

Customer Satisfaction Study of Indian Railways

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ABSTRACT

Consumer loyalty and maintenance is one of the key determinants to gauge the nature of items or administrations and consequently the Indian Railway execution. Because of the developing significance of value in our life, customers desire to enjoy a relatively better quality of products or profiting unrivalled quality administrations has been expanded. The Indian railroad is one of the biggest and busiest rail organize on the planet, shipping sixteen million travellers and more than one million tons of cargo day by day. Its serves the travellers in an enormous way, along these lines there is a need to incorporate traveller worries in the activity, arranging and different procedures that effect traveller administrations and its quality in greater manner and it successfully screens the creation and upkeep of a decent benefits. Subsequently in this investigation is made upon the fulfilment level and issues looked by the Indian travellers. An adjusted SERVQUAL instrument including eight administration quality develops: Reliability, confirmation, physical assets, practicality, responsiveness, data framework, sympathy, sustenance and wellbeing and security were utilized to gauge the travellers & quota; recognitions about the administration nature of railroads.

Keywords

Service quality, Rail transport Passenger, satisfaction, SERVQUAL

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Introduction

Indian Railways is the backbone of our nation's transportation. Indian railways have come a very long way from where it was first introduced in the year 1830. Indian Railways was first introduced in India for the purpose of transporting freight (or) cargos. The first ever passenger train ran from Bombay to Thane in 1853. In the year 1951 the entire system was nationalized into one unit and from there on wards we call it the "Indian Railways" subsequently becoming one of the largest networks in the world. The system has been functioning for several decades till now serving the purpose of its inception. The Indian Railways network connects the social, cultural and economic fabric of the country and covers the whole of country ranging from north to south and east to west removing the distance barrier. Indian Railways is the world's eighth biggest employer and has 1.54 million employees by the end of 2018-19. In 2015–2016 Indian Railways had revenues of INR 1.97 trillion which consists of 1.175 trillion (US\$17 billion) freight earnings and 501.25 billion (US\$ 7.3 billion) passengers' earnings. It had an operating ratio of 96.2% in 2018-19. By the end of March 2017, IR's rolling stock comprises over 277,987 freight wagons, 70,937 passenger coaches and 11,452 locomotives. It is fourth largest railway network in the world. As of March 2017, IR network spans 121,407 km (75,439 mi) of track length, while the route length is 67,368 km (41,861 mi). The Indian Railways, as of 1st April 2019, had a Broad-Gauge network of 64,298 km. Out of this, 35,488 km was electrified. In the year ending March 2018, IR carried 8.26 billion passengers and transported 1.16 billion tonnes of freight. In the fiscal year 2017–18, IR is projected to have revenue of ₹1.874 trillion (US\$27 billion), consisting of ₹1.175 trillion (US\$17 billion) in freight revenue and ₹501.25 billion (US\$7.3 billion) in passenger revenue. This research paper is restricted with analysing consumer satisfaction based on service related parameters only and

doesn't include measurement of service efficiency, effectiveness and IR benchmarking techniques. Benchmarking is also a method for customer satisfaction comparison, where IR is compared with other means of transportation in India. As a result, there have been several benchmarking studies of transport efficiency and ultimately connecting it with the customer service satisfaction (e.g. Mohita Gangwar Sharma, 2014; Roma Mitra Debnath, 2015; Richard Oluruntoba, 2015; Sachinder Mohan Sharma, 2015). Other examples include Gathon and Pestieau (1995) who studied 19 different European railways and considered train kilometers as a customer satisfaction measure. Most studies have however considered only cost parameters while a few have incorporated factors such as safety and environmental concerns in the assessment of the efficiency of railway transportation and ultimately deciding customer satisfaction (for instance, Beck et al., 2013; Kabasakal et al., 2015; Noroozadeh and Sadjadi, 2013; Yu, 2008; Lan and Lin, 2005).

Hence, it is our view that quantitative performance outcomes should not be considered alone without them being linked to quality of service in order to secure a holistic assessment of railway services. As discussed, it is imperative to include critical service and quality parameters for a more holistic performance assessment which have not been considered in the literature in the context of railways. In order to bridge this gap in literature, we include critical service and quality parameters as well as some quantitative measures in deciding service based customer satisfaction of IR organizational context of IR.

