WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Identifying Dimensions Influencing Customer Satisfaction Towards In-Train Passenger Services

Anand Ranjan Prasad

National Rail & Transportation Institute

Acknowledgement

This Graduation thesis opportunity at the National Rail and Transportation Institute (NRTI) has been invaluable for my learning and professional growth. I extend my sincere thanks to my mentor, **Dr. Hasmukh Gajjar** (Associate Professor, IIM Indore), for his indispensable support and guidance. I am deeply grateful to **Prof. Nikunj Kumar Jain** (Assistant Professor, IMT Ghaziabad) for his valuable feedback.
My heartfelt thanks go to **NRTI Administration & Academic Team** for this incredible opportunity. Lastly, I thank my parents for their unwavering support. This experience is a significant milestone in my career, and I will strive to apply and improve the skills and knowledge gained.

ABSTRACT :

Background:

Indian Railways has been a cost-effective transportation mode for over 160 years. Historically, it has focused on providing basic services to keep costs low. However, in a competitive environment, this may not suffice to retain passengers. Service improvement is essential to enhance competitiveness and customer satisfaction, especially post-pandemic as people avoid public transit.

Objective and Methodology:

The study aims to identify factors influencing customer satisfaction and behavioral intention towards in-train services of Indian Railways. An online survey using Snowball sampling gathered responses from travelers since the pandemic, evaluating services across six dimensions on a five-point Likert scale.

Findings:

Based on 224 survey responses, the study found that reliability, convenience, safety & security, and COVID measures positively influence customer satisfaction. Reliability, convenience, and COVID measures positively influence behavioral intention. Overall customer satisfaction also positively impacts behavioral intention. This study helps Indian Railways identify and improve key service factors to enhance customer satisfaction and behavioral intention.

KEYWORDS Indian Railways, customer satisfaction, behavioural intention, in-train services, covid measures, tangibles, reliability, personnel service, convenience, safety and security

List of Tables

List of Figures

CHAPTER 1: INTRODUCTION

1.1 Introduction :

Indian railway, also known as the lifeline of the nation, is a government entity under the Ministry of Railways. Indian Railways (IR) is the second-largest rail network in Asia and the world's fourth-largest in size and has over 70,000 passenger coaches and more than 11,000 locomotives.[1] IR has become one of the busiest yet lowest-cost travel modes for passengers. Indian railways operating as a single entity has touched the lives of millions of people. IR runs 13,253 passenger trains & 9,146 freight trains on a daily basis making IR the largest rail network in terms of passenger volume carried per day and the fourth largest in terms of freight volume.[2] With a track length of approx. 68,000 km, Indian Railway have been providing economical transportation to the people of India. Railway systems are viewed positively by citizens and policymakers around the world because of their impact on mobility, their potential to improve land use and development in urban centers (i.e., less land allocated to parking and prospects for transit-oriented development around railway stations), and because of rail's relatively low environmental footprint when compared to other transport modes. Apart from providing transportation service, IR has several social obligations which include

- Providing passenger service and coaching service at below cost fares, including subsidized service to certain passengers and classes.
- Running uneconomic passenger lines which mainly consist of operation at remote location where the passenger revenue is quite less compared to the investment put in and operational expense to these railway lines.

As a result of these perceived benefits and others, governments are often highly involved and financially engaged stakeholders of railways. Railway budget was separated from Union budget in 1924 as the railway had higher proportion as compared to the union budget at that time. Dedicated budget for managing of railway expense and revenue was introduced to ensure that in the future government was receive assured returns from railway revenue but in the last few years financial performance of railways have worsened. IR has been failing to generate enough profit to invest in improving infrastructure and has been relying on budgetary support from central government and Extra Budgetary Resource (EBR) which includes financing through borrowing from financial institutions (mainly LIC in the recent years), foreign investment, public private partnerships etc.

1.4 Statement of the Problem

Railways have always been a cost-oriented entity and have focused on keeping its cost down to provide a cheap mode of transportation to the people of India. For a long time, its focus has been on providing basic only services but now in competitive environment that may not be enough to keep the passenger. In the early 1950s railways had a larger share of passenger share but over time it has declined with increase in road infrastructure and the advancement of on-road vehicle making it affordable for all. The growth in road passenger has been higher compared to rail passenger growth owing to several factors which have now resulted in road share of passenger capturing a chunk of passenger transport of approx. 85% of the total passenger while railways share has been decreased to less than 14%. In the fiscal year, 2018-19 revenue from passenger operation accounted for around 30%[3] of the total revenue earned. The revenue from passenger operation saw an increase 5% as compared to the decline of 0.4% recorded in the fiscal year 2018.

CHAPTER 2: LITERATURE REVIEW

2.1 Literature Review

Service sector in India has grown significantly and at present have a total contribution of over 54%[4] in India's Gross Value Added (GVA) for the financial year 2019-20. The sector encompasses a range of economic activities like financial activities (banking, auditing, insurance), real estate, digital (cloud service, consultancy), trading, transport etc. As service sector keeps on growing, the competition in the sector is also increasing constantly resulting in more companies focussing on understanding their customers in order to ensure high customer satisfaction.

Transportation has been a key indicator of the economic growth of a country. Ensuring a good service quality to the passengers is one of the most important tasks and purposes of a transport operator. It is important that the transportation system is effectively managed and its development is an important factor for both the economic as well as social development of any country (Mardani et. al., 2016). Rail transport has played a vital role in the

[1] Railway Board, Ministry of Railways Website

[2] Indian Railways Yearbook 2019-20

[3] [Newspaper Article] Business Standard, 2019

[4] Ministry of Statistics and Programme Implementation

development of the economy and in case of India, Indian Railways is still considered as a primary mode of transport for long commuters as the fares are cheap and affordable to most of the customer segment. Many things have been investigated and proposed in order to estimate the service and ride quality of public transports perceived by passengers. Customer satisfaction is important to improve customer-focused products and services. Voice of customers can be a valuable input for management in mapping which areas should be prioritized (Aimee, 2019).

Susanto (2010) stated that customer satisfaction is the level of a person's feeling after comparing the expected result and the actual performance/result. In the same direction, Kotler & Keller (2012) says that "satisfaction is person's feeling of pleasure or disappointment resulting from the comparison of a products or service performance to the expectations they had from the same". Czeipel (1990) defines satisfaction as to how well a product or service was able to meet the expectation. Lovelock (2012) states that customer satisfaction is an emotional state, their post-purchase reaction can be anger, dissatisfaction, irritation, excitement, and neutrality. While most of the researchers perceive satisfaction based on the emotional response from a person, some of the researchers argue that customer satisfaction is evaluated in terms of technical & function quality (Gronos, 1984).

Customer satisfaction and service quality are interlinked notions where one is going to affect other; good quality product leads to higher satisfaction (Oliver, 1980; Yuksel & Rimmington, 1998; Hallak et al., 2018). Although service quality and customer satisfaction are two independent entities but they are closely linked with one another and an increase in one is likely to result in an increase in other (Sureshchandar et. al., 2002). Customer satisfaction in service-based industry is very important and is regarded as one of the most important indicators of loyalty & purchase intentions of consumer. Deng et. al., (2009) emphasised the importance of customer satisfaction as business generate more revenue when the customers associated are satisfied by the level of service offered. Customer satisfaction is the outcome of service quality (Rod et. al., 2009). Service quality is considered as one of the decisive factors to obtain a competitive advantage in the service sector. The overall service quality has a significantly positive effect on overall user satisfaction (Wang & Shieh, 2006). Hussain et. al., (2015) further analysed that customer satisfaction is significantly influenced by the service quality, perceived value and brand image in a positive way thus making service quality imperative for evaluating the overall customer satisfaction and any step towards improving customer satisfaction begins with assessing quality of the service offered by the firm (Aydin et. al., 2017).

Several scholars have proposed different attributes to evaluate service quality in order to determine extent of satisfaction from the service among customers. Allen & Cisare (1976) categorised service quality into two categories user and non-user.

2.1.1 Studies on Customer Satisfaction in Public Transport

Trimet (1995) stated that level of satisfaction of transportation customers has a vital impact on their call of whether or not or to not select it as their primary mode of commutation. Kavaliauskienė et. al., (2014) through his analysis on consumer satisfaction from logistics service suggested that high quality of service resulted in increased customer loyalty and offered competitive advantage by reducing the numbers of competitors. His research focused on quality of service further suggested that logistics of service is primarily evaluated on the basis of price and safety offered and customer satisfaction is highly influenced by these two factors. Kumar (2012) identified comfort as the deciding factor for customer satisfaction in public transport.

2.1.2 Studies on Customer Satisfaction in Railways

Prasad & Shekhar (2010) built a system designed to help Railways track and monitor the quality of services delivered to passengers. The research assessed the quality of the Indian Railways passenger rail service by designing the RAILQUAL instrument on the basis of SERVQUAL and rail transport quality. Further, they added 3 new transport dimensions (comfort, safety and convenience) to the existing five SERVQUAL dimensions (i.e., assurance, empathy, reliability, responsiveness and tangibles) and tested their newly developed instrument. Indian Railways offers a variety of value-added service apart from transportation service. These services can be broadly categorised into two categories: In-train based services and platform-based amenities. According to Maruvada and Bellamkonda (2012), there is a significant relationship between in-train service, employee service, train punctuality, platform facilities, reservation and ticketing, and safety and security, all of which have a positive impact on overall Railway passenger service efficiency. Ghosh et. al., (2017) measured passenger satisfaction out of platform-based amenities by using regression analysis, service quality performance and consumer satisfaction. His study focused on 33 amenities to identify top 5 amenities which were majorly affecting passenger satisfaction. Several authors have identified different deciding factors for customer satisfaction towards railways. The study by Agarwal (2008) identified that employee behaviour has the maximum impact on the overall level of satisfaction of customers with IR while the study by Gupta & Datta (2012) suggested that out of total 6 attributes identified to improve the satisfaction of the service offered waiting time at railway station was the major cause of dissatisfaction among the passengers. Nair et. al., (2013) conducted study to find the perception of travellers towards the satisfaction of services provided by Indian railways and to find the extent of satisfaction level among the users of Indian railway services. The study further found that customers have mixed perception towards privatisation of railways. For those whose major concern was cost were not in favour of privatisation while for whom convenience was the major concern were in favour. Nandan & Geetika (2010) identified refreshment and behavioural factors as deciding factor, while Anuradha (2014) concluded comfort as the deciding factor. Dandotiya et. al., (2020) found that food and beverage quality attributes and price significantly affect passenger satisfaction and Patil (2012) suggested customer satisfaction from the catering service could be improved by incorporating passenger origin, type of train and class of travel in deciding the menu. Prasad and Shekhar (2012) found that there is significant relationship between the in-train services offered on the overall satisfaction of the passengers.

2.1.3 Customer Satisfaction amid COVID towards Public Transport

Various range of studies are available focusing on the change in mobility and transport pattern due to COVID pandemic. De Vos (2020) suggested that travel demand and daily travel pattern is likely to change due to social distancing norms. Now, due to outbreak of COVID people are likely to avoid public transport as much as possible as the gap between other passengers is quite less and poor ventilation in public transport would only aid in spreading of corona virus. Based on the findings of Bhaduri et. al., (2020) there have been a significant change in the commute behaviour of Indian commuters

since the covid as now commuters are avoiding public transit like bus or railways for or discretionary activity and public transit operators have to take measures to improve hygiene and reduce physical contact to reduce the risk of spreading COVID 19 and reg-gain the trust of commuters. According to the study conducted by Mohammadin (2020), respondents identified private vehicle as the comfortable one and rated public transport bus and train as the negative ones. Dong et. al., (2021) identified that passenger's feeling of safety enhances their overall satisfaction towards public transportation amid COVID.

2.1.4 Behavioural Intention of Customers

Kang et. al (2004) defined customer behavioural intention towards a service as positive reactions appearing as outcome from satisfied customers. Majority of the literature has broken down behavioural intention into two categories (Bujisic et. al., 2014; [61])

1. **Return Intention** of the customers defined as the desire of a customer to engage in repeated visitations to an establishment (Kim et al., 2009). Carnage (2004) stated that return intention is related to customer loyalty and a loyal customer is more likely to come back to the product or service provider, will be more responsive and will make more demands.
2. **Word-of-mouth** is defined as the extent to which a customer informs other individuals. Recognized as one of the most influencing parameters affecting behavioural decision of the customers (Richins, 1983). Hennig (2004) defined word of mouth as statements positive or negative made by the customers towards a product or service. Positive word-of-mouth occurs when a customer is satisfied with a service or product and has a desire to share this positive experience with other individuals. There could be several factors influencing customers to be involved in word of mouth. According to a study by Cheung & Thadani (2012) that consumers pay more attention to negative review or information than the positive once and hence it is imperative for any business to work on building good experience for customers.

Ardani et. al., (2019) identified behavioral intention of the customer as their decision to remain or defect from the company. They further identified that service quality has consequences on return intention, positive WOM and willingness to recommend in tourism. Simarmata & Ikhsan (2017) studied the case of online transportation providers like Uber and stated that service employee orientation towards customers significantly influences customer retention and behavioral intention.

2.2 Literature Gap

It can be observed from the literature review that the existing studies are focused around the change in mobility, transport pattern of people or behavioural change in passengers due to spread of COVID. None of the studies are focused around the customer satisfaction derived from the existing public transport specifically from railways during the COVID 19 pandemic. Furthermore, none of the studies have focused specifically on in-train services offered. In India, on an average spends significant time inside the coach than on station or any other premises of railways. This study attempt to identify key factors which now decide the satisfaction from railways and measure the overall satisfaction from in-train services during the pandemic.

CHAPTER 4: METHODOLOGY

4.1 Conceptual Framework of Customer Satisfaction

A conceptual framework of customer satisfaction for railway service is proposed using the literature review. Sureshchandar et. al., (2002) stated that although service quality and customer satisfaction are independent but they are closely linked with one another and an increase in one is likely to result in an increase in other. In order to evaluate customer satisfaction from in-train service, service quality is evaluated. The key dimensions of customer service quality were identified considering the SERVQUAL (Parasuraman et al 1988; Zeithaml et al., 1990). Based on the findings of Chou et. al., (2014) the attributes of service quality is refined further to select the following dimensions:

- **Personnel Service** consist of dimensions courtesy of employee, employee service attitude, knowledge of employee and appearance of personnel. This dimension focuses on the satisfaction related to the personnel available in the coach known as coach attendant.
- **Reliability** includes dimensions handling of complaint, on time response to complaints/queries, online responsiveness (for services like Coach Mitra[5]) and dependability of staff.
- **Tangibles** include dimensions cleanliness of coach, cleanliness of seating area, cleanliness of toilets and availability of dustbins for waste disposal.
- **Convenience** is described as dimensions consist of ease of access to in-train facilities, prompt response to queries, comfort at seating area and availability of coach attendant.
- **Safety and security** dimensions include personal safety in train, safety of belongings, over-crowding in train and overall safety during journey
- **COVID 19 measures** include handling of covid related emergencies, precautionary measure of in-train personnel, level of sanitation inside coach before and during travel.

The survey questions proposed to collect the primary data will be made by also considering the RAILQUAL model proposed by Prasad and Shekhar (2010) which added 3 new key dimensions Safety, Convenience & COVID 19 precautionary measure to the existing 5 dimensions of SERVQUAL model. The following hypotheses are proposed.

$\mathbf{H_{1.1a}}$ = Personnel Service has positive impact on customer satisfaction for in-train services.

$\mathbf{H_{1.1b}}$ = Personnel Service has positive impact on behavioral intention of customers for in-train services.

$\mathbf{H_{1.2a}}$ = Reliability has positive impact on customer satisfaction for in-train services.

$\mathbf{H_{1.2b}}$ = Reliability has positive impact on behavioral intention of customers for in-train services.

$\mathbf{H_{1.3a}}$ = Tangibles has positive impact on customer satisfaction for in-train services.

[5] Coach Mitra Official Website

$H_{1.3b}$ = Tangibles has positive impact on behavioral intention of customers for in-train services.
$H_{1.4a}$ = Convenience has positive impact on customer satisfaction for in-train services.
$H_{1.4b}$ = Convenience has positive impact on behavioral intention of customers for in-train services.
$H_{1.5a}$ = Safety & Security has positive impact on customer satisfaction for in-train services
$H_{1.5b}$ = Safety & Security has positive impact on behavioral intention of customers for in-train services.
H_{2a} = Covid 19 precautionary measures have a positive impact on customer satisfaction for in-train services.
H_{2b} = Covid 19 precautionary measures have a positive impact on behavioral intention of customers for in-train services.
H_3 = Customer Satisfaction has positive impact on behavioral intention of customers for in-train services.

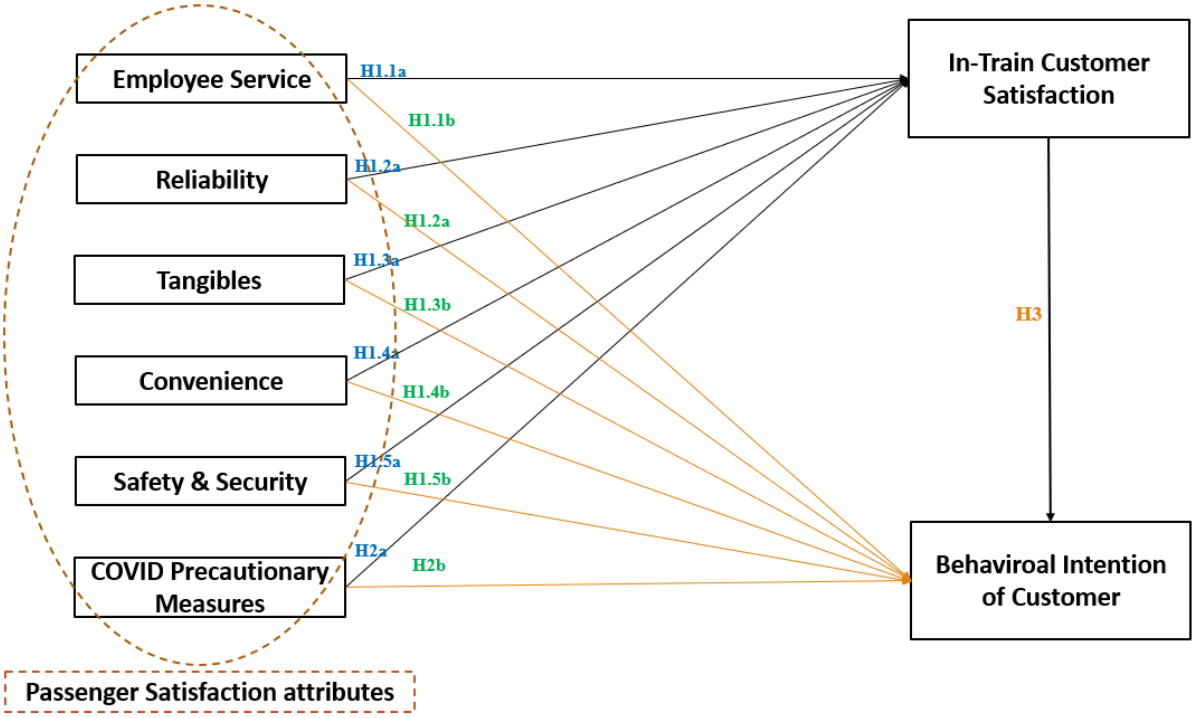


Figure 4.1: Proposed Framework

4.1.1 Excluded Services

Due to the onset of pandemic, Indian Railways have terminated two of the amenities offered to the passenger and hence these services were not considered to study the customer satisfaction towards in-train services. These services are

1. **Catering Service** included e-catering, food plazas, refreshment rooms, Jan Aahars and in-train kitchens (catering cars). During the pre-covid era, Indian railways were serving approx. 20,000[6] orders per day and thus accounted for one of the most crucial in-train services offered.
2. **Linen Service** were provided in the AC classes to the passenger but in response to the pandemic, Indian railways stopped supplying reusable covers, sheets, blanket and pillows in trains to provide passengers with a more sanitary travel experience since March 2020[7].

4.2 Research Flow

[6] [Newspaper Article] Business Standard (2021)
[7] [Newspaper Article] Republic World (2020)

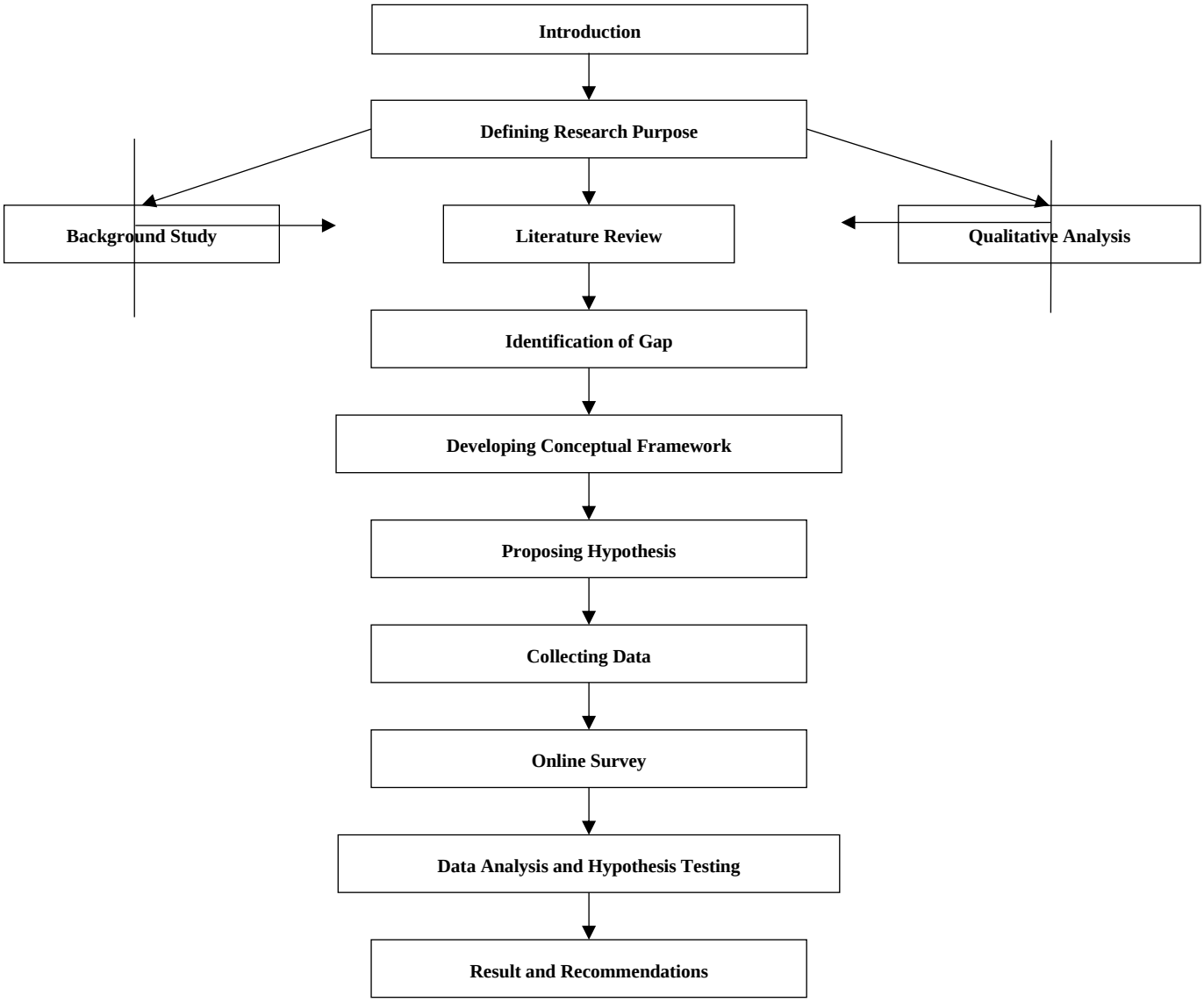


Figure 4.2: Research Flow

4.3 Methodology

In this study, people who have travelled via railways amid the COVID 19 pandemic or have travelled via railways after April 2020 and are of age equal to or above 18 were targeted to test the proposed hypotheses developed in the conceptual framework. This study is empirical in nature and uses primary data collected through survey using a structured questionnaire. The questionnaire was divided into three parts

- The first part addresses the demographic profile of the respondent passenger.
- In the second part passengers were asked to rate the quality of the in-train services offered during their travel. A total of 24 items were covered under 6 constructs and passengers were asked to rate them on a 5-point Likert scale with the highest rating be very good and lowest very poor.
- The third part asked the passengers to indicate their satisfaction level and their behavioral intention towards in-train services. Likert type scale in which (5) represent strongly agree and (1) represent strongly disagree was used to capture response.

A structured survey was developed, and the targeted population was asked to fill out the online survey. The survey technique used was snowball sampling technique. This sampling method involves a primary data source nominating other potential data sources that will be able to participate in the research studies. Snowball sampling method is based on referrals from initial subjects to generate additional subjects. Therefore, this method is also called the chain-referral sampling method. This technique is used when it is difficult to reach out to the potential respondents (Liu et. al., 2017) (Ahmadabadi & Heravi, 2019). Due to COVID lockdown and strict rule, this technique is preferred as it is difficult to get response. This research uses only the primary data collected from the survey response using the same technique. The survey was conducted during the month of April 2021. The survey was shared in the form of google form with the initial recruiters and they were asked to forward to the survey to their contacts. Apart from this, the survey was also shared at various social media sites and people who were qualified for the survey were asked to fill up the form indicating their response. The instrument used to collect samples is google form and Smart PLS 3 is used to analyze the data and report the findings.

Objective of the study:

- Identify the service quality dimensions influencing customer satisfaction derived from the in-train services offered.
- To identify the service quality dimensions influencing behavioral intention of the customers towards in-train services offered.
- Find out whether the Behavioral Intention of the customers is influenced by overall customer satisfaction for in-train services offered by IR.

4.4 Pre-Test and Pilot Study

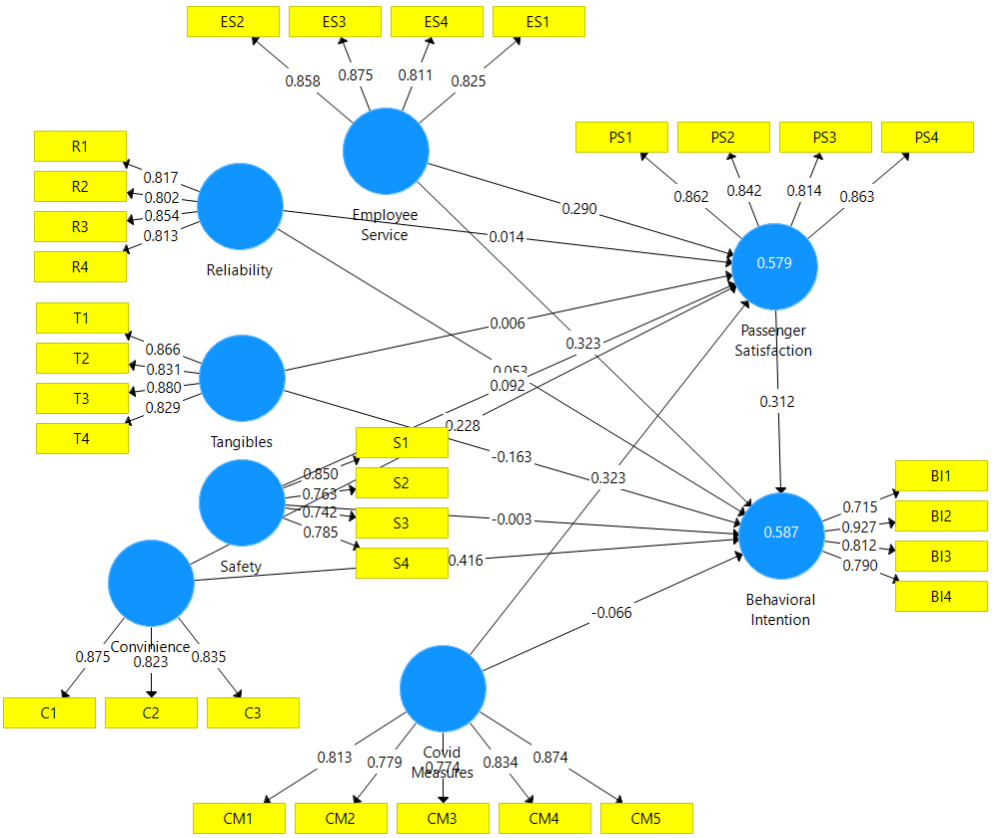
Initial pre-testing was carried out under the supervision of an academician and mentor. Recommendations and suggestions were received from the initial respondents were taken into consideration to develop survey for pilot study. Pre-testing was carried out to assess whether the meaning of each construct was clear or not. Reverse-coded items were removed as per the feedback received for the Tangibles and Convenience.

An online pilot survey questionnaire was administered and shared with the respondents who had recently completed their journey via railways. The respondents were asked to fill out the survey based on their recent experience of traveling through railways. A total of fifty-nine respondents were qualified and completed the questionnaire and the reliability and validity test of the responses received were done. All the dimensions achieved the prescribed level of Cronbach's alpha, composite reliability (CR), and average variance extracted (AVE). As recommended by Hair et. al., (2006) and Nunnally (1978) Cronbach's Alpha value above 0.8 is better and value in between 0.7 to 0.8 is good. For good reliability, composite reliability should be higher than 0.7, and Average Variance extracted should be above 0.5 (Srinivasan et al., 2002). Here, all the given values in Table 4.1 meet the required values and hence qualifies the tests.

Table 4.1 Pilot Study Reliability and Validity Results

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Behavioural Intention	**0.827**	**0.887**	**0.664**
Convenience	**0.800**	**0.882**	**0.713**
Covid Measures	**0.874**	**0.908**	**0.665**
Personal Service	**0.864**	**0.907**	**0.710**
Reliability	**0.842**	**0.893**	**0.676**
Safety	**0.793**	**0.866**	**0.618**
Passenger Satisfaction	**0.867**	**0.909**	**0.715**
Tangibles	**0.875**	**0.914**	**0.726**

Figure 4.3 Loadings



CHAPTER 5: RESULTS

5.1 Main Study

Final survey was developed based on the changes identified from the pre-test and main study was carried out on the final questionnaire of survey. Main study was carried out on the responses gathered from 224 respondents. The key characteristics of the sample are presented below in Table 5.1.

Table 5.1 Sample Characteristics

Category	Sub-Category	Frequency	Percentage
Gender	Male	138	61.6%
	Female	85	37.9%
	Others	1	0.4%
Age	18 - 30 years	174	78%
	31 - 50 years	41	18%
	Above 50 years	9	4%
Frequency of Travel	1-2 times	140	63%
	3-5 times	52	23%
	more than 5 times	32	14%
Purpose of Travel	Business	17	8%
	Holiday/Vacation	41	18%
	Educational	60	27%
	Family	60	27%
	Others	22	10%
	Work	24	11%
Class of Travel (Mostly used)	Sleeper Class (SL)	70	31%
	Three Tier Air-Conditioned Class (3A)	91	41%
	Two-Tier Air-Conditioned Class (2AC)	51	23%
	First Class Air Conditioned (1AC)	12	5%
Occupation	Student	135	60%
	Government Employee	27	12%
	Private Sector Employee	26	12%
	Home Maker	15	7%
	Retired	4	2%
	Self Employed/Business	17	8%

Respondents were asked to fill up the survey to reflect their most recent journey via railways since the beginning of the pandemic i.e., April 2020. It was found that highest number of respondents travelled through Three Tier Air-Conditioned Class (3A) followed by Sleeper Class (SL). Most of the respondents belonged to the age group of 18 to 30 years (78%). This could be due to the reason that older people are more endangered to Corona virus than the younger ones. Hence in order to avoid the risk of contracting COVID 19 they refrained from travelling. Further majority of the respondents are found to be students as they were stranded in different cities in which they studied. Several of the students also returned from their colleges which were shut down due to lockdown. In order to avoid common method biasedness, respondents were informed that (a) there were no right or wrong answer to any of the questions (b) the participation in the survey was voluntarily (c) the survey didn't collect personal detail of the respondents and each response was recorded as anonymous (d) the data collected would only be used for the study and academic purpose. Since the survey was online and there could be instances of duplicate filling, the settings were made accordingly to avoid multiple submission from same person.

5.2 Analysis and Results

In order to access the credibility of research outcomes and findings it is imperative that the variables and the dimensions qualifies validity and reliability test before to be used in the test. In order to check reliability, Cronbach's alpha is considered to be the most common measure (Field & Meile, 2008) to scale reliability. It measures the extent to which all the variables in the scale are positively related to each other or simply put are inter-related. Cronbach's

alpha value is assumed in between 0 to 1 and a value higher than 0.7 is recommended and is considered to be good (Hair et. al., 2006; Nunnally 1978). All the alpha values as shown in Table 5.2 are greater than 0.7 and indicates that the measures are reliable and internally consistent. In order to assess Convergent Validity, the loading of Composite Reliability (CR), average variance extracted (AVE) are evaluated. CR value ranges from 0 to 1 and a value 0.7 or above means that there is adequate consistency and good reliability (Gefen et. al., 2000). Table 5.2 shows that all the variables have CR value above 0.7 in this study. In general CR greater than 0.7 and AVE higher than 0.5 indicates that the reliability of the study is good. As per Bagozzi & Yi (1998) and Fornell & Larcker (1981) AVE value greater than 0.5 is recommended for the study. As seen in the Table 5.2, all the values corresponding to AVE of variables are higher than 0.5 indicating that the latent variables have an ideal convergence validity.

Table 5.2 Main Study Reliability and Validity Results

Constructs	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Behavioural Intention (BI)	**0.863**	**0.908**	**0.711**
Convenience (C)	**0.724**	**0.844**	**0.643**
Covid Measures (CM)	**0.899**	**0.925**	**0.713**
Personal Service (ES)	**0.861**	**0.905**	**0.705**
Reliability (R)	**0.827**	**0.885**	**0.658**
Safety (S)	**0.779**	**0.860**	**0.612**
Passenger Satisfaction (PS)	**0.894**	**0.926**	**0.759**
Tangibles (T)	**0.856**	**0.903**	**0.700**

Further to evaluate discriminant validity AVE values of all the constructs are examined to check whether AVE values of each dimensions is higher than the inter construct correlations. In the table 5.3 the diagonals correspond to the square root values of AVE value of each dimension while the off-diagonal values are the correlations between the latent constructs. From the Table 5.3 it can be observed that the square root of the latent variables AVE value is higher than the correlation value among the latent variables indicating that the discriminant validity of the latent variables meets the standard.

Table 5.3 Main Study Discriminant Validity

Constructs	BI	Convenience	Covid Measures	Personal Service	Reliability	Safety	Satisfaction	Tangibles
BI	**0.843**							
Convenience	0.582	**0.802**						
Covid Measures	0.455	0.482	**0.845**					
Personal Service	0.438	0.514	0.449	**0.840**				
Reliability	0.460	0.465	0.457	0.605	**0.811**			
Safety	0.465	0.583	0.462	0.561	0.448	**0.782**		
Satisfaction	0.715	0.581	0.558	0.529	0.537	0.558	**0.871**	
Tangibles	0.464	0.658	0.426	0.566	0.431	0.606	0.492	**0.836**

In order to confirm the relationships between the items and the latent constructs, a confirmatory factor analysis is used in the study. The values in the Table 5.4 confirms that all the items represent their respective construct and confirm uni-dimensionality. According to Matsunaga (2010), a factor loading value should be above 0.5 and loaded values in Table 5.4 satisfies the criteria.

Table 5.4 Confirmatory Factor Analysis (CFA)

Variables	Behavioural Intention	Convenience	Covid Measures	Personal Service	Reliability	Safety	Passenger Satisfaction	Tangibles
BI1	**0.781**							
BI2	**0.902**							
BI3	**0.826**							
BI4	**0.859**							
C1		**0.844**						
C2		**0.813**						
C3		**0.746**						
CM1			**0.793**					
CM2			**0.840**					

CM3	**0.825**					
CM4	**0.882**					
CM5	**0.879**					
ES1		**0.856**				
ES2		**0.850**				
ES3		**0.818**				
ES4		**0.834**				
R1			**0.855**			
R2			**0.816**			
R3			**0.784**			
R4			**0.787**			
S1				**0.859**		
S2				**0.831**		
S3				**0.552**		
S4				**0.845**		
PS1					**0.880**	
PS2					**0.877**	
PS3					**0.839**	
PS4					**0.888**	
T1						**0.873**
T2						**0.828**
T3						**0.846**
T4						**0.797**

5.3 Hypothesis Testing and Results

Customer satisfaction and Behavioral Intention of Indian passengers towards in-train services offered by Indian Railways have been examined with the help of modified SERVQUAL model and additional dimension – COVID Precautionary Measure. The result has been obtained based on 224 valid responses received from people who have travelled via railways since the start of the Pandemic i.e., April 2020. Railways after being shut down for almost a month was started to resume passenger service in a structural way. Following are the results after analysis of the responses. This study was one of its kind as it focused only on the in-train services provided by Indian Railways during the pandemic.

Personnel Service Positively impact customer satisfaction and behavioral intention.

$H_{1.1a}$ = Personnel Service has positive impact on customer satisfaction for in-train services.

$H_{1.1b}$ = Personnel Service has positive impact on behavioral intention of customers for in-train services.

The results revealed that Personnel service proposed no significant impact on the overall satisfaction as well as behavioral intention of the customers for in-rain services. Personnel service consisted of courtesy, appearance, knowledge and service attitude of the coach attendant available. The result could be due to the fact that during the pandemic passengers could have avoided or had very little interaction with the attendant. Also, railways have stopped allowing waitlisted ticket holders[8] to board the train so ticket checking as well as assisting those passengers and linen service used to be two of the major responsibilities of the coach attendant which were not there during COVID. Absence of these might have resulted into personnel service having no impact on the customer satisfaction as well as behavioral intention of the passengers.

Reliability Positively impact customer satisfaction and behavioral intention

$H_{1.2a}$ = Reliability has positive impact on customer satisfaction for in-train services.

$H_{1.2b}$ = Reliability has positive impact on behavioral intention of customers for in-train services.

The results indicated that reliability is an important factor in service quality dimensions and have a positive and significant impact on customer satisfaction and behavioral intention towards in-train services. Parauranaman et. al., defined reliability as the ability to perform services required by the customers. In the study, reliability consisted of dimensions handling of complaint, on time response and online responsiveness. The parameter is in consistent with the results from the previous studies (Refer Annexure A2). It is imperative for any business especially in service sector to pay heed to the complaints and act upon them as these influences the overall experience of the customer and their attitude towards a service.

Tangibles Positively impact customer satisfaction and behavioral intention

$H_{1.3a}$ = Tangibles has positive impact on customer satisfaction for in-train services.

$H_{1.3b}$ = Tangibles has positive impact on behavioral intention of customers for in-train services.

[8][Online Article] Zee Business (2021)

The results from the study indicated that tangible dimension had no significant impact on the customer satisfaction as well as their behavioral intention towards in train services. The dimension consists of all the physical facilities available on the coach.

Convenience Positively impact customer satisfaction and behavioral intention

$H_{1.4a}$ = Convenience has positive impact on customer satisfaction for in-train services.

$H_{1.4b}$ = Convenience has positive impact on behavioral intention of customers for in-train services.

Based on the results from the study it is observed that convenience have a positive and significant impact on customer satisfaction and behavioral intention. The result is consistent with most of the studies done related to railways and transportation. The result indicates that ease of access to facilities, comfort and availability of attendant positively influences the overall satisfaction as well as behavioral intention towards in-train services offered.

Safety Positively impact customer satisfaction and behavioral intention

$H_{1.5a}$ = Safety & Security has positive impact on customer satisfaction for in-train services

$H_{1.5b}$ = Safety & Security has positive impact on behavioral intention of customers for in-train services.

The results shows that safety and security have a positive and significant impact on the customer satisfaction but there is no positive impact on the behavioral intention of the customers towards in-train services. The result indicates that safety of belongings, crowding in train and personal safety influences the overall satisfaction perceived by the customers. The result is consistent with several of the studies focusing on safety in public transit and railways. The result is in-consistent with one study where safety was not identified as a determinant of customer satisfaction (Rajeswari, 2014).

COVID Measures Positively impact customer satisfaction and behavioral intention

H_{2a} = Covid 19 precautionary measures have a positive impact on customer satisfaction for in-train services.

H_{2b} = Covid 19 precautionary measures have a positive impact on behavioral intention of customers for in-train services.

From the results it is quite evident that COVID 19 measures has a significant positive impact on the customer satisfaction and behavioral intention. Due to the ongoing pandemic, commuters have become increasingly concerned about the measures taken by the service provider to decrease the risk of contracting corona virus. With the world adapting to the "new normal", commuters are putting more priority to the pandemic related factors like the measures taken by the service provider, passengers etc. while choosing a mode of transport and tend to avoid public transport (Abdullah et. al., 2020) (Bhaduri et. al., 2020).

H_3 = Customer Satisfaction has positive impact on behavioral intention of customers for in-train services.

Kuo & Tang (2011) stated that customer satisfaction has a direct impact on behavioral intention of the customers. The findings of this study are in accordance with the same with customer satisfaction having positive impact on the behavioral intention of the customers. The findings echo the result of Liang & Zhang (2011) that customer satisfaction impacts the customer behavioural intention.

Table 5.5 Hypothesis Testing Results (N=224)

Codes	Structural Path	Path coefficient	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Decision
H1.1a	Employee Service -> Satisfaction	0.092	0.084	1.095	**0.274**	Not supported
H1.1b	Employee Service -> BI	0.030	0.092	0.322	**0.748**	Not supported
H1.2a	Reliability -> Satisfaction	0.186	0.071	2.606	**0.009**	Supported
H1.2b	Reliability -> BI	0.160	0.080	2.003	**0.045**	Supported
H1.3a	Tangibles -> Satisfaction	-0.002	0.078	0.026	**0.979**	Not supported
H1.3b	Tangibles -> BI	0.034	0.085	0.402	**0.687**	Not supported
H1.4a	Convenience -> Satisfaction	0.227	0.074	3.065	**0.002**	Supported
H1.4b	Convenience -> BI	0.351	0.086	4.062	**0.000**	Supported
H1.5a	Safety & Security -> Satisfaction	0.182	0.071	2.561	**0.010**	Supported
H1.5b	Safety & Security -> BI	0.083	0.078	1.064	**0.287**	Not supported
H2a	Covid Measures -> Satisfaction	0.239	0.066	3.649	**0.000**	Supported
H2b	Covid Measures -> BI	0.146	0.072	2.030	**0.042**	Supported
H3	Satisfaction -> BI	0.546	0.061	8.976	**0.000**	Supported

CHAPTER 6: DISCUSSIONS & CONCLUSION

6.1 Discussion and Way Forward

Service improvement is one of the approaches to improve the competitiveness of Indian Railways. Due to the pandemic people are shifting towards private vehicles for commute and with increased road connectivity people are opting for roadways as their mode of choice since they feel that private cars

are safest mode of travel amid COVID and the use of shared mobility has dropped by 35% (Meena, 2020). So, it has become imperative that the service quality of Indian Railways is improved. Main objective of the study was to identify the dimensions influencing the customer satisfaction and behavioral intention of the customers of Indian Railways amid pandemic. The result provides statistical evidence that the identified dimensions which has a positive impact for customer satisfaction towards in-train services are reliability, convenience, safety & security, covid measure while the dimensions having positive impact on behavioral intentions of the customers are reliability, convenience, covid measures and customer satisfaction. No significant influence is observed on customer satisfaction or on behavioral intention due to tangibles which is in contrast with the findings of Ranjan et. al., (2020) study which stated that the most important factor of customer satisfaction towards in-train services is cleanliness of toilets. Same result is observed for the employee service which has no significant positive impact on customer satisfaction or on behavioral intention. The result for tangibility follows the similar result found by Vanniarajn & Stephen (2008) in which out of the 5 identified RAILQUAL factors only Tangibles didn't have significant influence on passenger satisfaction. Although result with customer satisfaction is in contrast with the study conducted by Agarwal (2008) but the result for behavioral intention is in accordance with the result that staff service have less influence on customer loyalty for rail transit by Shen et. al., (2016). The determinants for customer satisfaction as identified by Rajeswari (2014) which had a positive impact on the customer satisfaction towards Indian railway service were assurance, responsiveness, tangibility and catering.

The findings from this study could help railways to identify the factors majorly influencing and focus on improving them to increase overall customer satisfaction for the in-train services provided. The results from the study could be used to further improve the service quality offered in order to regain customers after pandemic.

6.2 Limitation and Future Scope

The findings from the study done have certain limitation. Starting with the samples which mostly consisted of students who accounted for 60% of the total sample size. Secondly the study uses snowball sampling technique where one of the major disadvantages is that the researcher has very little control over the method. Since the initial candidates pass nominate other people and pass on the survey there is a fear of sampling biasedness. The time frame to conduct survey and the inability to administer the survey and queries in person acted as a limitation. Further the sample size was small which could be increased to get better results as number of people travelled through railways increases.

The study encompasses certain dimensions of the in-train services and future research could be carried out by adding more dimensions. Further due to closing down of two of the main in train services linen and catering service limits the study. Future study could be carried out incorporating these once these services are resumed. The study uses a modified SERVQUAL model and future study could be carried out by redesigning the existing constructs based on the traditional SERVQUAL and RAILQUAL model proposed by Parasuraman et. al (1988) and Prasad & Shekhar (2010).

6.3 Conclusion

Several studies have been done on the overall satisfaction perceived by the customers from the service offered by Indian Railways as well as numerous dedicated studies are available on the evaluating the satisfaction of the consumers from platform-based amenities of specific platforms. In-train services has been neglected or taken as one of the dimensions to evaluate overall satisfaction of the consumers. People who are availing the railway service spends most of their time inside train and thus in-train services have a significant impact on their overall satisfaction. (Prasad and Shekhar 2012). The study focused on in-train services and proposed a conceptual framework and identified 5 dimensions to evaluate customer satisfaction based on the existing SERVQUAL and RAILQUAL which were modified. The identified dimensions were employee service, reliability, tangibles, safety & security, convenience. Another dimension was identified COVID Measures. Survey was done to gather response of people who have travelled since the start of pandemic via railways and their ratings were recorded on a likert 5-point scale for the constructs of these dimensions. Hypothesis have been proposed to evaluate the influence of these 6 dimensions on customer satisfaction. Out of the 6 dimensions, 4 dimensions had positive influence on passenger satisfaction. Similarly, hypothesis was proposed to test the influence of these 7 identified dimensions on behavioral intention and it was found that out 7 dimensions, 4 dimensions had positive influence on behavioral intention of consumer towards in-train services.

The proposed framework will enable Indian Railways to gather more insights on the services which have major influence on customer satisfaction and on behavioral to improve on the service and provide enhanced service quality to the commuters. The study could be further extended to include the linen service and catering service parameter as different dimension or under the following dimensions to have record better insights for customer satisfaction and behavioral intention of commuters of life line of India.

Appendix

Descriptive Survey Response

		VERY POOR		POOR		AVERAGE		GOOD		VERY GOOD	
	Employee Service	N	%	N	%	N	%	N	%	N	%
ES1	Courtesy of Employees	4	2%	17	8%	77	34%	101	45%	25	11%
ES2	Service Attitude of Employee	5	2%	22	10%	78	35%	93	42%	26	12%
ES3	Knowledge of Employee	8	4%	29	13%	78	35%	86	38%	21	9%
ES4	Appearance of Employee	9	4%	22	10%	76	34%	98	44%	18	8%
	Reliability	N	%	N	%	N	%	N	%	N	%

R1	Handling of Complaint	13	6%	31	14%	69	31%	91	41%	19	8%
R2	On Time Response to Complaints or Queries	10	4%	40	18%	80	36%	71	32%	22	10%
R3	Online Responsiveness (For Services Like Coach Mitra)	10	4%	20	9%	89	40%	76	34%	27	12%
R4	Dependability of Staff	7	3%	23	10%	87	39%	85	38%	20	9%
	Tangibles	N	%	N	%	N	%	N	%	N	%
T1	Cleanliness of Coach	8	4%	21	9%	73	33%	93	42%	28	13%
T2	Cleanliness of Seating Area	8	4%	25	11%	70	31%	95	42%	24	11%
T3	Cleanliness of Toilets	28	13%	52	23%	83	37%	50	22%	10	4%
T4	Availability of Dustbins for Waste Disposal	22	10%	47	21%	69	31%	68	30%	17	8%
	Convenience	N	%	N	%	N	%	N	%	N	%
C1	Ease of Access to In Train Facilities	4	2%	18	8%	74	33%	109	49%	19	8%
C2	Comfort at Seating Area	6	3%	25	11%	72	32%	92	41%	27	12%
C3	Availability of Coach Attendant	17	8%	39	17%	80	36%	72	32%	15	7%
	Safety & Security	N	%	N	%	N	%	N	%	N	%
S1	Personal Safety in Train	5	2%	29	13%	71	32%	86	38%	32	14%
S2	Safety of Belongings	9	4%	32	14%	82	37%	72	32%	28	13%
S3	Over-Crowding in Train	27	12%	45	20%	76	34%	50	22%	24	11%
S4	Over-all Safety During Journey	7	3%	26	12%	85	38%	81	36%	24	11%
	COVID 19 Measures	N	%	N	%	N	%	N	%	N	%
CM1	Level of Covid Screening before boarding the train.	24	11%	52	23%	70	31%	67	30%	10	4%
CM2	Level of Sanitization during your travel.	22	10%	47	21%	75	33%	67	30%	12	5%
CM3	Precautionary Covid-19 measures by the in-train staff.	24	11%	35	16%	70	31%	76	34%	18	8%
CM4	Assuring Covid-19 protocol during your travel.	19	8%	37	17%	65	29%	79	35%	23	10%
CM5	Preparedness for Covid-19 emergency	21	9%	43	19%	74	33%	65	29%	20	9%

		Strongly Disagree		**Disagree**		**Neutral**		**Agree**		**Strongly Agree**	
	Over All Satisfaction	N	%	N	%	N	%	N	%	N	%
PS1	In general, I am satisfied with the privatized train service	6	3%	20	9%	62	28%	112	50%	22	10%
PS2	The in-train service meets my expectations	5	2%	27	12%	65	29%	99	44%	27	12%
PS3	I feel that the commuting needs of inhabitants are well covered by in-train service	4	2%	23	10%	70	31%	101	45%	25	11%
PS4	I feel satisfied when I take in-train service.	8	4%	24	11%	56	25%	105	47%	29	13%
	Behavioural Intention	N	%	N	%	N	%	N	%	N	%
BI1	I will use in-train service for my future trips	6	3%	12	5%	54	24%	109	49%	41	18%
BI2	I will recommend others to use in-train service	6	3%	26	12%	82	37%	78	35%	31	14%
BI3	I will say positive things about in-train services	5	2%	23	10%	83	37%	87	39%	26	12%
BI4	I will encourage others to use in-train services	7	3%	28	13%	75	33%	81	36%	31	14%

REFERENCES :

1. Abdullah, M., Dias, C., Muley, D., & Shahin, M. (2020). Exploring the impacts of covid-19 on TRAVEL behaviour and mode preferences. Transportation Research Interdisciplinary Perspectives, 8, 100255. DOI: 10.1016/j.trip.2020.100255
2. Agarwal, R. (2008). Public transportation and customer satisfaction. Global Business Review, 9(2), 257-272. DOI:10.1177/097215090800900206
3. Ahmadabadi, A. A., & Heravi, G. (2019). The effect of critical success factors on project success in public-private Partnership projects: A case study of highway projects in Iran. Transport Policy, 73, 152-161. DOI: 10.1016/j.tranpol.2018.07.004
4. Aimee, R. M. (2019). A thorough literature review of customer satisfaction definition, factors affecting customer satisfaction and measuring customer satisfaction. International Journal of Advanced Research, 7(9), 828-843. DOI:10.21474/ijar01/9733
5. Anuradha, J. (2014). A study on passenger's satisfaction towards railway services in Erode junction, 5(8), 10-15. Retrieved March, 2021, from https://www.academia.edu/download/40883045/A_STUDY_ON_PASSENGERS_SATISFACTION_TOWARDS_RAILWAY_SERVICES_IN_ERODE_JUNCTION.pdf
6. Ardani, W., Rahyuda, K., Giantari, I. G., & Sukaatmadja, I. P. (2019). Customer satisfaction and behavioral intentions in tourism: A literature review. International Journal of Applied Business and International Management, 4(3), 84-93. doi:10.32535/ijabim.v4i3.686
7. Bagozzi, R., & Yi, Y. (1988). On the Evaluation of Structure Equation Models. Journal of the Academy of Marketing Science, 16(1), 74-94.
8. Berry, L. L., Seiders, K., & Grewal, D. (2002). Understanding service CONVENIENCE. *Journal of Marketing, 66*(3), 1-17. DOI:10.1509/jmkg.66.3.1.18505
9. Berti, A. (2020, October 06). Private rail for India: A positive step TOWARDS Long-overdue reform? Retrieved March, 2021, from https://www.railway-technology.com/features/private-rail-india/
10. Bhaduri, E., Manoj, B., Wadud, Z., Goswami, A. K., & Choudhury, C. F. (2020). Modelling the effects of covid-19 on travel mode CHOICE behaviour in India. Transportation Research Interdisciplinary Perspectives, 8, 100273-100288. DOI: 10.1016/j.trip.2020.100273
11. Bujisic, M., Hutchinson, J., & Parsa, H. (2014). The effects of restaurant quality attributes on customer behavioral intentions. International Journal of Contemporary Hospitality Management, 26(8), 1270-1291. doi:10.1108/ijchm-04-2013-0162
12. Cheung, C. M., & Thadani, D. R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. Decision Support Systems, 54(1), 461-470. DOI: 10.1016/j.dss.2012.06.008
13. Chou, P., Lu, C., & Chang, Y. (2014). Effects of service quality and customer satisfaction on customer loyalty in high-speed rail services in Taiwan. Transport metric A: Transport Science, 10(10), 917-945. DOI: 10.1080/23249935.2014.915247
14. Dandotiya, R., Aggarwal, P., & Gopal, R. (2020). Impact of food and Beverage quality on passenger satisfaction in Indian Railways. International Journal of Customer Relationship Marketing and Management, 11(2), 37-52. DOI:10.4018/ijcrmm.2020040103
15. Dong, H., Ma, S., Jia, N., & Tian, J. (2021). Understanding public Transport satisfaction in post COVID-19 pandemic. *Transport Policy, 101*(C), 81-88. DOI: 10.1016/j.tranpol.2020.12.004
16. Dudovskiy, J. (n.d.). Snowball sampling [Web log post]. Retrieved May, 2021, from https://research-methodology.net/sampling-in-primary-data-collection/snowball-sampling/
17. Field, J. M., & Meile, L. C. (2008). Supplier relations and supply chain performance in financial services processes. International Journal of Operations & Production Management, 28(2), 185-206. DOI:10.1108/01443570810846892
18. Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. Journal of Marketing Research, 18(3), 382-388. DOI:10.1177/002224378101800313
19. Gefen, D., Straub, D., & Boudreau, M. (2000). Structural equation modeling and regression: Guidelines for research practice. Communications of the Association for Information Systems, 4(1), 7th ser. DOI:10.17705/1cais.00407
20. G., & Nandan, S. (2010). Determinants of Customer Satisfaction on Service Quality: A Study of Railway Platforms in India. Journal of Public Transportation, 13(1), 6th ser. DOI: http://doi.org/10.5038/2375-0901.13.1.6
21. Ghosh, P., Ojha, M. K., & G. (November, 2017). Determining passenger satisfaction out of platform-based amenities: A study of Kanpur Central Railway Station. Transport Policy, 60, 108-118. DOI: https://doi.org/10.1016/j.tranpol.2017.09.007
22. Grönroos, C. (1984). A service quality model and its marketing implications. European Journal of Marketing, 18(4), 36-44. DOI:10.1108/eum0000000004784
23. Gu, D., Guo, J., Liang, C., Lu, W., Zhao, S., Liu, B., & Long, T. (2019). Social media-based health management systems and Sustained HEALTH ENGAGEMENT: TPB PERSPECTIVE. International Journal of Environmental Research and Public Health, 16(9), 1495. DOI:10.3390/ijerph16091495
24. Guirao, B., García-Pastor, A., & López-Lambas, M. E. (2016). The importance of service quality attributes in public transportation: Narrowing the gap between scientific research and practitioners' needs. Transport Policy, 49, 68-77. DOI: 10.1016/j.tranpol.2016.04.003
25. Gupta, S., & Datta, R. (2012). Prioritizing service attributes for Quality up-gradation of Indian railway stations. The TQM Journal, 24(2), 167-180. DOI:10.1108/17542731211215116
26. Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006) Multivariate Data Analysis. Vol. 6, Pearson Prentice Hall, Upper Saddle River.
27. Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the internet? Journal of Interactive Marketing, 18(1), 38-52. DOI:10.1002/dir.10073
28. IRCTC orders closure of all onboarding catering services in Mail, Express trains from March 22. (2020, March 20). *The Economic Times*. Retrieved April, 2021, from https://economictimes.indiatimes.com/industry/transportation/railways/irctc-orders-closure-of-all-onboard-catering-services-in-mail-express-trains-from-mar-22/articleshow/74736446.cms?from=mdr

29. Iyer, S. (2019, January 21). In charts: How Indian railways has cut the number of employees in the last decade. Retrieved March, 2021, from https://www.businessinsider.in/seats-available-in-indian-railways-group-c-and-group-d-jobs-are-down-the-most/articleshow/67619669.cms
30. Jain, N. K., Gajjar, H., Shah, B. J., & Sadh, A. (2015). A conceptual framework for measuring e-fulfillment dimensions: A consumer perspective. Journal of Internet Commerce, 14(3), 363-383. DOI:10.1080/15332861.2015.1080056
31. Jain, S. (2021, January 30). In 5 charts: RAILWAYS poor finances & how to fix it - times of India. Retrieved March, 2021, from https://timesofindia.indiatimes.com/business/india-business/railway-budget-2021-indian-railways-operating-ratio-railway-finances-freight-passenger-revenue-working-expenses-explained/articleshow/80596908.cms
32. Kang *, S., Okamoto, N., & Donovan, H. A. (2004). Service quality and its effect on customer satisfaction and customer Behavioral intentions: Hotel AND RYOKAN guests in Japan. Asia Pacific Journal of Tourism Research, 9(2), 189-202. doi:10.1080/1094166042000233649
33. Kaura, V., Prasad, C. S., & Sharma, S. (2014). Impact of service quality, service convenience and perceived price fairness on customer satisfaction in indian retail banking sector. Management and Labour Studies, 39(2), 127-139. DOI:10.1177/0258042x14558188
34. Kavaliauskienė, I. M., Litvinenko, M., & Aranskis, A. (2014). Consumer Satisfaction with the Quality of Logistics Services. Procedia - Social and Behavioral Sciences, 110, 330-340. DOI: https://doi.org/10.1016/j.sbspro.2013.12.877
35. Kim, W. G., Ng, C. Y., & Kim, Y. (2009). Influence of institutional DINESERV on customer satisfaction, return intention, and word-of-mouth. International Journal of Hospitality Management, 28(1), 10-17. doi:10.1016/j.ijhm.2008.03.005
36. Kumar, K. S. (2012). Expectations and Perceptions of Passengers on Service Quality with Reference to Public Transport Undertakings. IUP Journal of Operations Management, 11(3), 67-81.
37. Kuo, C., & Tang, M. (2011). Relationships among service quality, corporate image, customer satisfaction, and behavioral intention for the elderly in high-speed rail services. Journal of Advanced Transportation, 47(5), 512-525. DOI:10.1002/atr.179
38. Liang, R., & Zhang, J. (2011). The effect of service interaction orientation on customer satisfaction and Behavioral intention: The moderating effect of Dining Frequency. Procedia - Social and Behavioral Sciences, 24, 1026-1035. DOI: 10.1016/j.sbspro.2011.09.082
39. Mardani, A., Zavadskas, E.K., Khalifah, Z., Jusoh, A., