

Service Quality (SQ) and its Impact on Passenger Satisfaction in Sri Lanka Railway Transport Service (SLRTS); Special Reference to Anuradhapura Railway Station

G.S.A. Chandrakumara

ABSTRACT

Service Quality of any service establishment is an immensely important factor of measuring the Customer satisfaction. Enhancing customer satisfaction in service sector is quite difficult since the specificity of different services. Customer satisfaction in the transport service in Sri Lanka especially in the railway service is significant to discuss. Because if the SQ of SLRTS is increased, its productivity, profitability would increase while getting satisfied passengers. The major problem of the SLRTS is lack of profitability because; it regularly earns large financial losses proved by, (Ministry of Internal Transport, 2015) . The main purpose of this study was to identify the nature of SQ delivered and its impact on passenger satisfaction in SLRT service. SQ factors were considered as independent variables and passenger satisfaction was considered as the dependent variable in this study. The SERVQUAL model including five dimensions; tangibility, reliability, responsiveness, empathy and assurance were used to measure the passenger satisfaction regarding the services provided by the SRTS. The sample was selected based on non-probabilistic and convenience sampling method and 100 passengers were selected for the sample. Both primary and secondary data were used for the study and Questionnaire method was administrated to gather primary data. The data was analyzed using the SPSS version 16.0. Uni-variate analysis, bi-variate and multi variate analysis were used to analysis the data. Results indicated that the passengers had a moderate level of satisfaction regarding the overall services provided by the rail way transport service in Sri Lanka. But when considering the SQ dimensions separately, the results showed that all SQ dimensions were significantly and positively correlated with customer satisfaction. When multiple regression analysis used to determine the mostly significant SQ factor it was showed, reliability and assurance of the services provided by the SLRTS are significant to satisfy the passengers while tangibility, responsiveness and empathy are less significant. Researcher recommended; to arrange railway stations in a tidy manner with proper maintenance of garbage bins, increase the porter service and modern equipment to issue tickets on the perspective of tangibility. Promote maintains of relevant information regarding the service maintain it properly.

KEYWORDS: *Customer Satisfaction, Service, Quality, Railway Transport Service*

Introduction

In the business world, all the organizations are campaigning with specific goals and objectives and the ultimate objective is to achieve them in an effective and efficient manner. All organizations are keen on delivering any kind of product or service to the people who are making demands for them. The people who are showing demands for the goods and services available in the market are considering as the customers. Therefore, customers are one of the most important stake holders of any organization. To achieve pre-established goals and objectives, an organization should retain its potential customers and attract new customers (Kotler & Keller, 2014). Also, Robeiro M. in 1993 says that if any organization needs to retain its customers further, the customers' expectations should be satisfied by delivering maximum value. Customer satisfaction is used as the key parameters of measuring the overall performance of an organization, since consumers are evaluating the actual performance of products with its expected performance, and accordingly behave at the market.

Robeiro M. in 1993 describes that quality as the major competitive advantage in modern economies. In general, over the past few years, the service sector has become the dominant element in many economies, specially in industrialized countries. It was justified by previous research findings and accordingly, "service sector accounted for more than 50 percent of gross domestic product" (Gupta, McDaniel, & Herath, 2005, p. 389). As per recent information, Sri Lankan economy is also giving higher attention to service sector. The service sector contribution to the GDP in 2012 was 58.5% while 30.4% from manufacturing industry and 11.1% from agriculture sector. (Central Bank Sri Lanka Annual Report, 2012). In 2013, the service sector contribution to the GDP in was 58.1% while 31.1% from manufacturing industry and 10.8% from agriculture. (Central Bank Sri Lanka Annual Report, 2013). In 2014, the service sector contribution to the GDP was 57.6% while 32.3% from manufacturing industry and 10.1% from agriculture. (Central Bank Sri Lanka, 2014). Service sector has realized that quality of the service as the major source of acquiring competitive advantages as well as the key element of being successful in the market. Recently, most of the service establishments have put their maximum effort to provide quality services focusing the customer needs and wants. According to the literature there are five major characteristics of services are; perishability, intangibility, variability, inseparability and non-ownership (Parasuraman, Zeithmal, & Berry, 1985). So, giving careful attention on maintain SQ is significant for the purpose of determining the customer satisfaction and intern the customer loyalty as the ultimate end. Recently, most of the service establishments have put their maximum effort to provide quality services focusing the customer needs and wants since they have realized that quality of the service as the major source of acquiring competitive advantages as well as the key element of being successful in the market.

