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Satisfaction of passengers towards service quality of southern railways: A study

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Abstract
Transport is essential for the economic development. Economic growth has always been dependent on the increasing capacity and rationality of transport. Rail transport is a means of conveyance of passengers and goods on wheeled vehicles running on rails, also known as tracks. It is also commonly referred to as train transport. Railways are absolutely suitable for long distance travel and movement of bulk commodities. Southern Railway is one of the best zones in Indian Railways. This study aims at knowing the passenger's level of satisfaction of the service quality of Southern Railways which includes the demographic factors and travel details of the respondents. For the purpose of the study 400 respondents were selected by applying convenient sampling method and hypotheses were tested and the results were given.

Keywords: Service Quality, Passenger Satisfaction, Southern Railways

Introduction

Indian Railways is the lifeline of the nation. The system never rests; it has been up and working perpetually for the last several decades. The Indian Railways network connects the social, cultural and economical fabric of the country and covers the whole of country ranging from north to south and east to west removing the distance barrier for its people. It has helped the economic life of the country and helped in accelerating the development of industry and agriculture. The rail network traverses the length and breadth of the country, covering in the year 2011 a total length of 64,460 kilometers (40,050 miles) [1]. It is the fourth largest railway network in the world, [2] transporting 8.397 billion passengers and over 106 million tons of freight annually, as of 2014 [3]. Their operation covers twenty eight States and three Union Territories and also provides limited services to Nepal, Bangladesh and Pakistan. Indian Railways is divided into 17 zones [4], which are further sub-divided into divisions. Each zonal railway is made up of a certain number of divisions, each having a divisional headquarters.

The Southern Railways, headquartered at Chennai, Tamil Nadu, is one among the 17 zones of Indian Railways. It is the earliest of the Indian Railways created in independent India. It was created on 14th April 1951 by merging three state railways, namely, the Madras and Southern Mahratta Railway, the South Indian Railway Company, and the Mysore State Railway. The South Indian Railway was originally created during the British colonial times as Great Southern India Railway Company founded in Britain in 1853 and registered in 1859. Its original headquarters was in Tiruchirappalli (Trichy) and was registered as a company in London only in 1890 [5]. Southern Railway has six divisions such as Chennai, Madurai, Tiruchirappalli, Salem, Palakkad and Thiruvananthapuram. It covers the states of Tamil Nadu, Kerala, Puducherry and small portions of Andhra Pradesh and Karnataka. More than 50 crores of passengers travel on the network every year. This zone of the Indian Railways differs from the other zones in India in that its revenue is derived from passengers and not from freight [6].

Review of Literature

Service Quality gained significance with the passage of time due to increased competition among service firms. It was examined by Athanassopoulos *et al*., (2001) [7], how customer satisfaction affects the customers' behavioral consequences. The study found a strong impact of customer satisfaction on their decision to stay with the existing service provider; and restrain their negative behavioral intentions.

According to Geetika and Shefali Nandan (2010) [8] service quality has been viewed as a determinant of customer satisfaction. Different dimensions of service quality have been considered by the researchers. The study identified components of service quality of Indian Railways at railway platforms. The study was exploratory in nature and uses factor analysis to identify the most important factors of customer satisfaction with service quality. The research methodology is empirical, and a survey of passengers (customers) was conducted. The findings revealed that five factors are considered important for determining satisfaction with railway platforms, the most important of which are refreshments and behavioural factors. Managerial and theoretical implications were drawn and discussed in the paper, and a model is proposed.

Kalavathi and Rekha (2011) [9] employed percentage analysis, chi square test and ANOVA to measure the level of passengers' satisfaction on amenities provided by southern railways in Coimbatore. They found that majority of the respondents have reserved their tickets through station counter 3-6 days in advance. They suggested that the services must be provided at world class level to make the passengers to enjoy the travel and it will improve the level of satisfaction of the passengers.

Sumana Gupta and Rabindranath Datta (2012) [10] measured

the quality of service provided at Indian railway stations. The purpose of this paper is to propose a method that indicates the level of importance and satisfaction which other known methods of service quality assessment do not clearly provide. In total, six attributes related to passenger services of an Indian railway stations are considered. Prioritization of the attributes for improvement of service quality can be decided based on the proposed method. Results of their study showed that both the levels of importance, as well as satisfaction, can be assessed by the Law of Categorical Judgment. Their results indicated that passengers are mostly dissatisfied with "extent of waiting"; thereafter, there is a desire for further improvement of the "security" system. The "travel associated facilities" such as Automated Teller Machine and use of cashless facilities at ticket counters; and "passenger amenities" such as station furniture and refreshment room have also been ranked higher in terms of need for improvements.

