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Literature Review of Problems and Prospects of Indian Railway Stations

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Abstract: Indian Railways played an important role in our country's economic and social growth and development. It has brought dramatic changes in the country's economic, political, social, and cultural life. Indian Railways is also known as the "lifeline of the nation"; it is Asia's largest railways and the 4thlargest railway network in the world. It is also India's largest employer, and the world's 8th largest employer-owned solely by the Ministry of Railways, Government of India. Though it provides passenger and commercial transport to the whole nation at a comparatively lowest price, it faces intense competition with other modes of transport in terms of service quality and cost factors. The immediate resolution of its long and short term quantitative and qualitative challenges is a must to provide the best services to its customers. Organizational commitment at all levels in providing quality, cost, and safety services to passengers by improving all the functions at all levels can lead the way for becoming the preferred mode of transportation and catalyst for its growth and development. This review article focuses on the problems faced by the passengers and employees in Indian railway stations by using secondary data obtained from the comprehensive literature review from papers, blogs, journals, and magazines.

Keywords: *Indian Railways, Indian Railway Station, Indian Railway Passengers, Indian Railway Employees, Problems, and Prospects.*

1.0 INTRODUCTION

Railways are one of the most reliable and cost-effective modes of transport compared to the other modes of transport in India. Indian Railways are Asia's largest railways and the world's fourth-largest railway network, consisting of about 67,368 kilometers of the railway line, a state-owned enterprise under the Ministry of Railways, run by the Government of India. By 2018, the Indian Railway had about 70,000 passenger coaches, 277,900 freight wagons, and about 11,400 locomotives making it the world's 8th largest employer and India's largest employer consisting of more than 1.3 million active workforces and about 2.3 million pensioners. [1].Indian railways are divided into 17 zones. These zones are further divided into divisions for better strategic and operational purposes [2].

The Railway trains move from one place to another and stop regularly for loading and

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unloading passengers and freights. These stops are called train stations or railway stations. The stations usually consist of track-side platforms and station buildings. There are currently about 8,613 railway stations in India [3]. Each station consists of railway staff, railway equipment, and other amenities for the functioning of railways and the comfort of the passengers using the stations based on the station categories and passenger footfall.

Behind the performance of the Indian Railways, the employees and the Government plays a major role. Unfortunately, both employees and government works were untapped for study. For a successful organization, a job-satisfied employee and satisfied customer play a major role. Every organization has its issues and challenges and Indian Railways are no exception to it. So, in this context, the review paper deals with the issues and prospects of the passengers in the Indian Railway Stations and the issues faced by the Indian Railway employees.

2.0 RESEARCH AIM AND METHODOLOGY

This paper mainly focuses on the issues prevailing at the Indian Railway Stations. The main objectives of this research article are mentioned below:

1. To explore elements of growth and development of Indian Railways
2. To study issues faced by passengers in the Indian Railway Stations based on various literature reviews
3. To explore problems faced by Indian Railway employees based on past study
4. To identify the research gap and explore a theoretical framework for further studies in the chosen area

The review paper mentions some of the growth and development of the Indian Railways. It emphasizes on the categorization of Indian Railway stations, types of railway gauges in India, issues faced by the passengers in railway stations based on the attributes like cleanliness, amenities in the station, safety and security, parking facilities, etc. This paper also focuses on the problems faced by the Indian Railway employees concerning their office and work areas, employee welfare schemes, HR policies, and fringe benefits, etc. This literature analysis is created by reviewing secondary data resources like reports, websites, peer-reviewed journals, books, circulars, magazines, and making field visits. This paper explores the research gap in the study area and brings out suitable suggestions and recommendations.

3.0 LITERATURE REVIEW

3.1 History of Railway Transport:

Railway transport which is also known as train transport is the most dependable and cost-effective mode of transport in many parts of the world in which passengers and goods are carried on wheeled vehicles which run on rails for both long-distance and short distances. In comparison with road transport where the vehicles run on flat surfaces, trains run on tracks which are usually steel rails. Rails are powered by an engine fueled by electricity or diesel. It is one of the fastest modes of land transport. The history of transportation by wheeled vehicles running on rails that were man towed was dated back to 6th century BC in Greece. Later, in the 16th century in Germany, horse-powered wagonways rail transport came into existence. Rail transport originated in ancient Greece from humanly pulled contraptions. It has now developed into a modern, complex, and sophisticated infrastructure, used over long distances in both urban and cross-country (and continents) networks [4][5]. Compared to other forms of transportation, railways are the safest [6]. The Great Britain Rail System is the world's oldest Rail system. The first locomotive-hauled public railroad opened in 1825, followed by a rapidly growing period [7]. The world's first railroad was Stockton & Darlington

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Railway in England which operated both steam traction freight and passenger service. The railways went through several evolutions like ancient systems, pre-steam, wooden rails, metal rails, steam-powered, electric-powered, diesel-powered until the current high-speed rails [8].

3.2 Indian Railways (IR):

Railways in India came into existence in the 19thCentury. The first railway train in India was from Bombay to Thane which commenced on 16th April 1853 introduced by the British government [9]. It is one of the great assets of the country. Being one of the largest transportations and logistics networks in the world the IR runs about 19,000 trains. It runs 12,000 trains carrying about 23 million population in a single day across its 8,000 stations [10]. The Indian Railway reported ferrying 8.25 billion passengers and 1.16 tons of cargo in the 2018 fiscal year by receiving $27 billion in revenue.[1].

In India today we have passenger trains, goods trains, local trains, underground trains, Multi-Model Transport System (MMTS) Trains and Metro Trains. Multi-Model Transport System (MMTS) is in operation only in cities like Hyderabad and Secunderabad. Metro trains are in operation only in cities like Delhi, Bangalore, and Kolkata. Only the cities with 10 lakhs population and above are eligible to establish and operate Metro Trains. [11] [12].

