 4.25 shows analysis of question No 16 "Bus companies have spacious seats for passengers on board?" the 148 respondents were "Not satisfied", 92 respondents were "Moderately satisfied", 128 respondents were "Satisfied" and 7 respondents were "very satisfied" while 9 respondents were "extremely satisfied".

Table 4.25: Frequency and Percentage of Q16 “Bus companies have spacious seats for passengers on board?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	148	38.5	38.5	38.5
	Moderately satisfied	92	24.0	24.0	62.5
	Satisfied	128	33.3	33.3	95.8
	Very Satisfied	7	1.8	1.8	97.7
	Extremely Satisfied	9	2.3	2.3	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.17 that the 38.5% of respondents were “Not satisfied”, 24% were “Moderately satisfied”, 33.3% were “satisfied”, 1.8% were “very satisfied” while 2.3% were “extremely satisfied”.

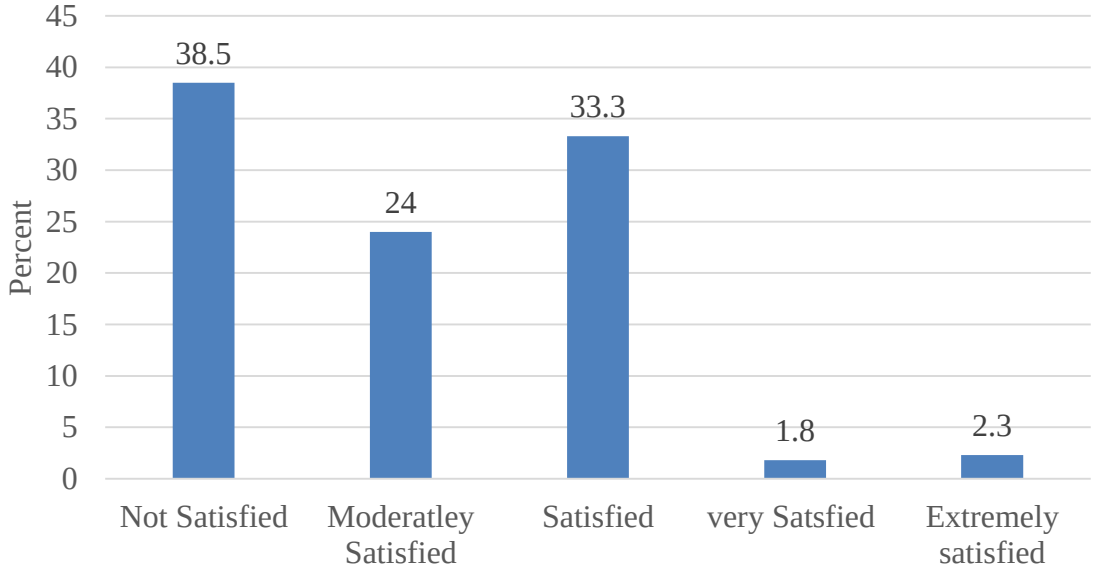

Figure 4.17: Percentage of Q16 “Bus companies have spacious seats for passengers on board?”

Table 4.26 shows analysis of question No 17 "Buses have ample legroom and foot space?" the 65 respondents were "Not satisfied", 114 respondents were "Moderately satisfied", 86 respondents were "Satisfied" and 62 respondents were "very satisfied" while 57 respondents were "extremely satisfied".

Table 4.26: Frequency and Percentage of Q17 "Buses have ample legroom and foot space?"

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	65	16.9	16.9	16.9
	Moderately satisfied	114	29.7	29.7	46.6
	Satisfied	86	22.4	22.4	69.0
	Very Satisfied	62	16.1	16.1	85.2
	Extremely Satisfied	57	14.8	14.8	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.18 that the 16.9% of respondents were "Not satisfied", 29.7% were "Moderately satisfied", 22.4% were "satisfied", 16.4% were "very satisfied" while 14.8% were "extremely satisfied".

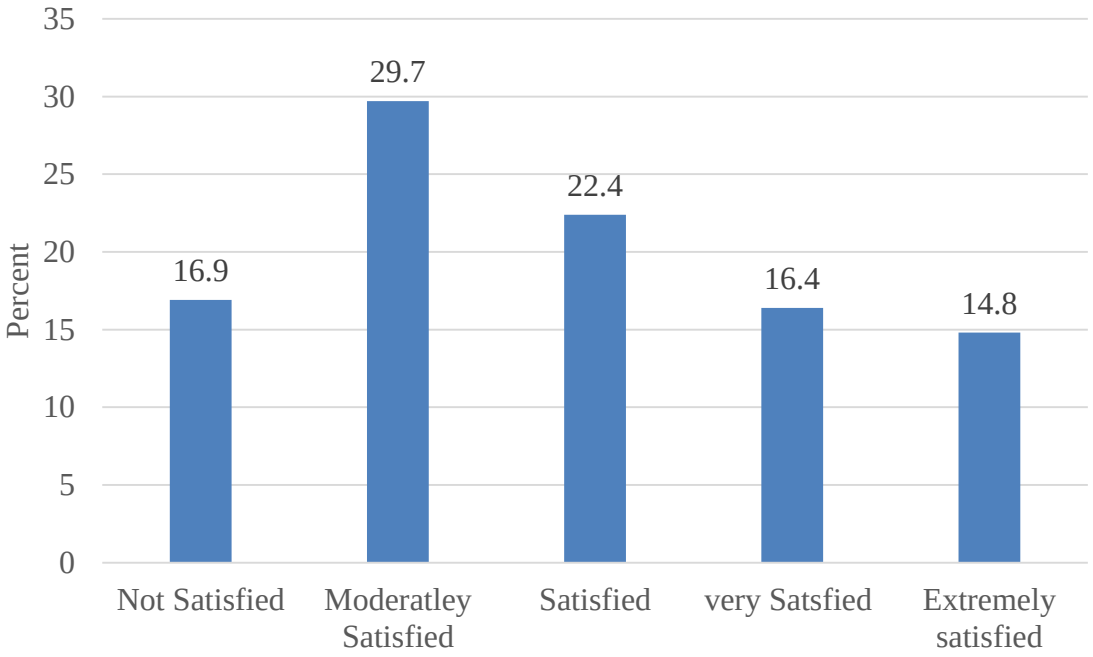

Figure 4.18: Percentage of Q17 "Buses have ample legroom and foot space?"