Research Problem

Customer satisfaction is a very important determinant to measure the organizational performance and accordingly, SQ factors can be used to judge the level of satisfaction in service establishments. If any service provider keen on delivering high quality service, definitely customers may demonstrate a higher satisfaction (Gupta, McDaniel, & Herath, 2005, p. 395). But satisfying customers and measuring their level of satisfaction in service sector is quite difficult since the specificity exist in the sector. So, measuring customer satisfaction in the transport service in Sri Lanka especially in the railway service sector is a significant to discuss. The major problem of the SLRTS is lack of profitability because; it regularly earns large financial losses (Ministry of Internal Transport, 2015) as indicated by Figure-1.

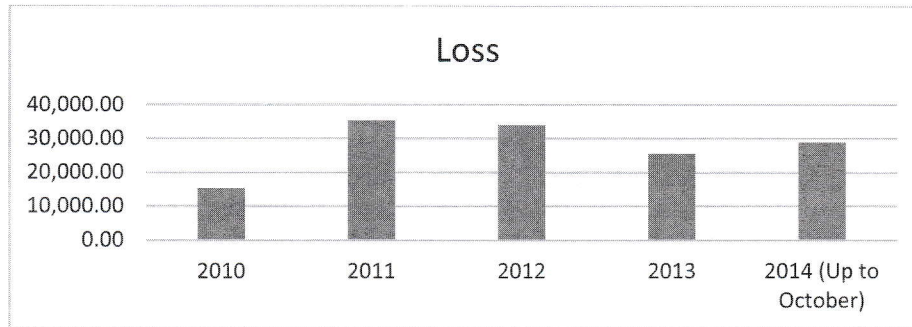


Figure1: Railway Losses in rupees(Source: Ministry of Internal Transport, 2015)

In addition to the financial stability, level of the delivering service is an issue in this industry due to the lack of an efficient rail road network to cover the Colombo city and its suburban areas a majority of people rely on bus transport services. SLR service is still operating manually and that caused to generate passenger dissatisfaction and they are shifting to travel by roads. Therefore, congestion is in the roads during peak hours. Even though a considerable number of passengers are utilizing the railway service increasingly and SLR is running at a loss (Halpita, Sivadarshani, & Thelijjagoda, 2011). Also, many accidents are common in the railway tracks due to outdated signaling system, weak rail tracks and out dated rolling stocks evidence by; Polgahawela level crossing collision on 26th April 2005, The Alawwa road accident on 17th September 2011 (Ministry of Internal Transport, 2015). The key contributions in passenger transport are made up of buses 68%, privet vehicles 24% and railways in third place accounting for 5% of passenger trips. Although railway system provides many benefits to the society, it is still facing many problems. Due to the failures of determining the passengers' expectations, the SLR is unable to be a reliable and sustainable transport mode and to compete with other transport modes (Kumarage, 2004).

To identify further the reality the issues, researcher conducted a pilot survey using a sample of 10 passengers at Anuradhapura railway station considering service at different service points; in train, ticketing counter and plat form. The results showed the 60% dissatisfaction regarding the railway service as a whole. When considering the factors separately, showed their dissatisfaction as; 60% about the services at ticketing counter, 80% about the cleanliness of platforms, 100% about the assurance at platforms, and 100% about sanitary facilities. 90% regarding the travel frequency of trains/ staff appearance and staff's level of supporting to the passengers., 80% regarding availability of staff as well as food and water. Accordingly, conducting a study to explore the level of SQ and its impact on passenger satisfaction in the SLR service is timely important.

Research Objectives

The primary objective of this research is to identify the relationship between the delivered SQ and passengers' satisfaction of SLRS. In addition to that, this is aimed to identify the level of SQ and level of passenger satisfaction, identify the relationship between SQ and customer satisfaction in railway transport service, identify the influencing factors of SQ which determine the customer satisfaction, and identify most influencing factor of SQ which determines the customer satisfaction in SLRS.

Literature Review

Service Quality and Customer Satisfaction

“Satisfaction is a person’s feelings of pleasure or disappointment that result from comparing a product’s perceived performance (or outcome) to expectations.” (Kotler & Keller, 2014). “Juran (1998) argues that customer satisfaction is a state of mind where the customers think that the product features are compatible with their personal expectations” cited by (Esmaeili, Manesh, & Golshan, 2013, p. 348). “The major objective of increasing the quality of services is to meet customer needs and expectations”(Choocharukul & Sriroongvikarai, 2013, p. 1). To achieve a high level of customer satisfaction, most researchers suggest that a high level of SQ should be delivered by the service provider as SQ is normally considered an antecedent of customer satisfaction. As Improves the probability of customer satisfaction increases. As well as when organizations enhance the quality of their services, customers’ favorable behavioral intentions are increased while unfavorable intentions are decreased simultaneously. (Pratminingsih, Rudatin , & Suhardi, 2013, p. 623). Availability of transit service, service monitoring, travel time, safety and security, maintenance and construction activity on passenger trips are the dimensions of SQ according to TCRP Report 88 (Cited by