This study aims to investigate the customers (passengers) perceptions about the service quality of only available public rail transport system in India. Demand for public transportation is high due to its rapid population growth. Trains, a major public transport, in India hold a unique position in the transportation sector of country and are considered to be the key determinant for the national growth. Rail transport system is a public sector rail transport

service known as Indian During the couple of decades' rail transport system is towards its worst decline. Therefore, there is a dearth of research to measure the service quality in India in general and to measure the passengers' perception about the quality of service delivered by the transport sector in particular.

Literature Review

Theories

(Goel, Geetika & Shefali, Nandan, 2010)

Satisfaction from service quality is usually evaluated in terms of technical quality and functional quality (Gronroos 1984). Usually, customers do not have much information about the technical aspects of a service; therefore, functional quality becomes the major factor from which to form perceptions of service quality (Donabedian 1980, 1982). Service quality may be defined as customer perception of how well a service meets or exceeds their expectations (Czepiel 1990). Service quality can be measured in terms of customer perception, customer expectation, customer satisfaction, and customer attitude (Sachdev and Verma 2004). Ekinci (2003) indicates that the evaluation of service quality leads to customer satisfaction. Rust and Oliver (1994) define satisfaction as the "customer fulfilment response," which is an evaluation as well as an emotion-based response to a service.

As per the above research paper considering the railway platforms, these were the main parameters which contributed to passenger satisfaction. The Quality determinants are Technical aspects, functional aspects (Gronroos 1984), Functional aspects (Donabedian 1982, 1980 and Gronroos 1984), Customer perception, customer expectation (Czepiel 1990, Sachdev and Verma 2004, TCRP Report 100), Customer expectation, customer satisfaction and customer attitude (Sachdev and Verma 2004)

(Devi Prasad Maruvada & Raja Shekhar Bellamkonda, 2010)

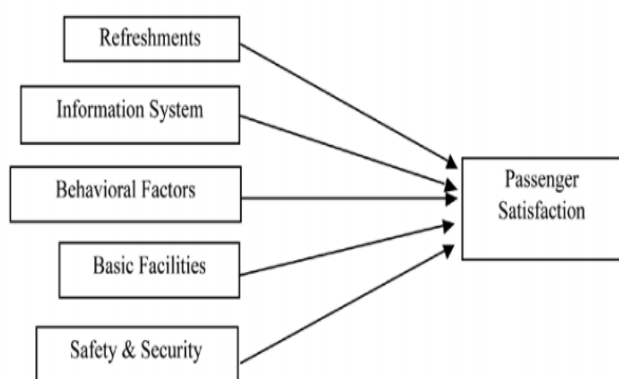
The Indian Railways (IR), operating for over 150 years, is among one of the largest and most established frameworks of India, affectionately called by individuals as the 'Help of the Nation'. Indian Railways assumes a key job in the social and financial improvement. IR is an important method of transportation for whole deal cargo development in mass,

long separation traveller traffic, and mass fast travel in rural zone. It involves an interesting position in the financial guide of the nation and is considered as a vehicle and indicator of development. Indian Railways lost its piece of the overall industry in Freight and Passenger section because of absence of client responsiveness and poor open observation. SERVQUAL investigations of traveller administration quality are performed by computing the mean midpoints of the travellers' gap scores. As a SERVQUAL poll is constructed utilizing Likert scaling, the classifications are positioned in ordinal scales, which show that the computation of mean scores isn't an effective technique for assessment. For a positioning scale, frequencies or rates are offered to get dependable ends. By the by, if the assessment is performed by mean midpoints or standard deviations, the travellers' crude scores ought to be changed into quantitative interim scores. Consequently, this examination offers fluffy numbers in the estimation of administration quality. On-going examination systems utilize fluffy set hypothesis for taking care of basic leadership issues. Anyway its application in the field of administration quality administration is as yet uncommon. The SERVQUAL approach is the most widely recognized technique for estimating administration quality. The credit for proclaiming the administration quality research goes to Parasuraman et al., [10]. They planned a proportion of administration quality got from information on various administrations, rather than depending on prior components of products quality in the assembling division. The whole approach was defined on the precept that clients engage desires for exhibitions on the administration measurements, watch execution and later execution discernments change into fulfilment degree.