Nair. K. Sanal *et al*., (2014) [11] focused on the perception of passengers towards the satisfaction of services provided by Indian railways and to find the extent of satisfaction level among the users of Indian railway services. F-test was used to find out the significance of association between the demographics and the variables selected for the study. The experience of different respondents varied significantly indicating difference in the experiences. There was a mixed response towards the perception whether Indian railways should be privatized or not. The study concludes that Indian railways should not be privatized.

Statement of the Problem

Indian Railways provide many services to the passengers who travel in the train. The following questions were raised in the mind of researcher.

1. What are the travel factors available in Southern Railways?
2. What is the level of satisfaction of passengers towards the services offered by Southern Railways?

Objectives

1. To identify the travel factors influencing the passengers of Southern Railways.
2. To analyse the passengers' level of satisfaction towards services of Southern Railways.

Research Methodology

The study was conducted between 2014 and 2015 for 400 respondents in Erode. A total of 400 out of 460 respondents completed the questionnaires, representing a response rate of 87%. The study was conducted using non probability sampling techniques and the convenience sampling method was adopted because the population size was unknown. The passengers' satisfaction towards travel factors and passengers' satisfaction of service quality were analysed using various statistical tools and ANOVA was used to identify the significant difference between travel factors and the level of satisfaction of passengers.

Data Analysis and Interpretation

Table 1: Demographic Characteristics of the Respondents

S. No.	Demographic Factors	Particulars	Frequency	Percentage (%)
1.	Gender	Male	205	51.2
		Female	195	48.8
		Total	400	100
2.	Age	Below 30 years	254	63.5
		30-45 years	103	25.8
		45-60 years	32	8.0
		60 years and above	11	2.8
		Total	400	100.0
3.	Educational Level	No formal education	7	1.8
		School level	54	13.5
		College level	219	54.8
		Professional qualification	115	28.7
		Others	5	1.3
		Total	400	100.0
4.	Occupation	Student	131	32.8
		Employed	113	28.2
		Professional	60	15.0
		Business	34	8.5
		Housewife	60	15.0
		Others	2	0.5
		Total	400	100.0
5.	Monthly income level	Below Rs.10000	138	34.5
		Rs.10001 -50000	164	41.0
		Rs.50001-100000	59	14.7
		Above Rs.100000	39	9.8
		Total	400	100.0

From the above table, out of 400 respondents, 51.2 % of the respondents were male, 63.5 % were in the age group of below 30 years, 54.8% of the respondents are with college level of education, 32.8% of the respondents are students who prefer train travel and 41% fall in the monthly income category of between Rs.10,001 to Rs.50,000.

Travel Details

Travel details are multiple response questions, wherein the respondents give more than one response among several options. The study aims to analyse the factors such as Frequency of train travel, Time prefer to travel, Reservation of tickets, Preference of class and Average distance travelled in a month (up & down) by adopting simple percentage tool to check the proportion of passengers interested towards the travel factors in Southern Railways.

Table 2: Frequency of Train Travel

S. No.	Frequency of Train Travel	No. of Respondents	Percentage (%)
1.	Daily	16	4.0
2.	Weekly	24	6.0
3.	Monthly	72	18.0
4.	Quarterly	45	11.3
5.	Half yearly	41	10.3
6.	Yearly	62	15.5
7.	Occasionally	140	35.0
	Total	400	100.0

It is inferred that 35% of the respondents travel in train occasionally, 18% of the respondents travel monthly, 15.5% of the respondents travel yearly, 11.3% of the respondents travel quarterly, 6% of the respondents travel weekly, 4% of the respondents travelling in train daily and it is a low response rate among the Frequency of Train Travel.

Hence majority of the respondents (35%) travel in train occasionally.

Table 3: Time Like to Travel

S. No.	Time of Travel	No. of Respondents	Percentage (%)
1.	Day Journey	78	19.5
2.	Night journey	124	31.0
3.	Both	198	49.5
	Total	400	100.0

From the above table, it is observed that 49.5% of the respondents are preferring both day journey and night journey, 31% of the respondents are wish to travel in night time and 19.5% of the respondents like only day journey.

Thus, it is inferred that 49.5% of the respondents prefer both day journey and night journey.

Table 4: Time Duration for Reservation of Tickets

S. No.	Reservation of tickets	No. of Respondents	Percentage (%)
1.	Less than a week	95	23.7
2.	7 -30 days	164	41.0
3.	30-60 days	51	12.7
4.	60-75 days	11	2.8
5.	75-90 days	12	3.0
6.	Before 90 days	67	16.8
	Total	400	100.0

From the above table, it is found that 41% of the respondents reserve their tickets from 7 to 30 days before, 23.7% of the respondents reserve their tickets less than a week before, 16.8% of the respondents reserve before 90 days, 12.7% of the of the respondents reserve between 30-60 days, 3% of the respondents reserve tickets between 75-90 days, 2.8% of the respondents reserve between 60-75 days.

Thus it is inferred that the majority of the respondents (41%) reserve their tickets between 7-30 days before.

Table 5: Preference of Class

S. No.	Preference of class	No. of Respondents	Percentage (%)
1.	Unreserved	67	16.7
2.	Reserved II class sleeper	139	34.7
3.	Three tier A/C	29	7.2
4.	Two tier A/C	25	6.3
5.	I class	88	22.0
6.	II sitting	25	6.3
7.	A/C chair car	27	6.8
	Total	400	100.0

The above table shows that 34.7% of the respondents prefer to reserve tickets in II class sleeper, 22% of the respondents prefer to reserve I class, 16.7% of the respondents wish to travel by unreserved, 7.2% of the respondents prefer three tier A/C, 6.8% of the respondents prefer A/C chair car, two tier A/C and II sitting class have received response rate of 6.3%.

It is inferred that majority (34.7%) of the respondents prefer to reserve tickets in II class sleeper.

Table 6: Average Distance Travelled in a Month (Up & Down)

S. No.	Average distance travelled in a month (up & down)	No. of Respondents	Percentage (%)
1.	Less than 250 kms	240	60.0
2.	251-500 kms	87	21.7
3.	501-1000 kms	46	11.5
4.	More than 1000 kms	27	6.8
	Total	400	100.0

From the above table, 60% of the respondents travelled less than 250 kilometers in a month, 21.7% of the respondents travelled between 251-500 kilometers in a month, 11.5% respondents travelled between 501-1000 kilometers in a month, 6.8% respondents travelled more than 1000 kilometers in a month.

Thus, it was inferred that 60% of the respondents travelled less than 250 kilometers in a month.

Level of Passengers Satisfaction

Service Quality and customer satisfaction are two closely related terms. Customer satisfaction is related with the type of service quality, if the quality of service provided by the service provider is good then this leads to the higher customer satisfaction. If the customers are satisfied with the products and services offered, the organization has not only correctly interpreted customer needs and expectations but it is also providing products and services of acceptable quality.

In order to analyse the objectives of the study, the following hypotheses were framed and various tools were used to test the hypotheses.

Travel Factors vs. Level of Satisfaction

The following table illustrates the results of ANOVA in terms of travel factors, source of variation, degrees of freedom, sum of squares, mean sum of squares, f values and their significance on the level of satisfaction relating to the different factors of

satisfaction in the train services.

H0: There is no significant difference between travel factors and the passengers' level of satisfaction on train services of Southern Railways.

Table 7: Difference between Travel Factors and Level of Satisfaction on Train Services

S. No.	Variables	Train services / Sum of variations	Sum of Squares	df	Mean Square	F Value	Significance	Result
1.	Frequency of train travel	Between Groups	106.569	6	17.761	1.446	NS	Accepted
		Within Groups	4827.829	393	12.285			
		Total	4934.398	399				
2.	Time prefer to travel	Between Groups	3.577	2	1.789	.144	NS	Accepted
		Within Groups	4930.820	397	12.420			
		Total	4934.398	399				
3.	Preference of class	Between Groups	240.071	6	40.012	3.350	**	Rejected
		Within Groups	4694.327	393	11.945			
		Total	4934.397	399				
4.	Average distance travelled in a month (up & down)	Between Groups	49.668	3	16.556	1.342	NS	Accepted
		Within Groups	4884.729	396	12.335			
		Total	4934.398	399				

NS- Not Significant; * - Significant at 5% level; ** - Significant at 1% level.

From the above table hypothesis were accepted with respect to frequency of train travel, time prefer to travel and average distance travelled in a month and were rejected in respect to preference of class.

It is concluded from the above table, that the passengers level of satisfaction on train services differ significantly with preference of class among the travel factors.

H0: There is no significant difference between travel factors and the passengers' level of satisfaction on ticket booking services of Southern Railways.

Table 8: Difference between Level of Satisfaction on Ticket Booking Services and Travel Factors

S. No.	Variables	Ticket Booking services / Sum of variations	Sum of Squares	df	Mean Square	F	NS	Result
1.	Frequency of train travel	Between Groups	66.240	6	11.040	1.197	NS	Accepted
		Within Groups	3625.350	393	9.225			
		Total	3691.590	399				
2.	Time prefer to travel	Between Groups	15.498	2	7.749	.837	NS	Accepted
		Within Groups	3676.092	397	9.260			
		Total	3691.590	399				
3.	Preference of class	Between Groups	135.371	6	22.562	2.493	*	Rejected
		Within Groups	3556.219	393	9.049			
		Total	3691.590	399				
4.	Average distance travelled in a month (up &down)	Between Groups	8.524	3	2.841	.305	NS	Accepted
		Within Groups	3683.066	396	9.301			
		Total	3691.590	399				

NS- Not Significant; * - Significant at 5% level; ** - Significant at 1% level.