Geethika, 2010). Reliability, Assurance, Empathy, Tangibles, Responsiveness are mostly accepted SQ dimensions (Vanniarajan and Stephen (Cited by Geethika, 2010, Kotler and Keller, 2014, Maruvada, 2010). According to Kaseem, Kerkit, in 2013, Access facility, Ticketing service, Waiting time on platforms, Comfort and safety inside stations and trains are important dimensions. Nathanail E., 2007 Itinerary accuracy, System safety, Cleanness, Passenger comfort, Servicing, Passenger information. Asthiti, 2009 reveals on time trains, managing crowding, fast, accurate, useful information, secure and safe travel, Clean trains and stations, Fast ticket sales, Quick and fair complaints handling are as some of the dimensions. Maxwell K. Hsu, 2009 reveals Tangibility, Responsiveness, Reliability, Knowledge and Accessibility as same. Anderson, (2013) shows that Availability, Accessibility, Information, Time, Customer care, Comfort, Security also as dimensions of SQ in this service sector.

(Parasuraman, Zeithmal, & Berry, 1985, p. 42) say that knowledge about goods' quality is not enough to understand the quality of a service. To understand the quality of the services there should have a proper knowledge about characteristics of services. Such as intangibility, heterogeneity and inseparability. According to (Parasuraman, Zeithmal, & Berry, 1985, p. 42) it is difficult to measure service quality rather than the quality of a product. There are several dimensions analyzed by different researchers and authors to measure the service quality. The dominant dimensions of service quality will include: "Tangibility," "Responsiveness," "Reliability", "Knowledge", and "Accessibility". (Maxwell K. Hsu, 2006, p. 109). Parasuman, Zeithmal & Berry has identified several determinants of service quality such as, Access, Communication, Competence, Credibility, Reliability, Responsiveness, security, Tangible and Understanding/ knowing the customer. The SERVQUAL approach is the most common method for measuring service quality. (Maruvada & Bellamkonda, 2010, p. 479). According to Parasuman, Zeithmal and Berry SERVQUAL is an instrument with 22 items and it is included in five service dimensions of tangibles, reliability, responsiveness, assurance, and empathy. Later, Parasuman, Zeithmal and Berry have summarized those dimensions in to five categories. They are reliability (Ability to perform the promised service dependably and accurately.), responsiveness (Willingness to help customers and provide prompt service.), assurance (Knowledge and courtesy of employees and their ability to inspire trust and confidence), empathy (Caring, Individualized attention the firm provides its customers.) and tangibles (Physical facilities, equipment and appearance of personnel).

The figure 2 shows the relationship between service quality and customer satisfaction.

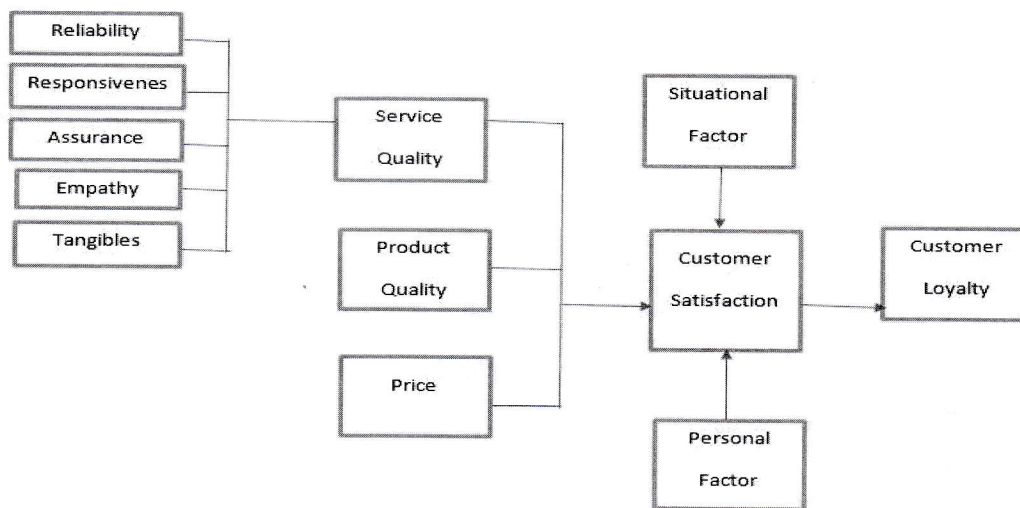


Figure 2: The Relationship between Service Quality and Customer Satisfaction. (Source: Parasuraman, Zeithmal, & Berry, 1985, p. 48)