SERVQUAL is substantially more humanistic, or client related, while the vast majority of the measures utilized in open vehicle industry are significantly more robotic, or have specialized centre, or use progressively target measures

(Anuradha, J. 2014)

Indian Railways possesses an absolute track length of 64,000 kilometers, 216717 wagons, 39,263 mentors, 7,739 trains and keeps running about an aggregate of 12,000 traveller trains and 7,000 cargos prepares every day. It conveys about 23 million travellers consistently and ship over 2.65 million tons of cargo day by day. The Head Quarters of the Indian Railways is in New Delhi. Indian Railways is constrained by the Government of India through the Ministry of Railways. At present, there are 17 zones and 68 divisions in the Indian Railways. Indian Railways has recognized model stations for the arrangement of redesigned traveller comforts. A portion of the stations have been recognized for arrangement of certain 'contact and feel things' to change them into present day stations so as to realize unmistakable enhancements at stations. Pranay Patil (2012) mentions that the Indian Railways (IR) arrange associates zones over the length and expansiveness of the nation. The travellers voyaging speak to the expansive decent variety of the nation – provincial decent variety, social assorted variety and money related assorted variety. The creator remark in due to the immense assorted variety of the nation, nourishment cooking changes as one goes



starting with one area then onto the next. The providing food administrations suppliers need to consider the assorted variety of the travellers and give benefits that would be considerable by all. In any case, there are numerous shortcomings in the arranging and overseeing of the framework which prompts consumer disappointment

Relationships

These are the main factors which are taken into account for establishing the relationships for calculating the satisfaction index:

1. Network capacity, length, train speed etc
2. Reliability, cost, convenience, safety
3. Track sharing for both Passengers and Freights
4. Level of civic sense in the society

All the real trunk courses of IR system is soaked past the limit it can deal with. These courses are taking care of beyond what 150% of the trains they can deal with. For instance, the Mughalsarai-New Delhi area which has a limit of around 75 traveller trains for each day is working around 160 trains for every day. In such a situation, it is extremely unlikely that the trains can keep running on schedule. Same is the situation with Howrah-Mumbai, New Delhi-Chennai and other trunk courses. For what reason did this happen? Since freedom, progressive governments have continued declaring new prepares in a steady progression, yet did not give scarcest consideration to the development of foundation. It was essential that significant trunk courses are increased for limit by significantly increasing and quadrupling of lines, yet none of the legislatures focused on it. At the point when the limit is considerably more than a framework can deal with, delays are standard.

The deferrals are regularly brought about by numerous TSRs (Temporary Speed Restriction) that are put on the railroad organizes because of harms and infrastructural issues. This is because of obsolete innovation, poor support and languid demeanour with regards to fixing tracks, catenaries or sign. Instead of solid work that would keep going long time, railroads regularly enjoy transient estimates which are a commonplace temporary disposition.

In all the countries with dense railway network and 100% punctuality of trains, freight and passenger trains have separate tracks. Because of cargo and travellers running on same track, both the cargo and travellers face delays (all the more so with cargo, which have no fixed timetables and are frequently held up at same station for a few hours). In addition, if a products train is on run, it can't be halted at stations which are short long, and the traveller train behind it continues getting deferred as the cargo trains have lesser allowable speed.

Once in a while, there is a bar or 'rail roko' which upsets rail traffic in that course. Regardless of whether there is a bar for 2 hours, it totally tosses the system into turmoil. When a train gets late, it triggers a chain response and all trains behind it get postponed. Another issue is continuous chain pulling on a considerable lot of the courses in India. At the point when a train is ceased by chain pulling, it prompts at least 10 minutes before it tends to be fixed and train began. In occupied courses, if a train gets deferred by thirty minutes, the trains behind it likewise begin to gather the postponement.