Table 4.27 Shows the means of service quality factors related to reliability dimension, and this result shows that commuters were unsatisfied with the factors of service quality while using public bus transportation. Results show that commuters were not satisfied at all in this dimension for the buses appearance (M= 1.765) were improving this factor commuters and individuals may be encouraged to more use public buses transportation in their travels.

Table 4.27: Mean and Std. deviation of Q11, Q12, Q13, Q14, Q15, Q16 and Q17

	Q11	Q12	Q13	Q14	Q15	Q16	Q17
Mean	2.2943	1.7656	2.0990	2.7839	1.8698	2.0547	2.8229
Std. Deviation	1.00358	.79309	.83375	1.24856	1.08333	1.00111	1.30470

Table 4.28 shows that T value of the quality service related to " Tangibility Dimension" is between -2.660 and -30.449, and P-value = 0.000 for most factors and 0.001 for Q14 which is less than the level of significance $\alpha = 0.05$. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

Table 4.28: T value test of of Q11, Q12, Q13, Q14, Q15, Q16 and Q17

One-Sample Test						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q11	-13.780	383	.000	-.70573	-.8064	-.6050
Q12	-30.499	383	.000	-1.23438	-1.3140	-1.1548
Q13	-21.177	383	.000	-.90104	-.9847	-.8174
Q14	-3.392	383	.001	-.21615	-.3414	-.0909
Q15	-20.444	383	.000	-1.13021	-1.2389	-1.0215
Q16	-18.504	383	.000	-.94531	-1.0458	-.8449
Q17	-2.660	383	.008	-.17708	-.3080	-.0462

Table 4.29 shows the Pearson correlation coefficient of validity analysis on each item related to "Tangibility dimension". P values shown are less than 0.05 level, therefore the Pearson correlation coefficient of this dimension is significant at the α=0.05. as a conclusion of this dimension, it can be said that the items are valid and consistent to measure what it was set for.

Table 4.29: Correlation cofficent of Q11, Q12, Q13, Q14, Q15, Q16 and Q17

Correlations							
		Q11	Q12	Q13	Q14	Q15	Q16	Q17
Q11	Pearson Correlation	1						
Q12	Pearson Correlation	.320**	1					
Q13	Pearson Correlation	.258**	.446**	1				
Q14	Pearson Correlation	.186**	.199**	.229**	1			
Q15	Pearson Correlation	.155**	.423**	.621**	.080	1		
Q16	Pearson Correlation	.262**	.269**	.507**	.300**	.693**	1	
Q17	Pearson Correlation	.353**	-.123*	-.046	.384**	.211**	.335**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4.2.4 Analysis of questions related to Empathy

Table 4.30 shows analysis of question No 18 "Bus companies have passengers interest at heart?". The 147 respondents were "Not satisfied", 141 respondents were "Moderately satisfied", 47 respondents were "Satisfied" and 30 respondents were "very satisfied" while 19 respondents were "extremely satisfied".

Table 4.30: Frequency and Percentage of Q18 “Bus companies have passengers interest at heart?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	33	8.6	8.6	8.6
	Moderately satisfied	216	56.3	56.3	64.8
	Satisfied	135	35.2	35.2	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.19 that the 8.6% of respondents were “Not satisfied”, 56.3% were “Moderately satisfied”, 35.2% were “satisfied”, 0% were “very satisfied” while 0% were “extremely satisfied”.

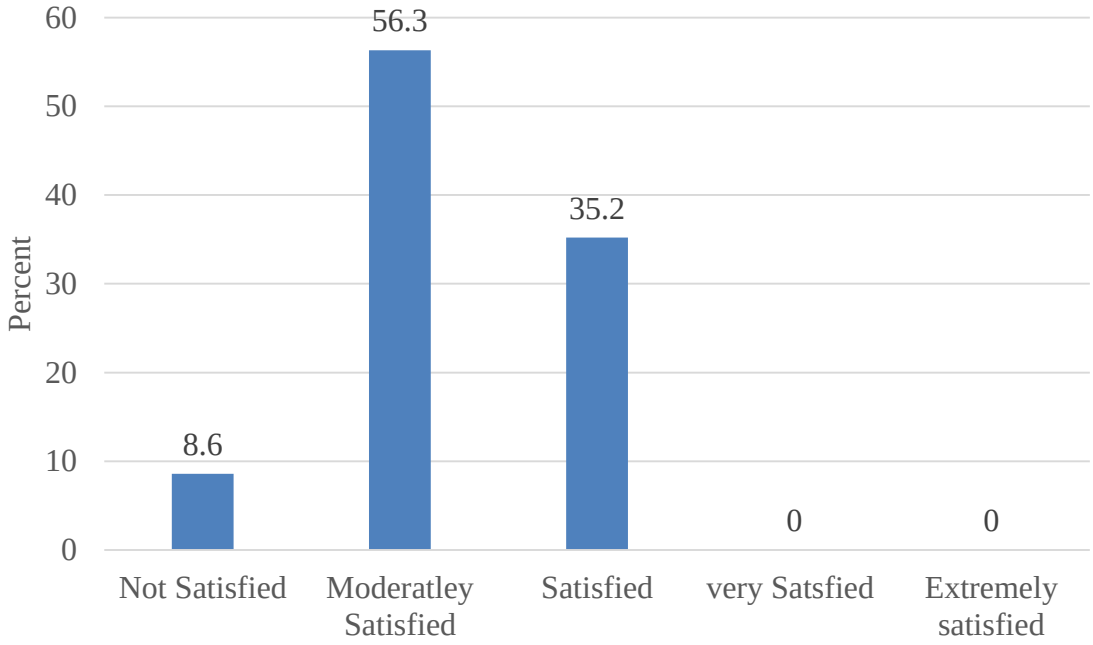

Figure 4.19: Percentage of Q18 “Bus companies have passengers interest at heart?”