SQ in Railway Transport Service in Sri Lanka

Central bank annual reports 2012 – 2014, describe that, “The issues such as late arrivals at destinations, overcrowded compartments, and a low degree of safety and comfort are some of the pertinent problems faced by an average train travelers”. Sri Lanka Railway service is done manually. Most of the passengers are not satisfied with the services rendered by the present public railway transportation system and they are compelled to travel by roads which result in congestion during peak hours. Although the number of passengers using the railway is increasing, and the quantity of goods transported by the railway is becoming higher year by year, government railway seems to be running at a loss” (Halpita, Sivadarshani, &

Thelijjagoda, 2011). Railway department information reveals that “In the late 20th century, the railway started to decline. For three decades, it suffered from neglect and poor treatment. By this time, the Sri Lankan economy was focused more on industries than plantation agriculture. The road network also grew. With the growth of Lorries and highways, which were a faster means of transporting goods, the amount of goods transported by the railways declined. The railways became an enterprise generating a heavy loss. During this time, SLR failed to keep up with technological innovations seen in other railways abroad. Issues of travel time, reliability, and comfort caused it to lose much of its market share of passenger transport. By 2011, its share of the market was only seven percent” “In the early 2010s, the government launched a 10-year Railway Development Strategy to bring the railway back to satisfactory condition. Most of the researchers have recommended that the SERVQUAL model is a good scale to use when measuring service quality in various specific industries but that it is appropriate to choose the most important dimensions of this model that fit to that particular service being measured in order to assure reliable and valid results. On the basis of the above discussion and through literature review the following hypotheses were developed.

- H₁: Tangibility of railway transport service has significant impact on passenger satisfaction
- H₂: Reliability of the service has significant impact on passenger satisfaction
- H₃: Responsiveness of the service has significant impact on passenger satisfaction
- H₄: Empathy of the service has significant impact on passenger satisfaction
- H₅: Assurance of service has significant impact on passenger satisfaction
- H₆: passenger satisfaction is mostly influenced by service tangibility than other SQ factors.

Conceptual model exhibit by figure- 2 was developed for the study based on the SERVQUAL Model according to Parasuraman (1998).

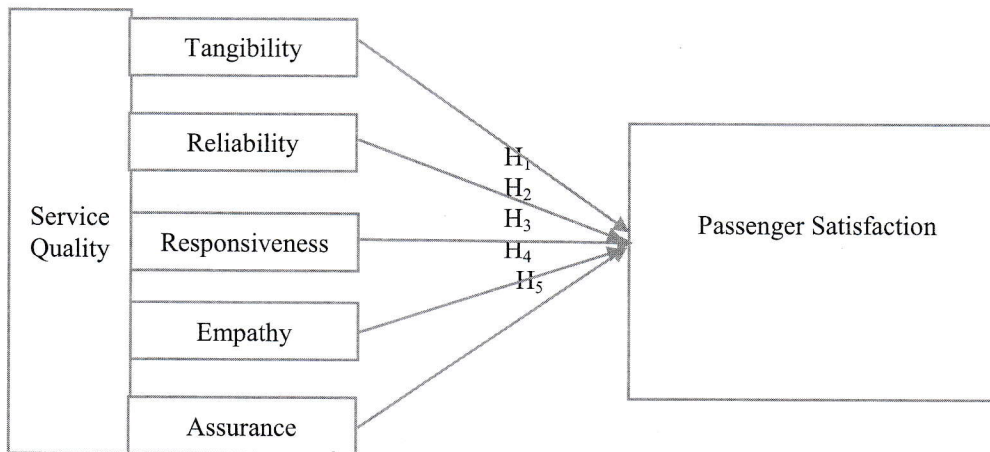


Figure 3-Conceptual Model

Methodology

The objective of this research was to identify the SQ and its impact on passenger satisfaction towards the railway transport service in Sri Lanka. Applied the deductive approach is to be applied because researcher establishes the relationship between dependent and independent variables through the reviewed of literature. Five independent variables were considered to measure the SQ of rail way transport service and the passenger satisfaction has been identified as the dependent variable. Therefore, this study was a correlation study and conducted at natural setting. This study is analytical and cross sectional in nature due to the fact that data for this study were collected just once.

Population of this study was all Sri Lankan rail way passengers. According to the records at ticketing counters in Anuradhapura railway station, in between 500-800 passengers are normally travelling per a day and thus sample was comprised to 100 train passengers limiting geographically to the Anuradhapura railway station which was non probabilistic and convenience sampling.-Unit of analysis was at individual level passenger. Although the sample was selected based on Anuradhapura railway station, sample was included passengers from different railway stations such as Polgahawela, Maradana, Weyangoda, Gampaha, Kurunegala, Mahawa, Galgamuwa, Wavniya etc..

Both primary and secondary data were utilized for the study. Various secondary data such as research articles, government publications, web sites, internet etc. was utilized to obtain theoretical knowledge and procedures adopted by the railway service. Structured questionnaire was administered to collect primary data with possible changes considering Sri Lankan railway service and customer behavior and translated to Sinhala language. Pilot survey was administered to test the reliability of the questionnaire and according to the calculated value of α for each SQ dimensions was recorded above 0.700 which is acceptable according to Sekaran U, (2003). Questionnaire was consist with three parts; part A; background information of the respondents, part B; level of SQ of the railway transport service on the SERVAQUAL model including five dimensions; tangibility, reliability, responsiveness, empathy and assurance separately for the major service points; ticketing counters, platforms and while travelling on trains. Totality of 64 questions was developed in line with 5 points Likert scaling to measure the level of SQ in railway transport service in Sri Lanka. Part "C" was allotted to measure the level of passenger satisfaction regarding the services delivered by SLRTS. There were 8 questions to measure the passenger satisfaction based on the Likert scaling. Hypotheses were tested using and the descriptive statistics, regression and correlation analysis. Also, researcher has developed the continuum, (1 - 2.33; unsatisfied, 2.33 - 3.67; average, 3.67 - 5; satisfied) to analyze the mean responses. Uni-variate analysis, bi-variate and multi variate analysis were used to analysis the data using SPSS 16.0.

Results And Discussions

Sample Profile

When considering the age level, most of the respondents (49%) were below 30 years, very small amount recorded as above 60 years age (07%), and 44% amount were in between year 30- 60. Majority of them were (57%) male. When consider the level of education 44% passengers were A/L passed. Travelling purpose of them were other purposes such as religious purposes, private journey other than studies or work place. Also, most of the respondents travelled in 3rd class compartments and had learned up to A/L.

Goodness of the Data

Sekaran U, (2003) reveals that the most popular test of interim consistency reliability is the Cronbach's coefficient alpha, which is used for multipoint-scaled items. According to Table 1, Cronbach's alpha coefficient for all the variables have shown acceptable level (above 7.00) excluding passenger satisfaction ($\alpha = 0.645$ which is closer to 7.00) and it is even not consider as the poor level. Therefore, internal consistency was established.

Table 1: Reliability (Alpha) Values of the Primary Data

Variable	Alpha Value	No. of Items
Tangibility	0.855	18
Reliability	0.853	09
Responsiveness	0.818	06
Empathy	0.903	11
Assurance	0.819	20
Passenger Satisfaction	0.645	03

Source: Survey Data, 2015

Descriptive Statistics on Service Quality

The descriptive statistics on the SQ factors; tangibility, reliability, responsiveness, empathy and assurance have been tested and measured statistically considering mainly the mean and SD. According to the results it was revealed in table 2, operation level of the tangibility of service was moderate since the mean was 2.64 and when consider the SD, the results can be distributed in between 3.17 - 2.10 (2.636 ± 0.533). That means most of the respondents were moderately satisfied about the physical facilities, equipment and personnel appearance of the rail way service in Sri Lanka. As well as the mean of service reliability was 2.82 and according to the continuum the mean value is closer to average level. Therefore, the passengers have shown an average level of satisfaction regarding the ability of performing promised service dependably and accurately by the Sri Lankan railways. Further, when considering the SD, the results can be distributed in the range between 3.55 - 2.08. The results as per table 2, the mean of the responsiveness was 2.42 and it is

closer to the level of dissatisfaction. Therefore, it was revealed that passengers were dissatisfied about the reliability of the service rendered. Also, the results can be varied in between 3.12 - 1.72 when considering the SD. Mean of the empathy was 2.43 and that is closer to dissatisfaction level. Therefore, the passengers are not satisfied about the empathy provided. Anyhow, results can be distributed in the range between 3.12 - 1.72 with SD. The mean of the assurance is 2.70 and that is closer to average level. Therefore, the passengers are averagely satisfied regarding the SLRTS such as knowledge and courtesy of railway employees and their ability to inspire trust and confidence etc. the results can be distributed in the range between 3.29 - 2.12 with SD. According to the results the mean of the Passenger Satisfaction was 2.75 and that was closer to average level. When considering the SD, the results can be distributed in the range between 3.44 - 2.06.