Proposed model and Hypothesis

We intend to identify the relevant factors which affect customer satisfaction by conducting a survey among people who have used the railways services and the data from the survey will be used for further analysis. Basic consumer information to help with the profile of the consumers we are targeting is as follows:

1. Age
2. Gender
3. Occupation
4. How frequently do you avail the train journey
5. Purpose of the journey
6. Type of train and travelling class

Our proposed hypothesis for the study is as follows:

There are various factors which have a direct impact on the customer satisfaction level and these factors are

- Safety
- Income level of Consumer
- Hygiene Level
- Food Availability (Food Plaza)
- Information Availability
- Ease of Availing the Service
- Timeliness
- Employment Generation
- Infrastructural facilities
- Logistic support-Couriers, parcel services, Freight trains
- Behaviour of Railway Employees

Methodology

Population Profile

All the people who are aware of the Indian Railways form the population of research. People using the service for transportation and those who know about the different services and associated with Indian railways directly or indirectly forms population for the research. The range is huge as there are various interlinked departments which are responsible for providing the services for the consumers. Different vendors who are linked with the Indian railways, employees who work for Indian railways also included and thus foreigner who visit our country and observe Indian Railway are also helpful.

Sample Profile:

Out of population data we have chosen some factors for our sample data like age, sex, occupation, frequency of travel, type of train, travelling class & passenger perception about the service of the Indian Railways. As these are the major factors responsible for analysis of the various traits and mind set for the quality of the service provided by the railways. These people are directly linked and have utilised the services in many categories so to know about the age group, occupation, frequency of travel etc are of prime importance, so we have taken into consideration the people who have utilised the services Indian Railway from different income group.

S. No.	Questions	Justification
1	Age	To determine which age group perceives what from the services of Indian Railway we're avoiding overlapping of ranges in our answer options, meaning that the same age doesn't fall into two answers.
2	Gender	To gather sample data and analyse which gender group uses the railway services more so that we can analyse the gender specific service expectations from Indian railways
3	Occupation	Which occupational group has what perception about the service provided by the Indian Railways? And to gather information on which strata expects what from Indian railways and how occupation plays important role in determining the service expectation
4	How frequently you use Railway services	To get the idea about which category uses it frequently, how the behaviour of consumers vary according to the frequency of travel. As frequent travellers will have in depth awareness about the different services.
5	Type of train you frequently use	To get the idea about the common problems in different trains types. How different class of people use different types of train and how they perceive the quality of services.
6	Traveling class	To get the idea about the common problems in different and services which vary according to the traveling class
7	Fare	To capture customer perception regarding overall services of Indian railways on different parameters. Which are the basic reasons behind availing the Indian railways as mode of transportation.
8	Comfort	

9	Security	
10	Reliability	
11	Speed	
12	How you rate the cleanliness of coaches	Cleanliness plays major part in choosing railway as mode of transport. As the journey is long in most of the trips the condition of the washrooms and other hygiene factors are very important.
13	Level of cleanliness of Washroom	
14	Platforms and stations	
15	Food from pantry	
16	How proper are the electric appliances maintained in the coaches?	
17	How much you rate the cleanliness of the Bed sheets, pillow cover and hand towel?	
18	Rate your satisfaction with the cleanliness of Blanket provided during journey?	
19	How you think that delay in railway affects the professional life of people?	The timely service is important as delay because the professional and other group of people make choice of opting for the other modes of transportation. This is competitive world, time is treated as money and helps people manage different task with reliable mode of transport.
20	How you think that delay in railway affects the personal life of people?	
21	Are the delays conveyed effectively?	
22	What do you think are the major reasons for delay?	
23	Are you happy with the behaviour of TT?	Customer satisfaction is directly linked with quality of service provided by the officials which various demand of the people. Behaviour of the service providers and complaints resolution creates confidence in people to use particular mode of transportation.
24	Have you ever faced any offence in trains?	
25	How satisfied were you with the railway official's assistance to help you in case of issues?	
26	How much are you satisfied with the service of the coach attendant?	
27	How much you rate the service of Inquiry window staff?	
28	How much you rate the service provided at Reservation Counter?	