Table 4.31 Shown analysis of question No 19 "Bus companies convenient operating hours?". The 6 respondents were "Not satisfied", 210 respondents were "Moderately satisfied", 128 respondents were "Satisfied" and 40 respondents were "very satisfied" while 0 respondents were "extremely satisfied".

Table 4.31: Frequency and Percentage of Q19 “Bus companies convenient operating hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	6	1.6	1.6	1.6
	Moderately satisfied	210	54.7	54.7	56.3
	Satisfied	128	33.3	33.3	89.6
	Very Satisfied	40	10.4	10.4	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.20 that the 1.6% of respondents were “Not satisfied”, 54.7% were “Moderately satisfied”, 33.3% were “satisfied”, 10.4% were “very satisfied” while 0% were “extremely satisfied”.

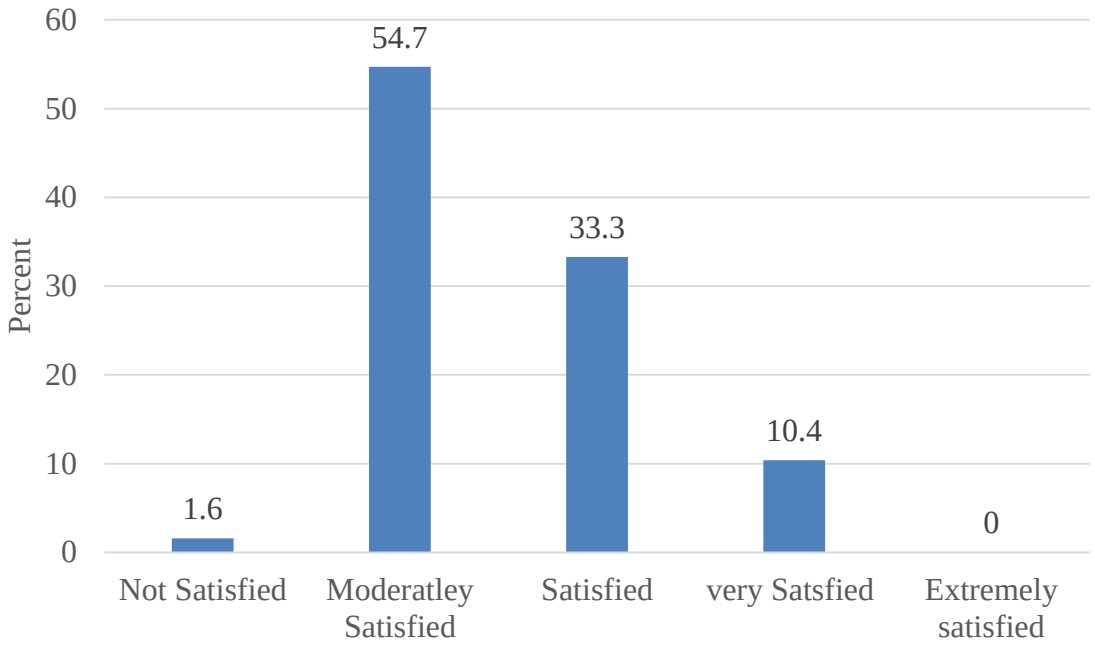

Figure 4.20: Percentage of Q19 “Bus companies convenient operating hours”

Table 4.32 shows analysis of question No 20 "Staff are always polite?" the 147 respondents were "Not satisfied", 141 respondents were "Moderately satisfied", 47 respondents were "Satisfied" and 30 respondents were "very satisfied" while 19 respondents were "extremely satisfied".

Table 4.32: Frequency and Percentage of Q20 “Staff are always polite?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	22	5.7	5.7	5.7
	Moderately satisfied	202	52.6	52.6	58.3
	Satisfied	104	27.1	27.1	85.4
	Very Satisfied	56	14.6	14.6	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.21 that the 38.3% of respondents were “Not satisfied”, 36.7% were “Moderately satisfied”, 12.2% were “satisfied”, 7.8% were “very satisfied” while 4.9% were “extremely satisfied”.