3.3 Indian Railway Stations:

The area where the trains regularly halt for loading and unloading passengers and freights or both are called railway or train stations. The stations usually consist of track-side platforms and station building which provide services like ticket sales, waiting rooms and baggage/freight services, and other operational services. Stations may be at ground level, underground, or elevated. Connections may be necessary for the intersection of railway lines or other modes of transport, such as buses, trams, or other rapid transit systems [13]. On a typical day in the country as in 2016, the Indian Railways run nearly 20,000 trains on suburban and long-distance routes via the 7,350 stations [9]. Chhatrapati Shivaji Terminus in Maharashtra State is the first railway station in India [14].

3.4 Categorization of Railway Stations:

Earlier, Indian Railway Stations were graded into only 7 categories, namely A-1, A, B, C, D, E, and F. The stations were classified based solely on annual passenger earnings. The Railways had revised categories of various stations in a bid to provide better passenger facilities and amenities at railway stations throughout the country. The re-categorization was done to provide more reliable and focused services, taking into account earnings, passenger footfall, and strategic values. After December 2017, the passenger footfall was taken into account under the new station categorization criteria apart from the annual passenger earnings. This will help to make an oriented and more efficient business plan for different passenger facilities and passenger amenities at railway stations in India. The new scheme categorizes railway stations into 3 classes i.e. Non- (NSG), Suburban (SG), and Halt (HG), respectively. Additionally, these classes were put in separate grades from NSG 1-6, SG 1-3, and HG 1- 3, respectively. Currently there are 5,976 Non-Suburban Railway Stations, 484 Suburban Railway Stations, and 2,153 Halts making up as many as 8,613 stations [3].

TABLE 1: Categorization of Indian Railway Stations [3]

Category of stations	Criteria of Proposed Earnings	Criteria of Proposed outward Passengers handled@	Total number of Stations
Non-Suburban Stations			
NSG 1	> 500 Crore	> 20 Million	21
NSG 2	> 100 crores ≤ 500 Crore	>10 Million ≤ 20 Million	77

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NSG 3	> 20 Crore ≤ 100 Crore	> 05 Million ≤ 10 Million	227
NSG 4	> 10 Crore ≤ 20 Crore	> 02 Million ≤ 05 Million	286
NSG 5	>1 Crore≤ 10 Crore	>1 Million ≤ 02 Million	More than 5000
NSG 6	≤ 1 Crore	≤ 1 Million	
Suburban Stations			
SG 1	> 25 Crore	> 30 Million	35
SG 2	> 10 Crore ≤ 25 Crore	> 10 Million ≤ 30 Million	74
SG 3	≤ 10 Crore	≤ 10 Million	375
Halt stations			
HG 1	> 50 Lakh	> 3 lakhs	2153
HG 2	> 5 lakh ≤ 50 lakhs	> 1 lakh ≤ 3 lakhs	
HG 3	≤ 5 lakhs	≤ 1 lakh	

A total of 6,364 stations come under the last 3 stations categories (NSG 6, SG 3, and HG 3). This station categorization is valid for a period from 2017-18 to 2022-23. General Managers have the power to designate a station as a category NSG-4 if it is situated in a position of tourist importance and/or is an important junction [15].

3.5 Types of Railway Stations:

The railway stations are mainly categorized into 4 types: Terminal, Junction, Cantonment and Central stations

3.5.1 Terminal Railway Station: A station is named terminal or terminus station where the track or route ends. The train can only enter the station and exit in one direction. Based on the layout of the station, this usually lets passengers reach all platforms without needing to cross tracks—the public entrance to the station and the main reception facilities are at the far end of the platforms-Chhatrapati Shivaji Terminus, the first railway station of India and Lokmanya Tilak Terminal is the largest terminal station in India. [16]

3.5.2 Junction Railway Station: When at least 3 different routes are coming in and out of a station, then it is called a Junction station. In a simpler sense, there should be at least 2 different routes for trains to depart from the station. Not to confuse this with a single-track station on one side and a double-track station on the other. In this case, as their next stop, all trains going through the stop can only reach one destination. Junction stations typically have multiple facing platforms to enable trains to stand at the station simultaneously for multiple destinations. But they do not need this. The fundamental distinction between a junction and a terminal is that trains can only go in one direction at terminals whereas trains can go in both directions at junctions. The junction station with the highest routes is Mathura station which has 7 routes. Some of the examples of junction station are Salem Junction, Vijayawada, and Bareilly Junction [17]

3.5.3 Cantonment(Cantt) Railway Stations: Cantonment Stations are the stations within regions of the Cantt area. A Cantt is a city area where the army or armed forces station themselves. Due to their proximity to military bases at various locations, the stations are special and therefore have facilities that the defense forces can use for their needs such as logistics, squad transfer, troop movement, etc. Many Cantt stations in India are tiny stations with

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small train stops, like Delhi Cantt, Meerut Cantt, etc. [18]

3.5.4 Central Railway Station: Central Station means it is the town's busiest and most important station. It is normally very large, has several stations, and deals with a lot of arrivals and departures. There is also no need to have a central station in a city when there are multiple stations. Much as in India's Capital Delhi there is no central station. These stations are perhaps the oldest, so they are called central. In total, India has 5 Central Stations: Central Trivandrum, Central Kanpur, Central Mangalore, Central Mumbai, and Central Chennai[19].

3.6 Types of railway gauges in India[20]:

Railway gauges are the minimum distance between the inner sides of the 2 tracks. Before the building of the new railway line, it is the basic parameter of the railway track that must be determined. Thanks to technical reasons, the railways in the world followed different gauges. Approximately 60 percent of railways worldwide use the standard track.

TABLE 2: Types of Railway gauges [20]

Sl. No.	Type of Gauge	Width of Gauge in the metric system	Route length in km as of March 2017
1	Broad gauge	1676mm	64,298 km
2	Meter Gauge	1000mm	3,479 km
3	Narrow gauge	762mm and 610mm	2,208 km
4	Standard gauge (Delhi Metro)	1435mm	348 km

The Indian Railways has 4 types of railway gauges [21]:

3.6.1 Broad Gauge: The broad gauge is most widely used in India with approximately 64,298 km route length. Hence, they are also called the Indian Gauge. The first railway line was constructed in India using the Bori Bunder broad gauge now named Chhatrapati Shivaji Maharaja Terminus to Thane in 1853. Broad railway gauge is also used on crane ports, etc. This offers more stability, which is much more than thinner gauges.

3.6.2 Meter Gauge: The meter gauge lines were built for cost reduction. The distance between the two tracks is 1,000 mm. Under the Uni-gauge scheme, all meter gauge lines except the Nilgiri Mountain Railway, which is a legacy run on an Indian meter gauge, will be converted into broad gauge. Garhi-Harsaru and Farukhnagar are two small and old stations in Gurgaon from where the first Meter Gauge lines started.

3.6.3 Narrow Gauge: India has two types of Narrow Gauges, i.e., 762 mm and 610mm. These were also introduced to reduce railway-related costs, and because simple engineering required sharp turns in hilly regions. Under the Uni-gauge program, all narrow-gauge lines, except for the Kalka-Shimla Railways, the Darjeeling Himalayan Railways, and the Matheran Hill Railway (as these railways are granted the status of World Heritage by UNESCO) are converted into broad gauge.

3.6.4 Standard Gauge: The distance between the two tracks in this railway gauge is 1435 mm. Though this is the most widely used railway gauge in the world, in India, it is used only for urban rail transit systems like Metro, Monorail, and Tram. The only standard gauge line in India was the tram network Kolkata (Calcutta) until 2010.

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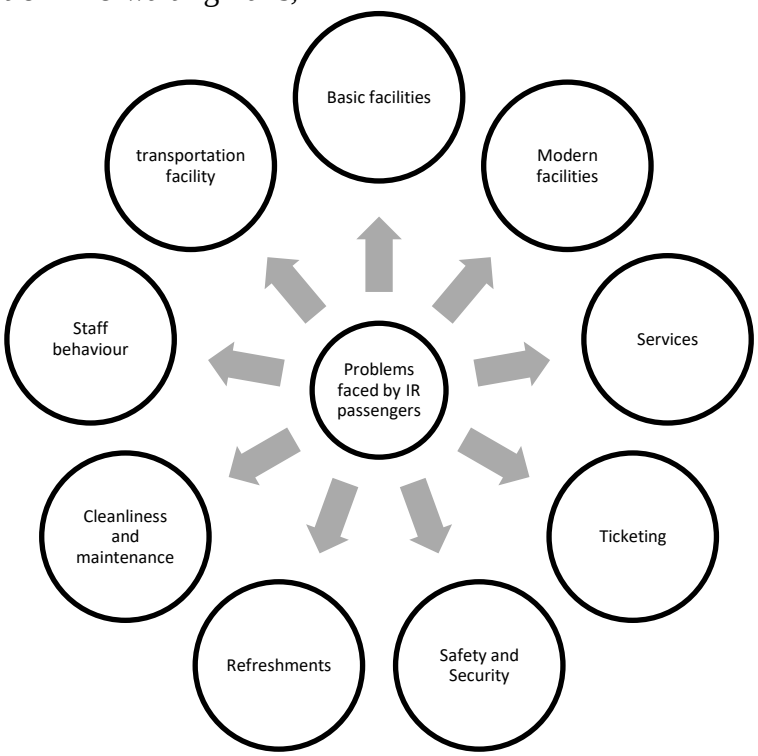
All metro lines that arrive in urban areas will be made only in the standard gauge, as it is simple to procure rolling stock for the standard gauge compared to the Indian gauge. By 2016, Delhi Metro, Rapid Metro Rail Gurgaon, Bangalore Metro, and Mumbai Metro lines are in service. All these are operated separately from Indian Railways.

3.7 Issues Faced by Passengers in The Indian Railway Stations

The Indian Railways has provided the railway stations with various facilities to make the passengers comfortable during their waiting period at the station. The availability, quality, and quantity of service provided is the main determinant of passenger satisfaction. All stations are provided with the following amenities for the safety of passengers: Foot over the bridge, High-level platform, Trolley path for movement of the wheelchair, etc. The passenger satisfaction in railway stations depends on facilities available in the various areas in the station like waiting halls, platform shelters, lifts, escalators, digital charts display, illumination, train/coach indication board, drinking water taps, porters, information desks, etc. Special facilities like wheelchair assistance, disabled restrooms, etc., and reservations are available for disabled and elderly passengers. The facilities differ in the category of the station. With the Higher category stations starting from NSG 1 stations, receiving most modern facilities including food courts, Wi-Fi connectivity, touch screen systems, Television, and audio systems, etc.[22]

Despite all the facilities provided, the passengers still face difficulties at the stations which need to be addressed for improving the quality of service provided by the organization and thereby increasing customer satisfaction and overall development. To identify the issues faced by the passengers, we can categorize them into the following segments as mentioned in the figure below. This will ease us to address the issues better [23].



Source: Author

Figure 1: Attributes of passenger issues at Indian Railway Station

3.7.1 Basic Facilities:

The railway stations are the place where passengers wait for the train which takes them to their destination. The railway stations are built as per the standards stated in the station design manual. In India and many international railways across the world have their Railway station manuals, the configuration of which includes a waiting room, separate waiting rooms for ladies, seating arrangement, station air circulation, lighting requirements, elevators, restrooms and drinking water facilities, etc. and is based on the passenger footfall of the station. [24] [25].

All railway stations in India are provided with some basic facilities irrespective of the category of stations. The basic passenger amenities given at the railway stations are in various station areas such as resting facilities, circulation room, water supply, other platform facilities, etc. Many of these installations come with no additional usage charges[26] [27]. Some services, however, such as luggage storage cloakrooms, bottled drinking water, paid accommodation rooms, etc., are available for users with minimal fees [28], [29]. Basic facilities provided at the railway stations are a significant determinant of rail passenger customer service [30]. Based on the passenger and employee load, the railway board periodically conducts surveys to identify the facilities needed to be given at each station. The survey defines the minimum amenities expected in compliance with the requirements, and by noting the current facilities. The passenger facilities include adequate seating arrangements in the waiting hall areas, shelter areas, and platforms, fans and lights available, dormitory rooms and cloakrooms, availability of safe drinking water, etc., [22].

Despite the facilities in the railway stations, there are many issues faced by passengers such as lack of suitable seating arrangements, drinking water, waiting, and restrooms with inadequate water facilities, lighting, and fans, etc. Several studies were conducted across Indian railways stations to determine the levels of satisfaction of passengers, facilities available at railway stations. And the passengers had expressed their concerns on issues like non-availability of safe drinking water, non-availability of a sufficient number of waiting or seating places in the platforms, improper lighting and fans. [31], [32], [33].

According to a news report, an atmospheric water generator, a device from which water can be harvested directly from the air and made suitable for drinking was installed at Secunderabad Railway Station under South Central Railway (SCR). With this innovation, bottled clean drinking water is made available to the passengers for the price of a nominal price of Rs.2/-. The Kiosk machine can produce around1,000 liters of water per day [34]. Placing such machines in stations across India may resolve the shortage of drinking water issues at the stations.

3.7.2 Modern Facilities:

Some of the modern facilities in the railway stations include the availability of Automated Teller Machines (ATM), Touch screen systems, Televisions, and audio systems, Wi-Fi facility, etc. inside the railway stations. These facilities are not a mandatory requirement. But having them in the stations will enhance the quality of time spent in the stations. Many of the top category or bigger railway stations have these facilities either with no additional charges or with minimum charges. More than 1,500 stations across India hadWi-Fi facilities [35]. The Indian railways have to Tie-up with State Bank of India (SBI) banks for the installation of ATM vending machines across many stations in India [36] [37]. To entertain the passengers the railways have installed audio devices and Television Sets (TVs) in many stations. In addition to it, the railways have come up with streaming of movies on board and off the board to passengers [38]. As a part of the New Innovative and Idea Scheme of IR and generation of revenue under Non-Fare Revenue, The Indian railways have installed Health ATM Kiosks

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across several railway stations in India. The machine can generate printed reports of Body Mass Index (BMI), Hydration level, sugar levels, Blood Pressure (BP), etc. within seconds and with low test price compared to lab tests [39]. These facilities are useful to the passengers and are also an additional income to the IR. Under the Adarsh Station Scheme, the stations have been provided with various facilities such as improved waiting halls, ample parking area, Wi-Fi lounges, toilets, refreshment rooms, cloakrooms, lifts, escalators, paid executive lounges, first-class waiting hall for ladies, commercial outlets, Reverse osmosis (RO) water booths, etc., [40].

However, the passengers may not be aware of these available facilities in the stations. Due to this, they may not utilize the facilities provided at these stations. The IR could take steps to provide awareness of the available facilities to the passengers on their e-tickets or inform the facilities available, Information Kiosks and desks at several points in the stations. A regular survey can be conducted to determine the passenger preferences for upgrading the facilities and suggestive paid facilities which could be a source of revenue for the IR.

3.7.3 Safety and Security:

The safety and security of the customers should be given the utmost importance in any organization. Better the safety and security at the stations, more passengers will feel secured and comfortable to travel with Indian Railways [41], [42]. In the IR stations, safety and security measures implemented include security checks at different points in the station, safety signs and precautions, the safety of passengers and belongings, luggage, etc. Provision of locker rooms, availability of emergency medical facilities like ambulance and railway doctors and rescue teams are some of the facilities provided by the IR to ensure the safety and security of its passengers.

Passengers and goods security in Indian Railways are taken care of by the Railway Protection Force (RPF) and Government Reserve Police (GRP). The GRP is responsible generally for the prevention and detection of crime on railways. The protection of goods-sheds, goods-wagons at stations, and parcel offices are taken care of by RPF. There are also women police force deployed for the safety and assistance of women passengers [43], [44].

The station also has medical facilities like the availability of railway duty doctors, first aid boxes, and ambulance at the vicinity of the station to attend the passengers in case of emergency.

Environment friendly and cost-cutting: The IR has stopped putting printed charts on the compartments consisting of passenger seats and details. The passengers are encouraged to use e-ticket on mobile instead of a printed ticket. By this, the IR saves money for both passengers as well as the organization and protects the environment against wastage of paper.

Railway crossing safety: For the safety of the people Indian railways has removed all the unmanned railway crossing and has replaced it with either manned railway crossing or Road Under Bridge (RUB) or Fly Over Bridge (FOB). Railways are aiming to convert all the manned bridges with RUB or FUB by 2022, thereby achieving 100% safe railway crossing [45].

Digitalization of railway signal: Indian Railways are modernizing their signaling network by introducing a Modern Train Control System with Mobile Train Radio Communication (MTRC) system based on Long Term Evolution (LTE). All the manual system is being converted to the digital system [46].

However, the passengers are still facing issues like danger due to lack of periodical security checks, theft of valuables in the station premises, lack of legible signboards, inadequate locker rooms, etc. Some of the reports also reveal that there is a shortage of sniffer dogs in the dog squads, malfunctioning of Closed Circuit Televisions (CCTVs), and a shortage of RPF and

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GRP personnel [47], [40], [48], [49], [50]. The IR needs to analyze the possible areas of risk and implement plans to safeguard those high-risk areas. The security of railway stations could be divided into primary and secondary measures. The primary measures involve screening, searching, frisking, physical barriers, and patrolling. Secondary measures include background checks, security vetting, and training [51].

The IR has taken few steps to improve the security system under the services to Passengers and Digital India Initiatives. Passengers can now use social media platforms like Facebook, Twitter, websites, mobile applications, IVRS Helpline 139etc., of IR to request any emergency and security issues through 24 hours helpline to all passengers. The *'RailMadad'* is the only platform for railways to address customer complaints. CCTVs were set up in many stations, Child help desk was set up in few stations to report missing, kidnapped, or trafficked children [52]. A plan has been established to Forensic Science Lab for RPF, Centralized Dog Training Center, mock drills, and special technology center for RPF. In the year 2019, after 166 years, the IR achieved zero passenger deaths due to railway accidents [53].

3.7.4 Ticketing Facility:

Passenger satisfaction from the train journey is important. It starts with the process of buying tickets and ends with an exit from the destination station. Passengers can obtain tickets directly from the ticket counters at the stations, through the IR website or through IR mobile applications. Tickets booked online can be an E-ticket which is a print-out / SMS or an E-ticket where the ticket is posted to the passenger [54] [55] [56]. Train tickets can be booked before by a maximum of 120 days in advance from the travel date. Booking of tickets through private ticket agents was canceled recently. For passengers who need assistance in booking, tickets can be obtained by visiting Citizen Service Centers run by the government.

A journey by train doesn't guarantee the right to board and travel just because the passenger got a ticket. It depends upon the status and validity of the tickets. The three status of booked tickets is Waiting List (WL) Ticket, Reservation Against Cancellation {RAC (sharing half berth by two passengers)}, or Confirmed Ticket. Waiting list tickets are either confirmed or upgraded to the RAC list based on a cancellation or no show by confirmed ticket passengers. Passengers are updated through SMS regarding the ticket status or can obtain information from the ticket counters at the stations. With RAC ticket the passengers can travel but do not guarantee a berth. According to availability of berth, one side lower berth on sharing basis is allotted to two RAC ticket holders

Cancellation of Tickets: A fixed fee is deducted depending on the class of travel if the tickets are canceled at least 48 hours before the travel time, after which the cancellation charges are deducted in the percentage of the ticket amount according to the time. Tickets can be canceled by a maximum of 4 hours before departure time. If it is on or after chart preparation time; but just before boarding time, a 50 % amount is deducted from the full ticket amount. For RAC or WL tickets, the tickets should be canceled at least 30 minutes before travel time to get a full refund.

Class of Ticket: The Indian Railway trains have the following class of travel like 1st AC (1A), First Class Non-AC, AC Two Tier (2A), AC Three Tier (3A), AC Chair Car (CC), Sleeper Class (SL), General Un-Reserved (UR), Ladies Compartment (L) and Luggage Compartment.

Automatic Ticket Vending Machines (ATVMs): ATVMs are installed at some of the stations to enable passengers to buy tickets by using money valets than buying tickets at the ticket counter. (57). There is also a study were a biometric-based ticket vending machine was proposed which could also be a future model implemented by IR [58].

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Travel Insurance: Considering several train accidents in the previous years, the Indian Railways through their Catering and Tourism Corporation (IRCTC) started the Travel Insurance in September 2016. To promote digital transactions, they offered free insurance cover for their travel from December 2016 till September 2018 and made travel insurance mandatory during this period. Currently, passengers can choose travel insurance by paying less than 68 paise in order to obtain insurance coverage of up to 10 lakhs. [59] [60].

From January 2018 printed train tickets issued at the station counters will have ticket details in the regional language also apart from English and Hindi. [61].

Despite all the provisions related to ticketing, the passenger could still face issues such as an inadequate number of counters in the station, limited working hours of the station ticket counters, bad server of the ticket booking web application, limited number of available tickets, ticket cancellation refund issues, etc. [62] [63].

3.7.5 Services and Information Centers:

To keep the passengers updated about their travel, IR provided several services like regular announcements of arrival and departure of trains, the status of the trains, information is updated through "May I help you Counters" and other information counters/ kiosks which helps to update the passengers. They can also utilize online inquiry services like dial-up inquiry, Interactive Voice Response System (IVRS), and inquiry through the IR web portal and mobile applications. [64].

In collaboration with ISRO, Indian Railways has implemented Real-Time Train Information System (RTIS) for the automatic chart preparation and passenger train information. 6500 trains are fitted with RTIS, 6000 more will be fitted out in one year [65].

However, passengers can still face issues like non-availability of up to date information, non-availability of staff at the information counters, announcements or malfunctioning of loudspeaker system and Language barriers. [66]

3.7.6 Staff Behavior:

The courteous staff is very important to answer the passenger's queries. Passengers interacting with various departments of IR staff in the station like the staff at the information counter, ticket counter, parking area, security, maintenance staff, porters, etc. are well trained to attend passenger's needs with utmost politeness and respect. However, the passenger could still face issues like rude behavior of staff, disrespectful or unhelpful staff, staff taking bribes, or charging more than the fixed fee for any services. The IR has provisions to address passenger grievances by lodging complaints through the web portal, IVRS, IR social media account, complaint counters or through feedback boxes at the stations

3.7.7 Cleanliness and Maintenance:

Cleanliness and hygiene are vital attributes of passenger satisfaction in IR [67], [68], [69], and [70]. The cleaning activity takes place regularly by the maintenance staff. However, there are still flaws in the cleanliness aspect. Various studies show that passengers had expressed concerns with the hygiene and cleanliness maintained by the IR [71][72].

IR started *Swachh Rail Swachh Bharat* Campaign with inspiration from the *Swachh Bharath* Campaign. Every year, a detailed study made from passenger surveys, interviews with station managers, and direct observation by the assigned staff is conducted by the Environment and Housekeeping Management Directorate, Ministry of Railways. A recent study in 2019 was conducted across 720 stations (NSG 1-4 and SG 1-2) in India which covered 17 zones for 2 days [73] [74].

To improve cleanliness and environmental protection in the stations, IR could install bio-toilets and self-mechanized cleaning of toilets and station areas. Adding more dustbins and pay and

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use toilets could be another step to improve cleanliness [10] [75].

3.7.8 Food and Beverages Access/ Catering Facility:

The availability of food stalls in the railway stations and in onboard trains is one of the important determinants for passenger satisfaction [30] [76] [77]. The Indian Railway Catering and Tourism Corporation Limited (IRCTC Ltd.) was established as an extended arm of Indian Railways to upgrade, professionalize and manage catering and hospitality services at stations, on trains and to promote domestic and international tourism through hotel development. Some of the major stations have food courts and food plazas too [78]. However, passengers may face issues in the quality, quantity, availability, and affordability of eatables [79]. E-catering services at selected stations are available by which a passenger can pre-book a choice of the menu before arriving at the stations. [80] [81].

3.7.9 Connecting Transportation and Parking Facility:

Connecting transportation services from the railway station to the passenger's final destination will make the passenger's journey easy which is also one of the attributes of passenger satisfaction. The attribute elements like parking facilities at the station and the availability of public transportation like taxis, auto-rickshaws, and buses are important. However, passengers could still face issues like the non-availability of modes of transport from the station to their final destination, insufficient and improper parking facilities, etc.[82]

3.8 Indian Railways Employee Recruitment and Classification:

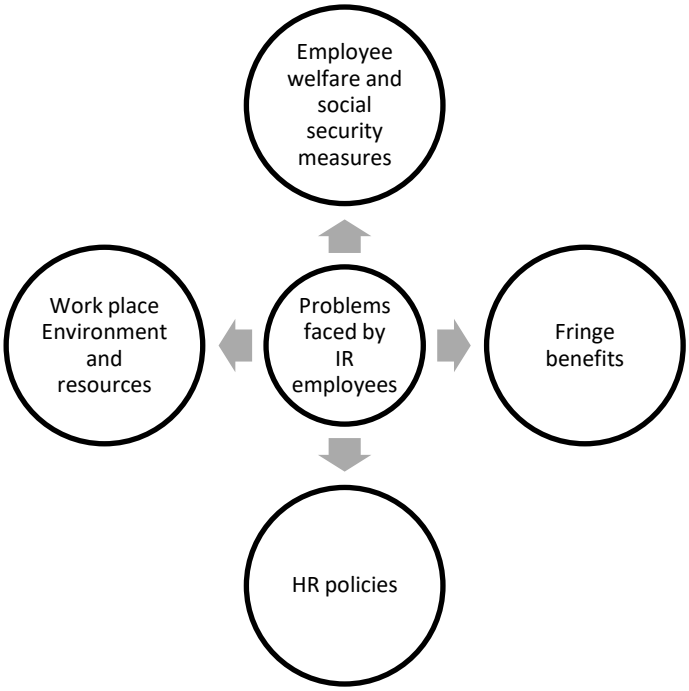
The Railway Recruitment Board in India recruits the various groups of employees. The railway employees are divided as permanent and contractual employees. IR classifies its workers into 4 classes from group A to D. Group A being the highest-grade of staff, and group D is the lower grade of workers. Group A (Gazetted Officers) and Group B (Non-Gazette staff) are recruited by Union Public Service Commission (UPSC), Group C employees are recruited by Railway Recruitment Boards (RRB) and Group D employees are recruited by Railway Selection Boards (RSB) and by private staff agencies. [83] [84].

3.9 Issues faced by Employees of Indian Railways:

IR is one of the largest public sector organizations in India as well as in the world which provides its employees several facilities like accommodation facilities, medical facilities, educational facilities for employees children, holiday homes, staff benefit funds, conveyance allowances, retirement benefits, training and development facilities, etc.,

A satisfied workforce is the best asset for any organization. A healthy and good work environment, employee welfare measures, pay scale, fringe benefits and HR policies of the organization are the major attributes that contribute to the employee's satisfaction in most of the organizations including in IR. However, in spite of providing all the above facilities, there could be some gaps which could affect the employee's job satisfaction. Low pay, long and irregular working hours, heavy workload, shortage of manpower, lack of job security, lack of employee welfare schemes, discrimination at the workplace, occupational stress, uncomfortable work area, dissatisfied with salary and other monetary benefits, lack of career opportunities are few of the issues which IR employees are facing [85] [86].

These issues need to be analyzed and addressed by the Indian Railways for the benefit of their employees and for the overall development of the Indian Railways.



Source: Author

Figure 2: Attributes of Issues faced by Indian Railway Employees

3.9.1 Workplace Environment and Resources:

a) Workplace Resources: The nature of physical workspace or the office is one of the important attributes of an employee's job satisfaction which contributes to their mental well-being and productivity. The employee spends the majority of his day in the work area. Having a comfortable work area will obtain the best output from the employees and contribute to any organizational growth. The workspace attribute includes spacious office space, good ergonomics furniture, good lighting and seating arrangements, sufficient stationery, availability of communication links like phones, internet, fax machines, computers, printers, restrooms, availability of safe drinking water and refreshments etc., are the basic requirements for any office to make the employees work comfortable at the workplace. As per a study conducted by National Business Furniture in 2018, women employees are unhappy compared to men with an uncomfortable working environment [87]. These issues will affect the employee's job satisfaction and productivity at work [88] [89].

b) Workplace Environment: The Workplace environment attribute includes the relationship with colleagues, subordinates, supervisors, workload, occupational stress, training and development opportunities, open communication system, support and sharing, career prospects, etc. These factors are some of the important aspects adding to employee satisfaction and productivity. If the workforces are facing issues with the work environment, it will hamper the productivity of employees. [90] [91].

3.9.2 Employee Welfare and Social Security Measures:

The employee welfare measures are some of the programs, incentives, and amenities the employer provides to an employee's comfort. An appreciated employee will be more satisfied and more productive. This will not only lead to higher productivity; but also creates satisfied customers and, consequently increase profitability in the business [92]. IR provides several employee welfares measures for the well-being of its

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employees. The welfare measures adopted by the IR can be categorized as Statutory, Social Security, and Suo Moto measures [83]. Here are some of the employee welfare measures adopted by IR under the 3 categories:

a) **Statutory Welfare Measures:** These are labor measures like canteens, first aid rooms, welfare offices, payment of wages for sick leave due to accidents, Creches, accident or death compensation, committees to resolve disputes, restricting on recovery from wages up to 50% of wage, and prompt payment of wages.
b) **Social Security Welfare Measures:** These include Pension, Insurance, group insurance, compassionate funds, compassionate employment, and IR women's organization scheme.
c) **Suo-Moto Welfare Measures:** These include the provision of welfare inspectors to organize welfare activities, educational and recreational facilities, co-operative activities, Railway Minister's relief fund, Post-retirement complimentary passes and passes for employee's widow/widower [94].

The welfare measures for employees at IR cover a wide range of activities in the areas of education, medical facilities, housing, sports, recreation, and catering. [95] [96][97] [98].

However, the IR employees could still face issues with welfare measures, and these are to be readdressed [92]

3.9.3 Fringe Benefits:

These are additional benefits offered to employees apart from salary. Some of the fringe benefits offered by the IR are annual leave, overtime pay, medical leave, maternity and childcare leave, Bonus of quality work and attendance, provident fund, Employee counseling, etc. The employee could still face issues with the fringe benefits offered to them like insufficient overtime pay, medical leave not issued, etc.

3.9.4 Human Resources Policies:

HR policies in any organization must be carefully framed to protect the organization's vision and to benefit the workforce at all levels. HR policies attribute to job satisfaction like disciplinary action policy, promotion conditions and policies, maintaining the confidentiality of report, the safety of employees, response to queries, trade unions support, grievance policies, welfare policies, transfer policies, work-life policies, Recruitment policies, Reward and recognition policies, performance appraisal system and career growth policies, etc.. [99][93].

IR employees can face issues with some of the HR policies mentioned above which could lead to overall job dissatisfaction and low productivity.

TABLE 3: Problems faced at Indian Railway station

Sl No	Authors& Type of reference	Year	Methodology/Findings/ Result
1	Saheb, T. S. R (Thesis)	2002	Study on South Central Railways indicates some of the employee welfare and social security schemes provided by the IR.
2	Geethika S N (Journal article)	2006	Identified the contribution of factors that determine user satisfaction with the quality of service provided in the railway station platform using a passenger survey.
3	Agarwal (Journal article)	2008	Considered 47 attributes to assess the effect of consumer perceptions about different service aspects of public transportation services on their satisfaction level; customer-oriented basic platform services were the most important factor, followed by employee behavior
4	M. Devi Prasad & B	2010	A study conducted using questionnaire revealed that passenger

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	Raja Shekhar [107] (Journal article)		perception on tangibility, convenience, assurance is much higher than other aspects.
5	Flash Eurobarometer (Analytical report) [102]	2011	Passenger survey on satisfaction with Railway station was conducted which included station amenities, ticketing process, cleanliness, commuting modes, parking facility, etc.
6	Chaudhary A & Iqbal R (Journal article)	2011	The study revealed the level of employee satisfaction on various welfare measures of IR [109]
7	Maruvada D. P & Bellamkonda R (Journal article) [100]	2012	This study conducted using Rail Qual survey tool, identified the contribution of factors such as employee service, train punctuality, platform amenities, Reservation and Ticketing, and safety and security, etc. that determine user satisfaction
8	Gupta and Dutta (Journal article)	2012	Took the case of Howrah Junction and prioritized reduction in waiting time, upgrading of security systems, upgrading of travel-associated facilities, improvement in passenger amenities as requirements of passengers.
9	Sheeba and Kumuthadevi [104] (Journal article)	2013	16 variables for measuring passenger satisfaction were grouped under 7 factors—basic facilities, hygiene, safety and security, catering, health care services, punctuality, and behavior towards passengers.
10	Sharma. N (Thesis)	2013	A study conducted in Jhansi division railways mainly consisted of Employees motivation and job satisfaction
11	S Gandhimathi & Saravanan (Journal article)	2014	The study reveals passenger satisfaction at Coimbatore Junction station using the 7-service quality measurement model.
12	V Rajeswari & K Santa Kumari (Journal article)	2014	Modified ServQual instrument used to determine satisfaction and service quality from the passenger perspective.
13	G Rajeshwari & Elangovan (Journal article)	2014	The study mainly revealed passenger issues while reserving tickets and boarding the train. The study was conducted using a survey questionnaire
14	Hosmani A. P &Bindurani B. S (Journal article)	2014	The study revealed the quality of work-life and employee satisfaction based on working conditions, pay scale, stress, employee supervisor relation, etc. [111]
15	Katta Ashok Kumar (Journal article) [112]	2014	Job satisfaction of Vijayawada division employees was accessed based on factors like job environment, work culture, supervisor, etc.
16	S Pandey et al. (Journal article)	2015	A study conducted using a passenger survey in Raipur railway station revealed the passenger satisfaction with quality catering service at the station.
17	Rani A (Thesis) [105]	2015	Garrett ranking technique used to rank important problems of passengers. A study conducted by taking passenger surveys based on issues related to platforms, ticketing, inquiry, waiting and retirement rooms, etc.
18	Veronica Korale et al (Journal article)	2015	A qualitative study revealed that service quality affects customer satisfaction. [108]

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19	Deogirikar S (Journal article)	2015	The study revealed the work culture and working conditions of the IR employees [110]
20	J Priyadarshini & M Selladurai (Journal article) [101]	2016	The gap between passenger expectation and perception of service quality was studied using the ServQual model
21	P. Premsanthi & M Sivakami (Journal article)	2016	A questionnaire based on the railway reservation system used to collect issues faced while ticket reservation and its influence on passenger satisfaction
22	D Anbupriya & S Subadra (Journal article)	2017	The study revealed a passenger satisfaction survey through questionnaire tool at Erode city based on problems faced at the railway station
23	Mohan N & Sivaraman A (Journal article)	2017	Occupational stress among employees Thrissur Railway Station was studied across different departments of IR. Work environment, supervision, workload, social injustice are causes of stress
24	Aswathappa K (Book) 12th Ed. [113]	2017	The book on organizational behavior stated that Job satisfaction is a general attitude of the employee. When employee have a positive attitude towards their job, job satisfaction exits
25	N Makesh & K Manthankumar [103] (Journal article)	2018	The study revealed some of the issues faced by passengers in Madurai city and suggested measures to improve.
26	Dipa Mitra (Journal article) [106]	2018	RailQual instrument used to determine passenger service quality factors and their influence on passenger satisfaction
27	Khan A (Thesis)	2018	Level Job satisfaction mainly on employee welfare and fringe benefits of railway employees of Kota Division, West Central Railways was revealed
28	Macdonald J (News blog)	2018	7 factors of poor working conditions that hurt employee productivity
29	Rao, A., T, S. V., Chaudhuri, M. S., & Kumar, K. S. (Journal article)	2019	The study discussed the current recruitment practices in Indian Railways and suggested future recruitment practices that can be used at IR
30	Prachi Singh S (Thesis)	2019	A detailed study on Employee welfare Schemes was conducted

5.0 RESEARCH GAP

1. Even after 168 years of establishment of IR, still, IR passengers and good trains are not operational in many areas in India.
2. Local trains and MMTS are operational only in some of the capital areas in India.
3. Due to an increase in demand for passengers and trains, there needs to be further re-categorization of Railway Stations.
4. There needs to be further emphasis on the study on Cantt and Central Stations.
5. After reviewing the literature it was found that only a limited study was conducted on major determinants of passenger satisfaction like Basic facilities, Modern facilities, Safety and Security, Ticketing facility, Railway station services, Staff behavior, Cleanliness, Catering facility, Safe drinking water, Connecting transportation facilities and Parking facilities,

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etc.

6. Need to come out with more safety measures to prevent further train accidents, unsafe travel practices, and unsafe railway crossings.
7. Analysis of quality of training provided to the Railway Protection Force needs to create further awareness of passenger safety measures, and need to improvise rescue measures.
8. To improvise customer complaint platform *'RailMadad'* to resolve customer complaints.
9. Pre-booking of food and refreshments facility is confined to a few stations and not extended to other stations.
10. Effective and quick recruitment process in IR to replace the right person at the right job and at the right place.
11. There is a need for further study on problems and issues faced by IR employees based on determinants of job satisfaction like workplace environment and resources, Employee welfare and social security measures, fringe benefits, and HR policies.
12. There is a need for continuous up-gradation to technology by IR
13. There is a need to improvise welfare measures being provided to IR employees
14. Need to improvise the quality of training provided to IR staff and need to implement effective employee policies like transfer policies, work-life policies, recruitment policies, reward and recognition policies, performance appraisal system, career growth policies and need to safeguard the rights of trade unions.
15. The study will also indicate measures to provide quality and safety services to passengers, increase railway traffic, railway network, revenue, employee efficiency, and contributing to the development of the nation.

6.0 CONCLUSION

Indian Railways is becoming increasingly important day by day. With the growing number of passengers, Indian Railways has concentrated on extending their attention to meet their traveler's needs and take the initiative to improve the quality of services to enrich traveler's satisfaction. The Indian Railways must focus on improving the factors of the determinants of passenger satisfaction at Indian Railway stations such as basic facilities, modern facilities, services, ticketing, safety and security, catering facilities, cleanliness, staff behavior, and transportation facilities. For the Growth of Indian Railways, the employees have made a significant contribution which cannot be forgotten. A satisfied employee can render his best service to the organization. The Indian Railways must focus on motivating its employees and meeting their job satisfaction needs. Factors like workplace environment and resources, employee welfare and social security measures, fringe benefits, and appropriate HR policies determine the Job satisfaction of the employees at Indian Railways. IR should carefully review all the factors of employee satisfaction without affecting the organization's vision.

Future Focus: The future focus of Indian Railways is in providing safe and punctual transport, electrification of the train lines and to cover remote places of the country and thereby contributing to further development of the country.

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