Tools Used:**Excel:**

Qualitative research seeks to examine the interconnections in rich, complex data sources. The statistical tools of quantitative methods separate out pieces of data in a manner that defeats the purpose. But, like quantitative researchers, qualitative researchers often still find themselves overwhelmed by the amount of data and equally in need of tools to extend their human senses. This has led the development of a number of software packages designed for this purpose. An often overlooked option, however, is Microsoft Excel. Excel is generally considered a number

cruncher. However, its structure and data manipulation and display features can be utilized for qualitative analysis.

Gaussian Plot:

The normal distribution, which is also called a Gaussian distribution, bell curve, or normal curve, is commonly known for its bell shape and is defined by a mathematical formula. It is a member of families of distributions such as exponential, monotone likelihood ratio, Pearson, stable, and symmetric power. Many biological, physical, and psychological measurements, as well as measurement errors, are thought to approximate normal distributions. It is one of the most broadly used distributions to describe continuous variables.

Survey Method

The essence of survey method can be explained as “questioning individuals on a topic or topics and then describing their responses”.

Survey method pursues two main purposes:

1. Describing certain aspects or characteristics of population and/or
2. Testing hypotheses about nature of relationships within a population.

We have employed Mail Survey method specifically as it can be conducted in order to gather large size of information in a short period of time. And there is a possibility of generating large amount of data. It can be conducted faster and are cheaper compared to other methods of primary data collection. Data gathered through surveys are relatively easy to analyse.

The universe in this case is defined as the entire population of the country and foreign nationals visiting India. Hence, a definite statistically-sound sample was not feasible. Convenience sampling was used for the purpose of the survey, and a research sample was taken to measure customer perception. A team of 9 MBA students made up the Questionnaire to measure the customer satisfaction and analyse the customer perception on the service of quality provided by Indian Railways Services. A total of 321 passengers were contacted. This was simply a research sample and may not truly represent the entire user population; however the test of significance has been done and shows that the sample size would not affect the results.

Results & Analysis

Total Number of respondents : 321

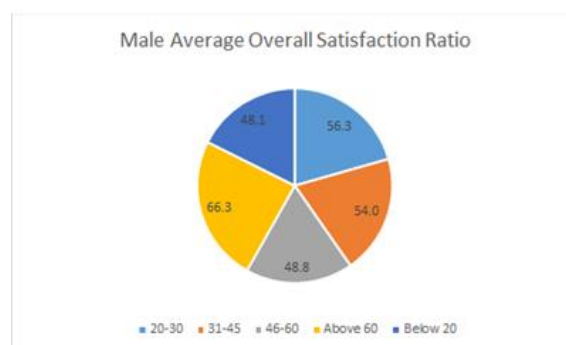
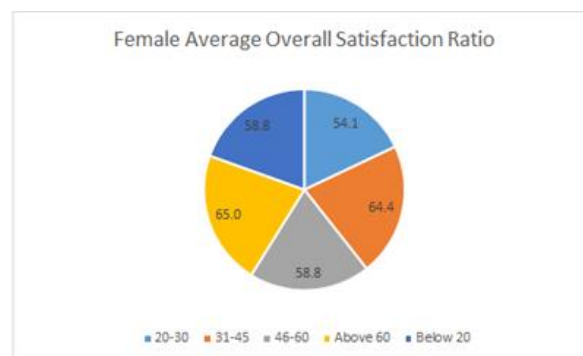
Male Respondents : 228

Female Respondents : 92

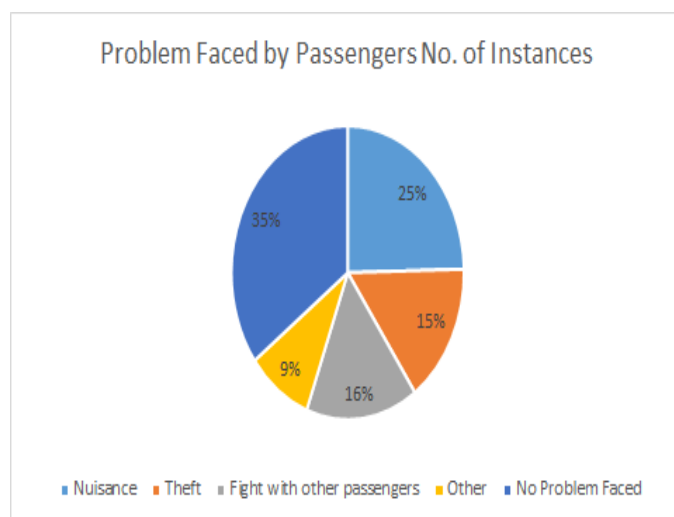
Transgender : 1

Overall Satisfaction Rate : 55.70%

Gender/Age Group	20-30	31-45	46-60	Above 60	Below 20	Grand Total
Female	54.1	64.4	58.8	65.0	58.8	55.2
Male	56.3	54.0	48.8	66.3	48.1	55.9
Male and Female both	56.3	-	-	-	-	56.3

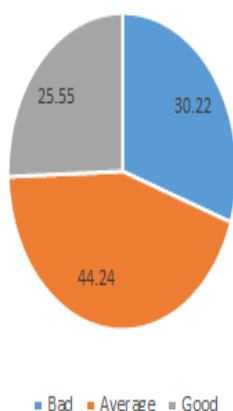


Problem Faced by Passengers	No. of Instances
Nuisance	79
Theft	50
Fight with other passengers	50
Other	29
No Problem Faced	113



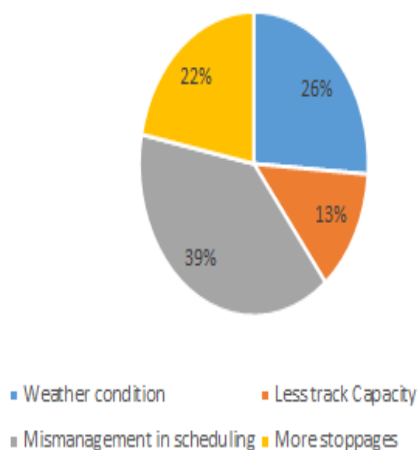
Problems Faced/Support from Officials	Bad	Average	Good
Fight with other passengers	15	32	3
No	19	53	41
Nuisance	32	28	19
Other	6	8	15
Theft	25	21	4
Total Instances	97	142	82

Average Rating Percentage



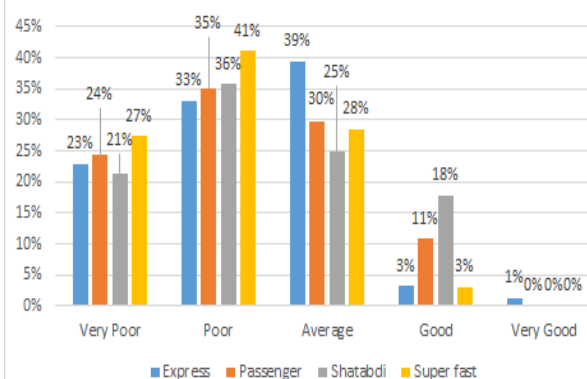
Delay Reasons	No. of responses
Weather condition	137
Less track Capacity	69
Mismanagement in scheduling	204
More stoppages	115

Delay Reasons



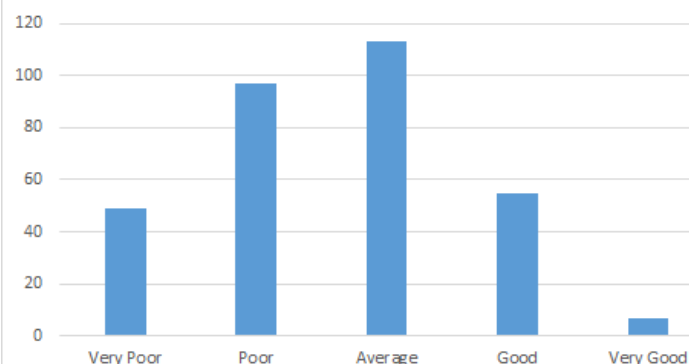
Train Type/Food Quality	Very Poor	Poor	Average	Good	Very Good
Express	23%	33%	39%	3%	1%
Passenger	24%	35%	30%	11%	0%
Shatabdi	21%	36%	25%	18%	0%
Super fast	27%	41%	28%	3%	0%

Food Quality Ratings in Listed Trains

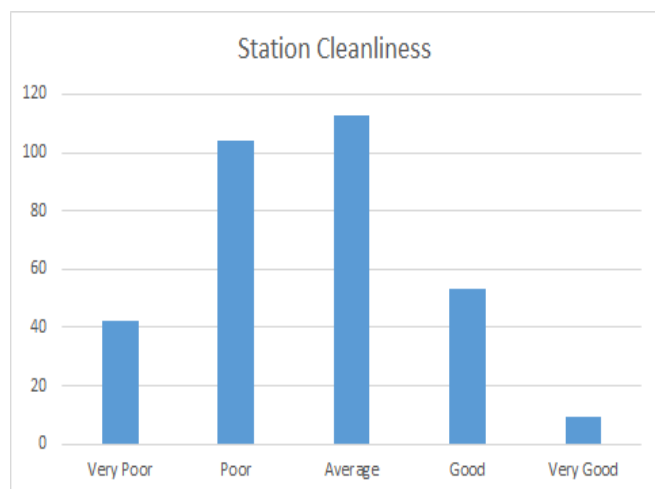


Rating	Coach cleanliness
Very Poor	15.3
Poor	30.2
Average	35.2
Good	17.1
Very Good	2.2

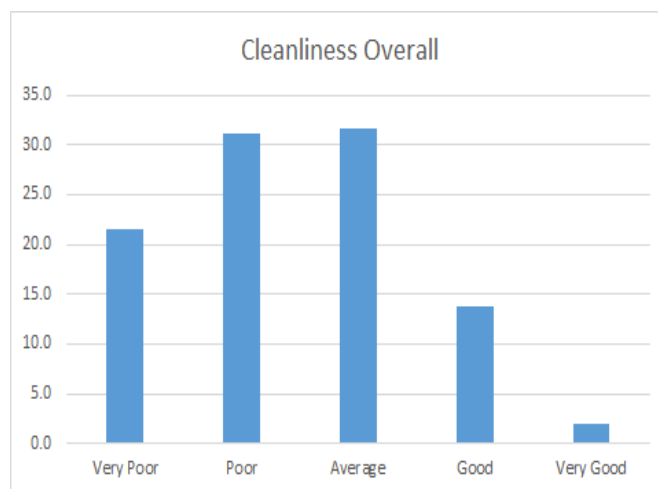
Coach Cleanliness



Rating	Station cleanliness
Very Poor	13.1
Poor	32.4
Average	35.2
Good	16.5
Very Good	2.8



Rating	Washroom cleanliness
Very Poor	36.4
Poor	30.5
Average	24.3
Good	7.8
Very Good	0.9



Conclusion

Overall empirical findings of this study indicates that the respondents are satisfied only up to 55% with the customer service provided by Indian Railways. This facts are also evident that passenger perceive that Indian Railways, the main public sector transport, is not providing good quality of services that can meet customer expectations. It is also evident that visible efforts by Indian Railways should be in place to improve or upgrade the rail transport system. Especially with respect to Level of Cleanliness of washrooms in train, majority of the respondents has shown dissatisfaction. Based on the survey response, it is very clear that IR should take immediate measures in-order to improve the cleanliness factor with respect to Platforms, Waiting Halls, Electric Appliances and bedding inside train. Also the food served by Railway pantry is not up to the expectations of passengers. Another important factor which the majority of respondents feel that IR should work on is Safety & Security. The respondents expressed that delay in railways has considerably affected their personal & professional life and majority of them were unhappy about mismanagement in scheduling trains which they felt as the major reason for delays. Also their response proves that the delays caused by Indian railways were not been effectively communicated to the passengers. This again requires a sharp attention from authorities of Indian Railways and has to be worked on with help of emerging technologies in-order to effectively communicate information to passenger in-case if any delays. The crucial observation of this study indicates that majority of respondents were Occasional railway passengers. This study suspects whether there is a decline in Railway passengers. The recent trends in the transportation industry also supports this observation. So this contributes to the further research whether Railway travellers are turning to become Airline passengers.

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