From the above table hypothesis were accepted with respect to frequency of train travel, time prefer to travel and average distance travelled in a month and were rejected in respect to preference of class.

It is concluded from the above table, that the passengers level of satisfaction on ticket booking services differ significantly with preference of class among the travel factors.

H0: There is no significant difference between travel factors and the passengers' level of satisfaction on Platform services of Southern Railways.

Table 9: Difference between Level of Satisfaction on Platform Services and Travel Factors

S. No.	Variables	Plat form services / Sum of variations	Sum of Squares	df	Mean Square	F	Significance	Result
1.	Frequency of train travel	Between Groups	65.821	6	10.970	1.498	NS	Accepted
		Within Groups	2877.619	393	7.322			
		Total	2943.440	399				
2.	Time prefer to travel	Between Groups	5.826	2	2.913	.394	NS	Accepted
		Within Groups	2937.614	397	7.400			
		Total	2943.440	399				
3.	Preference of class	Between Groups	92.868	6	15.478	2.134	*	Rejected
		Within Groups	2850.572	393	7.253			
		Total	2943.440	399				
4.	Average distance travelled in a month (up &down)	Between Groups	29.045	3	9.682	1.316	NS	Accepted
		Within Groups	2914.395	396	7.360			
		Total	2943.440	399				

NS- Not Significant; * - Significant at 5% level; ** - Significant at 1% level.

From the above table hypothesis were accepted with respect to frequency of train travel, time prefers to travel and average distance travelled in a month and were rejected in respect to preference of class.

It was concluded from the above table, that the passengers level of satisfaction on platform services differ significantly with preference of class among the travel factors.

H0: There is no significant difference between travel factors and the passenger's level of satisfaction on information services of Southern Railways.

Table 10: Difference between Level of Satisfaction on Information Services and Travel Factors

S. No.	Travel Factors	Information services Sum of variations	Sum of Squares	df	Mean Square	F	NS	Result
1.	Frequency of train travel	Between Groups	55.256	6	9.209	.899	NS	Accepted
		Within Groups	4026.744	393	10.246			
		Total	4082.000	399				
2.	Time prefer to travel	Between Groups	3.877	2	1.938	.189	NS	Accepted
		Within Groups	4078.123	397	10.272			
		Total	4082.000	399				
3.	Preference of class	Between Groups	200.238	6	33.373	3.379	**	Rejected
		Within Groups	3881.762	393	9.877			
		Total	4082.000	399				
4.	Average distance travelled in a month (up &down)	Between Groups	200.238	6	33.373	3.379	**	Rejected
		Within Groups	3881.762	393	9.877			
		Total	4082.000	399				

NS- Not Significant; * - Significant at 5% level; ** - Significant at 1% level.

From the above table hypothesis were accepted with respect to frequency of train travel, time prefers to travel and it is rejected in respect to preference of class and average distance travelled in a month.

It was concluded from the above table, that the passengers level of satisfaction on information services differ significantly with preference of class and average distance travelled in a month (up &down) among the travel factors.

Findings

1. There exist 1% level of significant difference between the travel factors of preference class and the level of satisfaction on train services.
2. There exist 5% level of significant difference between the travel factors of preference class and the level of satisfaction on ticket booking services.
3. There exist 5% level of significant difference between the travel factors of preference class and the level of satisfaction on platform services.
4. There exists 1% level of significant difference between the travel factors of preference class and average distance travelled in a month (up & down) with respect to the level of satisfaction on information services.

Suggestions

1. By installing more reservation counters to help the passengers to reserve their tickets in short period of time better customer satisfaction can be achieved.
2. Southern Railways has to modernize the Railway stations through latest technology in enquiry counters like microphone to answer online queries.
3. Providing concessions in train fare and increasing the number of trains will help the passengers to utilize more train travels.
4. More compartments to be allocated for passengers preferring II sitting, two tier A/c and three tier A/C to improve the satisfaction of passengers.
5. Good amenities, quality food and medical aids should be provided to enlarge the number of long distance travelled passengers.

Conclusion

Indian Railway provides the most important mode of public transport in India. Railways have played a significant role in development and growth of India. This is the most commonly used and cost effective long distance transport system of the country. Railways provide most convenient mode of passenger transport both for long distance and suburban traffic. The main purpose of the study is to know the satisfaction level of the passengers on the services provided by Southern Railways. Railways try to improve the core areas and deliver quality of services to the passengers. If the suggestions are considered positively, then it would be a strong environment to the passengers and also Southern Railways.

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