Table 2: Descriptive Statistics on service quality and Passenger satisfaction

Service factors	N	Min	Max	Mean	SD
Tangibility (Tan)	100	1.17	4.22	2.64	0.53
Reliability (Rel)	100	1.00	4.78	2.82	0.74
Responsiveness (Res)	100	1.00	4.33	2.42	0.70
Empathy (Emp)	100	1.00	4.64	2.43	0.70
Assurance (Ass)	100	1.00	4.05	2.70	0.59
Passenger Satisfaction (PS)	100	1.00	5.00	2.75	0.69

Source: Survey Data, 2015

Through the table 3 exhibit below; three service points; ticketing counter, platform and train compartments has considered in details to discuss the service quality in Sri Lankan Railways. Accordingly, most of the service factors are operate in moderate level in all the service point- ticketing counter, platform and train compartments (Tan+ Rel+Res+Ass+ Emp) excluding the operation of responsiveness and empathy in the service point; train compartments. Even though the most service factors are operate at moderate level they are closer to the level of poor since the statistics (mean) highly closer to 2.33 as per continuum developed excluding tangibility in the ticketing counter. Finally, results reveals that the passengers in SLRTS are neither satisfied nor dissatisfied about the services delivered at all three service points in railway system.

Table3: Mean Values for Major Service Points

Service points	Tan	Rel	Res	Emp	Ass	PS
Ticketing Counter	3.09	2.86	2.65	2.56	2.92	2.86
Platform	2.65	3.21	2.37	2.40	2.60	2.81
Train Compartments	2.49	2.47	2.25	2.32	2.69	2.57

Source: Survey Data, 2015

Testing Hypotheses

- H₁: Pearson correlation coefficient(r) between the two variables; tangibility and passenger satisfaction was 0.552 at level of significance is 0.05.
- H₂: There is a significant positive relationship between reliability and the passenger satisfaction and it is significant at level of 0.05. (r= 0.556)
- H₃: There is a positive correlation coefficient between the responsiveness and passenger satisfaction and it is significant (r = 0.578).
- H₄: There is a, positive correlation coefficient between the empathy and the passenger satisfaction and it is significant.(r= 0.691)
- H₅: There is a positive relationship between assurance and the passenger satisfaction (Table 4). and it is significant. (r= 0.660)

Therefore, it is indicated that there is a significant relationship between all independent variables with the dependent variable as per the statistical values exhibit in the table 4.

Table 4: Relationship between SQ factors and passenger satisfaction

Hypotheses	Relationship	Pearson Correlation (r)	Sig	Result
H ₁	Tangibility and passenger satisfaction	0.552**	0.000	Accept
H ₂	Reliability and passenger satisfaction	0.556**	0.000	Accept
H ₃	Responsiveness and passenger satisfaction	0.578**	0.000	Accept
H ₄	Empathy and passenger satisfaction	0.691**	0.000	Accept
H ₅	Assurance and passenger satisfaction	0.660**	0.000	Accept
H ₆	Tangibility as the mostly influencing factor to passenger satisfaction			Reject

** . Correlation is significant at the 0.01 level (2-tailed). N= 100

Source: Survey Data, 2015

Model Summary of Service Quality

In the model summary table (Table 5) the R value is 0.744. The meaning of that is 74.4% of the service quality dimensions affect to the passenger satisfaction. And also the table shows that R² value as 0.554 and the meaning of that is 55.4% of the variation in the passenger satisfaction is explained through the service quality.

Table 5: Model Summary of Service Quality

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744 ^a	.554	.530	.47316

a. Predictors: (Constant), Assurance, Tangibility, Reliability, Empathy, Responsiveness

7.6 Multiple Regression Analysis

The coefficient in table 6 shows that the β value is 0.119 for tangibility, 0.058 for reliability, (- 0.050) for responsiveness, 0.419 for empathy and 0.296 for assurance. The meaning of that values is if the passenger satisfaction is increased by 1; 0.119 tangibility variable, 0.058 from reliability variable, -0.050 from responsiveness variable, 0.419 from empathy variable and 0.296 of assurance variable may affect to that change. It , further reveals that empathy has the greater impact on passenger satisfaction as it was very closer to the significant level (0.00) and it has the highest β value as shown in the table 6. (0.419). Assurance is the next mostly affected factor as it was closer the significant level rather than tangibility, reliability and responsiveness and it has impact of 0.296 on the passenger satisfaction.

Table 6: multiple regression statistics on SQ

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.368	.260		1.417	.160
Tangibility	.154	.134	.119	1.146	.255
Reliability	.054	.100	.058	.542	.589
Responsiveness	-.050	.120	-.050	-.411	.682
Empathy	.412	.117	.419	3.519	.001
Assurance	.348	.120	.296	2.888	.005

a. Dependent Variable: Satisfaction

Source: Survey Data, 2015

The table 7 shows that the F- test (23.31) with significance of 0.000. That shows the probability of these results occurred by chance was less than 0.05. Therefore, the significant relationship between SQ and the passenger satisfaction has been demonstrated.

Table 7- ANOVA - Service Quality

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.093	5	5.219	23.31	.000 ^a
	Residual	21.045	94	.224		
	Total	47.138	99			

b. Dependent Variable: Satisfaction

Source: Survey Data, 2015

Conclusions and Recommendations

The primary objective of this research is to identify the impact of SQ on passengers' satisfaction of SLR service based on Anuradhapura Service station. Accordingly, passenger satisfaction was discussed focusing five SQ main variables; tangibility, reliability, responsiveness, empathy and assurance. At this discussion each factor was concluded in terms of three service points namely; ticketing counter, platform and trains.

Tangibility

According to the results passengers were moderately satisfied about the physical facilities, equipment and personnel appearance etc. The results also indicate that the passengers were moderately satisfied about the tangibility of the services at the ticketing counter, platform and passengers were dissatisfied about the tangibility of the services in trains. Thus, it is possible to state that the passengers were moderately satisfied about the tangibility of the services in SLRT service as a whole. When analyzing deeply about the tangibility of the services separately for each major service points, it reveals that the passengers have a good perception regarding the tangibility services at the ticketing counters rather than platforms and trains. Accordingly, management should give prominent attention to enhance the tangibility aspect in train rather than other service points. Thus it was suggested to arrange railway stations in a tidy manner with proper maintenance of garbage bins, increase the porter service and modern equipment to issue tickets on the perspective of tangibility.

Reliability

Results reveal that passengers show a moderate level of satisfaction regarding the reliability of the services provided by SLRTS as a whole. Results indicate that the reliability of the services at the ticketing counter and platform is in moderate level satisfaction while it was dissatisfied in trains. When analyzing deeply about the reliability of the services separately for each major service points, platform has the greatest mean value; 3.21 and it reveals that the passengers have a good perception regarding the reliability of the services at the platform rather than other service points. Therefore, management should consider more about other two service points; ticketing counter and platform to deliver a more reliable service. Accordingly, it was suggested to promote to maintain of relevant information regarding the service.

Responsiveness

Passengers were dissatisfied about the responsiveness of the services of SLRT service as a whole. When consider the responsiveness of different service points, passengers were moderately satisfied with the services at ticketing counter, dissatisfied at the platform and in trains. When analyzing deeply about the responsiveness of the services separately for each major service points, the services at the ticketing counter have shown a good perception of the services rather than other service points. Thus, all authorized party should give more attention on the responsiveness in other service points; train and platform more than the existing level.

Empathy

According to the results, passengers were dissatisfied about the empathy of the services of SLRTS as a whole. When consider passengers satisfaction on empathy in different service points it reveals that they were moderately satisfied at ticketing counter, dissatisfied at the platform and the services in trains. When

analyzing deeply about the empathy of the services separately for each major service points, the services at the ticketing counter has the greatest mean value; 2.556 and it reveals that the passengers have a good perception regarding the empathy of the services at the ticketing counter rather than other service points. Since that it is the responsibility to of the management to care the service at other two service points to strengthen the service empathy.

Assurance

Considering the analysis it is possible to mention that passengers were moderately satisfied about the assurance of the services in the railway transport service in Sri Lanka as a whole. Further , it was indicates the passengers were observing moderate level of satisfaction about the assurance of the services in trains. Also , the services at the ticketing counter shown a good perception regarding the assurance rather than other service points. Therefore, management should given further attention on the assurance of the service in other two service points to get the maximum passenger satisfaction towards their overall service.

Service Quality and Passenger Satisfaction

Ultimately, statistical analysis reveals that passengers have moderate level of satisfaction about the quality of the services provided by railway transport service in Sri Lanka. As per the discussion had there is a significant relationship between SQ and passenger satisfaction in SLRT service. Among the SQ variables three variables; tangibility, reliability and assurance are in moderate level while two variable; responsiveness, empathy are in a poor level. Also, empathy is the mostly influencing factor to determining the passenger satisfaction than others. According to the results, passengers were moderately satisfied about Tangibility and Reliability, and assurance offered by SLRT service. Passengers were dissatisfied about the Responsiveness and Empathy. Empathy has the greatest impact on passenger satisfaction while responsiveness has the lowest impact. Finally, as a whole passengers were moderately satisfied about the services provided by the SLRT service in Sri Lanka

References

- AGBOR, J. M. (2011). *The Relationship between Customer Satisfaction and Service Quality: a study of three Service sectors in Umeå*. Umeå.
- Anderson, R., Condry, B., Findlay, N., Brage-Ardao, R., & Li, H. (2013). *Measuring and Valuing Convenience and Service Quality - A review of global practices and challenges from the public transport sector*. *International Transport Forum*, p.10.
- Gupta, A., McDaniel, J. C., & Herath, S. (2005). *Quality management in service firms: sustaining structures of total quality service*. *An International Journal*, pp.389-395.
- Maruvada, D. P., & Bellamkonda, R. S. (2010). *Analyzing the Passenger Service Quality of the Indian Railways using Railqual: Examining the Applicability of Fuzzy Logic*. *International Journal of Innovation, Management and Technology*, Vol. 1, No. 5,479.
- Maxwell K. Hsu, F. O. (2006). (2006), "A typology analysis of service quality, customer satisfaction and behavioral intentions in mass services. *Managing Service Quality: An International Journal*, Vol. 16, 109.
- Central Bank Sri Lanka. (2014). *Annual report*. Colombo: Central Bank Sri Lanka.
- Central Bank Sri Lanka Annual Report. (2013). *Annual Report*. Colombo: Central Bank Sri Lanka.
- Central Bank Sri Lanka, A. (2012). *Annual Report*. Colombo: Central Bank of Sri Lanka.
- Choocharukul, K., & Sriroongvikarai, K. (2013). *Multivariate Analysis of Customer Satisfaction: A Case Study of Bangkok's Mass Rapid Transit (MRT) Passengers*. *Eastern Asia Society for Transportation Studies*, Vol.9, 1.
- Geetika, & Nandan, S. (2010). *Determinants of Customer Satisfaction on service Quality: A Study of*

Railway Platforms in India. *Journal of Public Transportation*, Vol. 13, No.1, pp.97-101.

Halpita, Sivadarshani, A., & Thelijjagoda, S. (2011). An exploratory study on how technology makes changes in railway transportation in Sri Lanka. Malabe: Sri Lanka Institute of Information Technology.

Kotler, P., & Keller, K. L. (14th edition). *Marketing Management*. New Jersey: Prentice Hall, One Lake Street, Upper Saddle River, New Jersey.

Kumara, A. S. (2004). *Regulatory Impediments in the land Transport Sector in Sri Lanka*. Colombo: Sri Lanka Institute of Information Technology.

Maskeliūnaite, L., Sivilevičius, H., & Podvezko, V. (2015). *Research on the quality of passenger transportation by railway*. Taylor & Francis, 101.

Ministry of Internal Transport. (2015, June 08). Sri Lanka Railways- Wikipedia the free encyclopedia. Retrieved from www.railway.gov.lk: https://en.m.wikipedia.org/wiki/Sri_Lanka_Railways

Nathanail, E. (n.d.). *Measuring the quality of service for passengers on the hellenic railways*. Greece.

Parasuraman, A., Zeithmal, V. A., & Berry, L. L. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing* Vol. 49, pp .42-48.

Pratminingsih, S., Rudatin, C. L., & Suhardi, A. R. (2013). Retaining passengers loyalty in Indonesia railway service. *International conference on business and economic research*, P. 623.

Rajeswari, V., & Kumari, K. S. (2014). Satisfaction and Service Quality in Indian Railways - A Study on Passenger Perspective. *Journal of Economics and Finance (IOSR-JEF)* Volume 4, Issue 1, 59,60.

Ribeiro, J. M. (1993). The components of service quality- An application to the transportation industry in Portugal. *ISEE-Instituto Superior de Estudos Empresariais*, p10.

Sekaran, U. (2003). *Research Methods for Business- 4th edition*. United States of America: John Wiley and Sons.

Turnaround in Indian Railways- A Study with Special Reference to Southern Railway. (n.d.). questionnaire to elicit information regarding service quality in southern railway.

Wikipedia. (2015, May 11). Wikipedia the free encyclopedia. Retrieved from www.railway.gov.lk: <http://www.srilankanrailways.com>