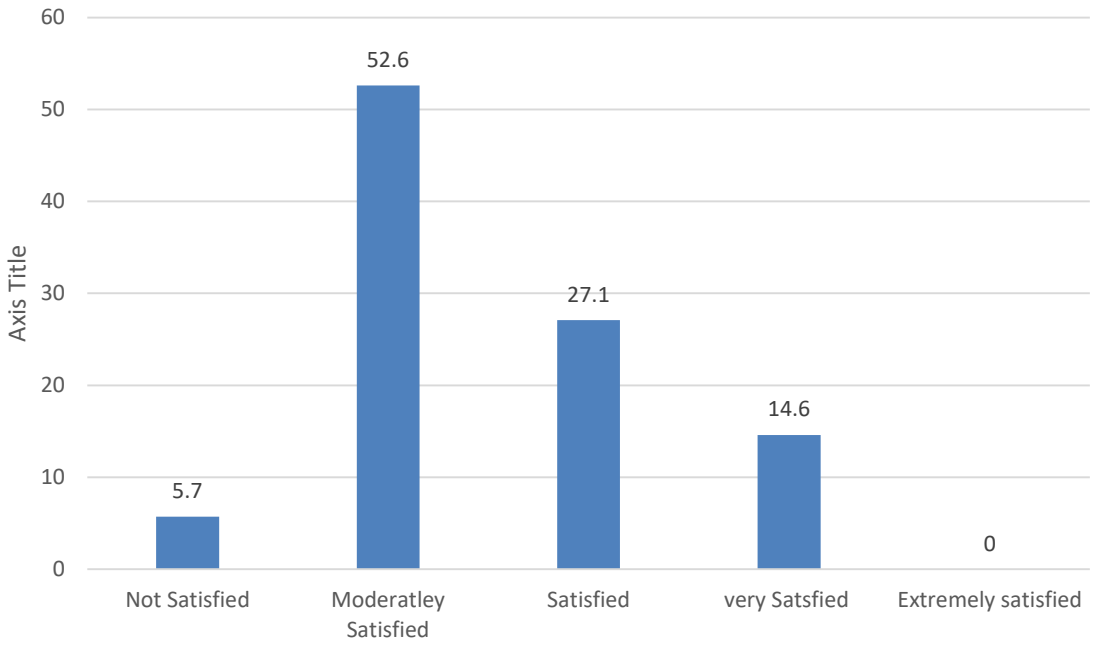

Figure 4.21: Percentage of Q20“Staff are always polite?”

Table 4.33 shows analysis of question No 21 "Easy to find and access the ticket office/station?". That 16 respondents were "Not satisfied", 145 respondents were "Moderately satisfied", 182 respondents were "Satisfied" and 8 respondents were "very satisfied" while 33 respondents were "extremely satisfied".

Table 4.33: Frequency and Percentage of Q21 “Easy to find and access the ticket office/station?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	16	4.2	4.2	4.2
	Moderately satisfied	145	37.8	37.8	41.9
	Satisfied	182	47.4	47.4	89.3
	Very Satisfied	8	2.1	2.1	91.4
	Extremely Satisfied	33	8.6	8.6	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.22 that the 4.2% of respondents were “Not satisfied”, 37.8% were “Moderately satisfied”, 47.4% were “satisfied”, 2.1% were “very satisfied” while 8.6% were “extremely satisfied”.

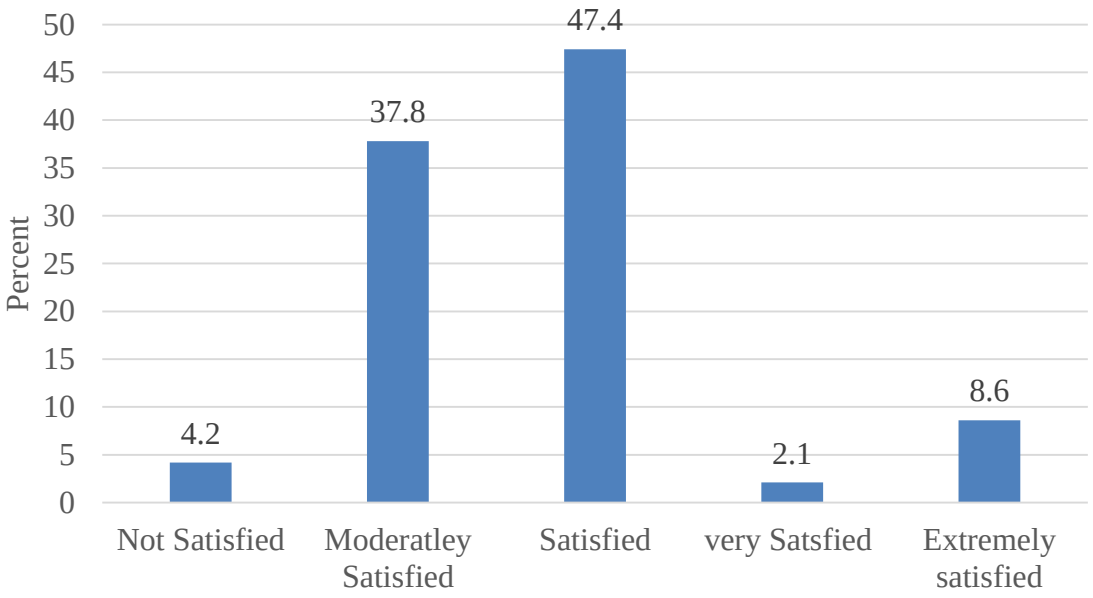

Figure 4.22: Percentage of Q21 “Easy to find and access the ticket office/station?”

Table 4.34 Shows the means of service quality factors related to “Empathy Dimension", and this result shows that commuters were unsatisfied with the factors of service quality while using public bus transportation. Results show that commuters were not satisfied at all for not having a scheduled time table for buses (M= 1.74) were improving this factor commuters and individuals may be encouraged to more use public buses transportation in their travels.

Table 4.34: Mean and Std. deviation of Q18, Q19, Q20, and Q21

	Q18	Q19	Q20	Q21
Mean	2.2656	2.5260	2.5052	2.7318
Std. Deviation	.60655	.70013	.81113	.91602

Table 4.35 shows that T value of the quality service related to "Empathy Dimension" is between -5.738 and -23.726, and P-value = 0.000 which is less than the level of significance $\alpha = 0.05$. Moreover, the sign of T value test is negative, so the items related to

this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

Table 4.35: T value test of Q18, Q19, Q20 and Q21.

One-Sample Test						
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q18	-23.726	383	.000	-.73438	-.7952	-.6735
Q19	-13.266	383	.000	-.47396	-.5442	-.4037
Q20	-11.954	383	.000	-.49479	-.5762	-.4134
Q21	-5.738	383	.000	-.26823	-.3601	-.1763

Table 4.36 shows the Pearson correlation coefficient of validity analysis on each item related to "Empathy dimension". P values shown are less than 0.05 level, therefore the Pearson correlation coefficient of this dimension is significant at the α=0.05. as a conclusion of this dimension, it can be said that the items are valid and consistent to measure what it was set for.

Table 4.36: Correlation coefficient of Q18, Q19, Q20 and Q21

Correlations					
		Q18	Q19	Q20	Q21
Q18	Pearson Correlation	1			
Q19	Pearson Correlation	.322**	1		
Q20	Pearson Correlation	.714**	.487**	1	
Q21	Pearson Correlation	.392**	.701**	.650**	1

**. Correlation is significant at the 0.01 level (2-tailed).

4.2.5 Analysis of questions related to Responsiveness

Table 4.37 shown analysis of question No 22 "Staff provide individualized attention to help customers?" that 37 respondents were "Not satisfied", 214 respondents were "Moderately satisfied", 60 respondents were "Satisfied" and 27 respondents were "very satisfied" while 46 respondents were "extremely satisfied".

Table 4.37: Frequency and Percentage of Q22 “Staff provide individualized attention to help customers?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	37	9.6	9.6	9.6
	Moderately satisfied	214	55.7	55.7	65.4
	Satisfied	60	15.6	15.6	81.0
	Very Satisfied	27	7.0	7.0	88.0
	Extremely Satisfied	46	12.0	12.0	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.23 that the 9.6% of respondents were “Not satisfied”, 55.7% were “Moderately satisfied”, 15.6% were “satisfied”, 7% were “very satisfied” while 12% were “extremely satisfied”.

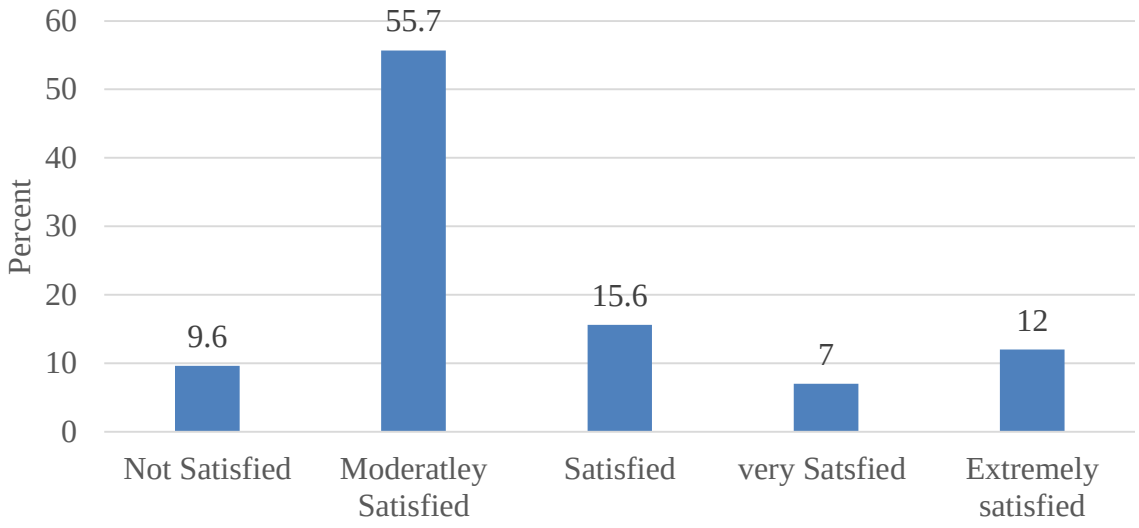

Figure 4.23: Percentage of Q22 “Staff provide individualized attention to help customers?”

Table 4.38 shows analysis of question No 23 "Bus companies provide timely and efficient services?". That 63 respondents were "Not satisfied", 235 respondents were "Moderately satisfied", 50 respondents were "Satisfied" and 29 respondents were "very satisfied" while 7 respondents were "extremely satisfied".

Table 4.38: Frequency and Percentage of Q23 “Bus companies provide timely and efficient services ?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	63	16.4	16.4	16.4
	Moderately satisfied	235	61.2	61.2	77.6
	Satisfied	50	13.0	13.0	90.6
	Very Satisfied	29	7.6	7.6	98.2
	Extremely Satisfied	7	1.8	1.8	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.24 that the 16.4% of respondents were “Not satisfied”, 61.2% were “Moderately satisfied”, 13% were “satisfied”, 7.6% were “very satisfied” while 1.8% were “extremely satisfied”.

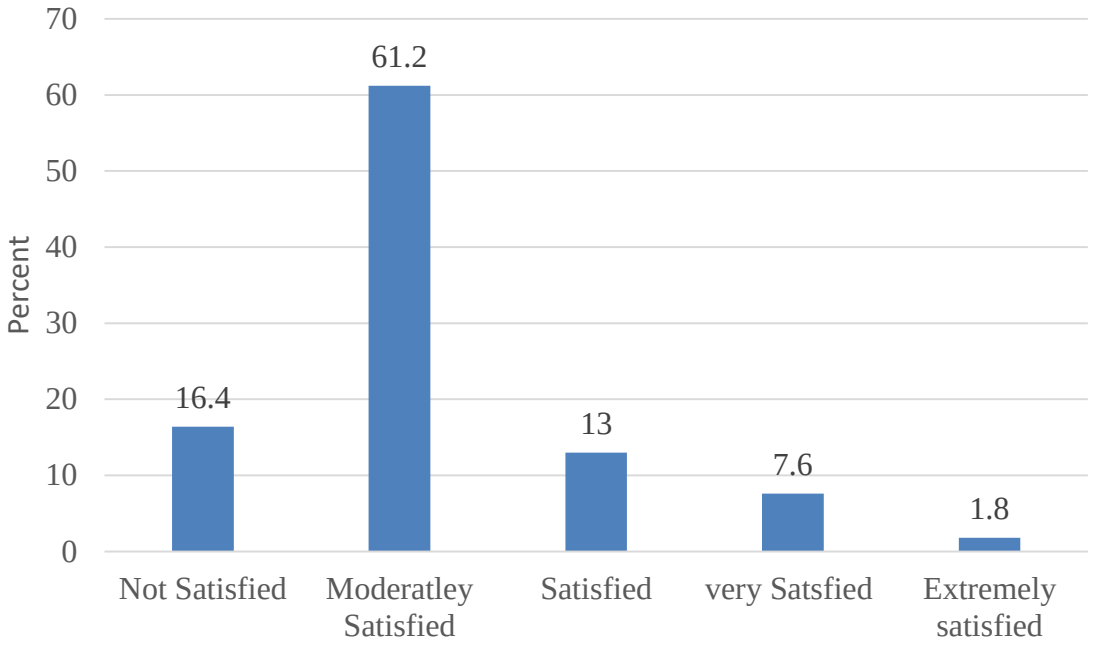

Figure 4.24: Percentage of Q23 “Bus companies provide timely and efficient services ?”

Table 4.39 shows analysis of question No 24 "Communication with staff is clear and helpful that 22 respondents were "Not satisfied", 191 respondents were "Moderately satisfied", 97 respondents were "Satisfied" and 2 respondents were "very satisfied" while 72 respondents were "extremely satisfied".

Table 4.39: Frequency and Percentage of Q24 “Communication with staff is clear and helpful ?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	22	5.7	5.7	5.7
	Moderately satisfied	191	49.7	49.7	55.5
	Satisfied	97	25.3	25.3	80.7
	Very Satisfied	2	.5	.5	81.3
	Extremely Satisfied	72	18.8	18.8	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.25 that the 5.7% of respondents were “Not satisfied”, 49.7% were “Moderately satisfied”, 25.3% were “satisfied”, 0.5% were “very satisfied” while 18.8% were “extremely satisfied”.

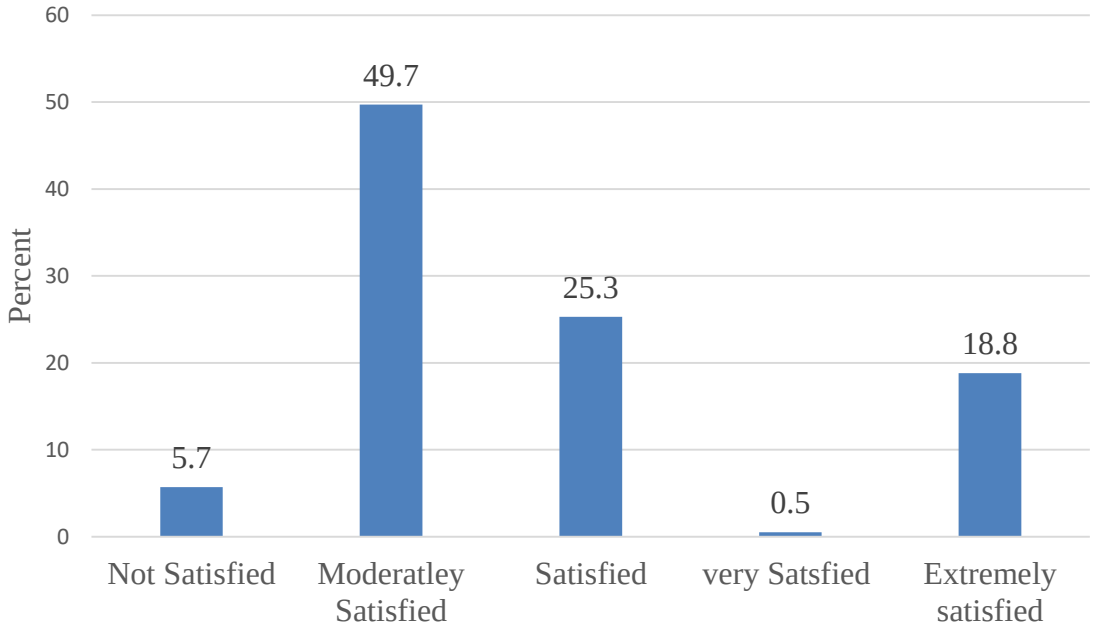

Figure 4.25: Percentage of Q24 “Communication with staff is clear and helpful ?”

Table 4.40 shows analysis of question No 25 "Staff are always willing to help passengers?" that 23 respondents were "Not satisfied", 160 respondents were "Moderately satisfied", 156 respondents were "Satisfied" and 20 respondents were "very satisfied" while 25 respondents were "extremely satisfied".

Table 4.40: Frequency and Percentage of Q25 “Staff are always willing to help passengers?”

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not satisfied	23	6.0	6.0	6.0
	Moderately satisfied	160	41.7	41.7	47.7
	Satisfied	156	40.6	40.6	88.3
	Very Satisfied	20	5.2	5.2	93.5
	Extremely Satisfied	25	6.5	6.5	100.0
	Total	384	100.0	100.0	

As shown in Figure 4.26 that the 6% of respondents were “Not satisfied”, 41.7% were “Moderately satisfied”, 40.6% were “satisfied”, 5.2% were “very satisfied” while 6.5% were “extremely satisfied”.

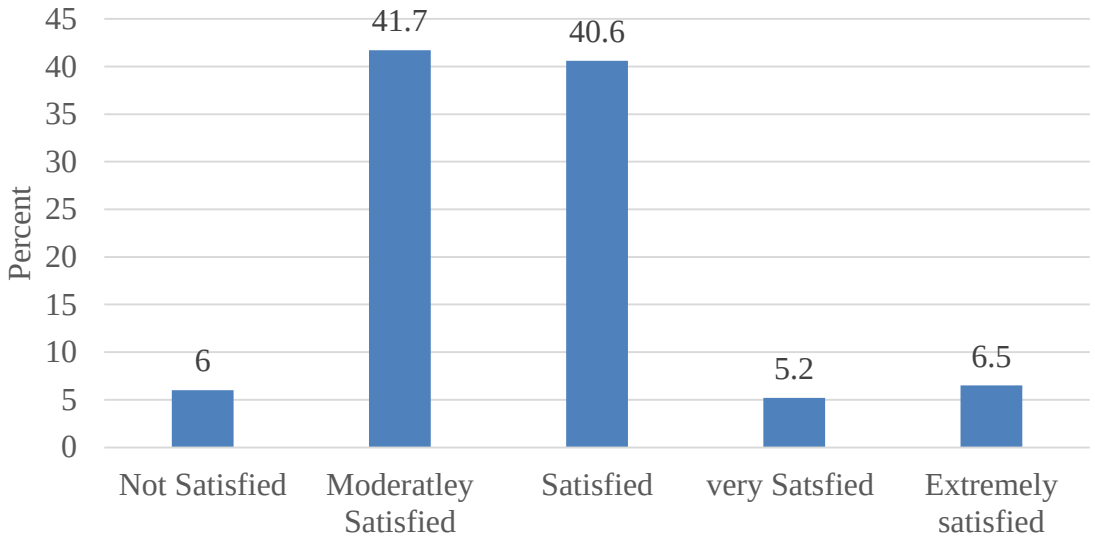

Figure 4.26: Percentage of Q25 “Staff are always willing to help passengers?”

Table 4.41 Shows the means of service quality factors related to "responsiveness dimension", and this result shows that commuters were unsatisfied with the factors of service quality while using public bus transportation. Results show that commuters were mostly not satisfied at all for not provide timely and efficient services (M= 2.1719) were improving this factor commuters and individuals may be encouraged to more use public buses transportation in their travels.

Table 4.41: Mean and Std. deviation of Q22, Q23 Q24, and Q25

	Q22	Q23	Q24	Q25
Mean	2.5599	2.1719	2.7682	2.6458
Std. Deviation	1.14100	.85603	1.19657	.91952

Table 4.42 shows that T value of the quality service related to "Responsiveness Dimension" is between -3.796 and -18.957, and P-value = 0.000 which is less than the level of significance $\alpha = 0.05$. Moreover, the sign of T value test is negative, so the items related to this dimension is significantly less than the M = 3 (mid value of Likert scale). It shows that the respondents are not satisfied with these quality factors.

Table 4.42: T value test of Q22, Q23, Q24 and Q25

One-Sample Test						
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Q22	-7.558	383	.000	-.44010	-.5546	-.3256
Q23	-18.957	383	.000	-.82813	-.9140	-.7422
Q24	-3.796	383	.000	-.23177	-.3518	-.1117
Q25	-7.548	383	.000	-.35417	-.4464	-.2619

Table 4.43 clarifies the correlation coefficient for each item of the “Responsiveness Dimension” and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the items of this field are consistent and valid to be measure what it was set for.

Table 4.43: correlation cofficent of Q22, Q23 Q24 and Q25

Correlations					
		Q22	Q23	Q24	Q25
Q22	Pearson Correlation	1	-	-	-
Q23	Pearson Correlation	.110*	1	-	-
Q24	Pearson Correlation	.749**	.144**	1	-
Q25	Pearson Correlation	.483**	-.108*	.708**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this section, a synopsis of the examination, conclusion, and suggestions of the investigation discoveries as stipulated in the exploration targets are introduced. Discussion and conclusions of the examination discoveries are drawn after those suggestions are made.

The aims of this thesis were built on is to investigate commuters satisfaction on quality service, while using Lebanese public buses transportation. A printed questionnaire was distributed to people to rate their satisfaction on bus stations, buses and an online link to show their satisfaction in using public bus transportation. Correlation, frequency, and Pearson correlation analysis were used to study these relationships.

Starting with finding measures for a central tendency that shows that most respondents were not satisfied with quality service. And that proves that the quality of service in Lebanon buses transportation system is below the expectations of the commuters. The results of correlation analysis recommend 5 factors that have a strong relationship with each other which are arriving on time, scheduled time table, feel safe and timely and effective service. The results shown were some kind predictable since most of the previous research and studies of commuter satisfaction using public buses transportation has reported these quality factors. In Lebanon, public transportation sector shares only 8%of the market while it serving around 40% of total traveling demand. In concurrence with what was found in this study, the conclusion drawn is that the services are not sufficient to satisfy the needs of commuters using public buses transportation in Lebanon.

Security on board is one of the service quality factors that are related to the satisfaction of Lebanese commuters using public bus transportation. several previous studies reveal that feeling unsafe while using public transportation may affect commuters willingness to use public buses transportation.

To summarize, the overall result shows that service quality qualities impacts by and large commuter's satisfaction in using public buses transportation. Service quality might be improved and evaluated by studying single qualities, moreover by studying variables based on several factors. The overall point is to create a marketable, attractive and satisfied mode of public buses transportation.

5.2. Conclusion

The highly increasing number of vehicles in Lebanon is causing numerous traffic jams, increasing the level air pollution, a high number of traffic accidents, high consumption of energy resources and a threat to the quality of life. A solution for all what comes before is moving feasible public transportation plan in the future. Moving to a high-quality service public bus transportation, which satisfies commuters travel demand and attract new commuters.

Commuters satisfaction is strongly influenced by quality factors that need a lot of attention to increase commuter satisfaction. Time, schedule, comfortable, safety and behavior are the crucial factor that is responsible for bringing a higher level of satisfaction.

Taking the point of views of commuters to extract opinion on a subject and to achieve a specific interest is a very effective way to understand commuters need and the best way to satisfy them. A lot of European countries in different cities are already measuring commuters satisfaction. The exertion in investigating is committed to creating a marketable and attractive public transportation.

According to the concluded results from this study, commuters using Lebanese public buses transportation is not satisfied with the services provided. Therefore Lebanese public buses transportation cannot have the same attractiveness as private cars. The authorities especially RPTA should go behind and pay attention to the commuters opinions to improve the public buses transportation sector otherwise commuters attention will go toward using private vehicles. Regular research should be made to evaluate the performance of public buses transportation and to see the satisfaction of commuters on improvements that had been made.

5.3 Recommendation

To improve commuters satisfaction on services provided on public buses transport, service RPTA public buses transport service provider should work hard on improving the services provided. The service quality factors could be improved by:

1- RPTA and public buses service provider could start working on schedule's and organizing public buses according to numbers related to a line or specific time.
2- Increase numbers of buses due to the high demand for travel especially in peak hour, and giving more value to the maintenance to avoid breaking down.
3- When analyzing service quality as a factor level it is showed that staff behavior is so much important. Stuff behavior can be a tool to attract or to fleeing by the commuters. There are several possibilities: Encouraging staff to behave well with commuters by the employ of the month prize.
4- Unite the operational body by cooperation between public and private operators to organize the routes schedules …
5- The ticketing system should be more accessible in terms of location as well as operating hours. To achieve the previous goal, ticketing offices should be placed at strategic points.
6- Following technology evolution by making app`s tracking buses routes, timing and traffic conditions.
7- To understands the needs of commuters a great interaction should be done between potential and present commuters. Regular surveys should be done, to understand commuters complaints. Staff must be familiar with customer comments as well as complaints so that action can be taken.

5.4 Limitation of Thesis

As mentioned above in the previous sections, five dimensions were measured and showed a low impact on commuters satisfaction. The results can be explained as using pencil and paper technique and the low number of respondents. It is recommended to embrace more effective strategies to investigate what variables impact commuters satisfaction judgments by selecting a bigger number of respondents.

Another obstacle was that not all respondents were chosen within the public bus transport stations which come about in a more critical part of respondents using private vehicles as their essential transport mode of choice. A higher expectation will come from these respondents since they have an alternate way to satisfy their travel requests. For future researches, it must focus on daily commuters that use public bus transportation, since the will draw a clear significant picture of services provided in public buses transportation.

This study was done in main bus stations in GBA, with a restricted number of respondents. The result of this consider may in this way not generalize to the voice of Lebanese commuters. Future studies should enroll a better number of respondents in a more extensive zone and more stations in Lebanon.

5.5 Future Research

As a result, this study shows that there are many other components that affect commuters satisfaction. For future researches examing other variables is so important. Brainstorming and in-depth interviews, including a larger number of respondents, can provide assistance to form a measure of more relevant passenger satisfaction.

Encouraging private car users to use public buses transportation. In future studies, very important to study how to convince them to change their way or mode of travel by conducting the investigation that might explore what sort of public buses transportation that suit their requirements.

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APPENDIX

Near East University

Faculty of Civil and Environmental Engineering

Dear Sir/Madam

I am **ALI ELZEIN,** a master student at Near East University in the Turkish Republic of Northern Cyprus, Currently conducting research entitled "**Service Quality and Customer Satisfaction of Using Public Transport in Lebanon**". This study is investigating the customer satisfaction of using public transport in Lebanon. These findings can contribute to improving the public transportation system.

In order to achieve the aim of the study successfully, an empirical work should be carried out in the context of Lebanon using a research questionnaire as a data collection tool. Therefore, your cooperation is required to enable the researcher to obtain adequate and proper data needed for the research. You are kindly requested to complete all sections of the questionnaire. I can also assure you that all the answers and information given will be treated confidentially and anonymity will be maintained. Moreover, it will be **used only to serve the aims of the research.**

I thank you in advance for the time you devoted, the effort you made, and the consideration you gave in filling this questionnaire.

With Great Regards;

ALI ELZEIN

Questionnaire

A study of the Service Quality and Customer Satisfaction of Using Public Transport in Lebanon

Objectives of the research:

- Improving the quality of public bus transport service to address the increasing rate of car ownership.
- To investigate which service quality attributes that have the most influence on customer satisfaction.
- Investigate the structure of service quality in Lebanese `s public bus transport in order to make priority on a quality improvements in the future.

FIRST PART

RESPONDENTS DETAILS

Please fill in the following:

1. Gender :

☐ Male ☐ Female

2. Age:

☐ Less than 18 years ☐ Between 18 and 30 years ☐ Between 31 and 40 years

☐ Between 41 and 50 years ☐ Between 51 and 60 years ☐ Above 60 years

3. Nationality :

☐ Lebanese ☐ Others: ……..

4. Field of work:

☐ Engineering ☐ Medical ☐ Business

☐ Law ☐ Others ……..

5. Experience:

☐ Less than 1 year ☐ 1 - 4 years ☐ 5 - 10 years

☐ More then

6. Academic Degree:

☐ High School ☐ B.Sc. ☐ M.Sc.

☐ Ph.D. ☐ Others ……

SECOND PART

IMPACT RATING

Kindly provide a rating that represents the significance of the factors towards the most effective impact of services on using public transportation.

	Not Satisfied	Moderately Satisfied	Satisfied	Very Satisfied	Extremely Satisfied
Importance Rating Scale	1	2	3	4	5

Reliability

1. The bus always arrives on time.					
2. The bus never breaks down on the road.					
3. Passengers can book tickets easily.					
4. Staff satisfies passengers' request right the first time.					
5. There is a scheduled timetable for buses.					

Assurance

1. Passengers feel safe in their transactions with staff.					
2. Passengers luggage are safe.					
3. Staff are always polite.					
4. Staff have in-depth occupational of their jobs.					
5. The behavior of staff instills confidence in the passengers.					

Tangibles

1. Staff attire is neat and smart.					
2. Bus companies have a professional appearance.					
3. Bus companies have adequate shed for passengers.					
4. Bus companies have spacious seats for passengers on board.					
5. The ticket office is attractive and neat.					
6. Buses are well maintained and neat.					
7. Buses have ample legroom and foot space.					

Empathy

1. Bus companies have passengers interest at heart.					
2. Bus companies convenient operating hours.					
3. Staff are always polite.					
4. Easy to find and access the ticket office/station					

Responsiveness

1. Staff provides individualized attention to help customers.					
2. Bus companies provide timely and efficient services					
3. Communication with staff is clear and helpful.					
4. Staff are always willing to help passengers.					

THANK YOU FOR YOUR TIME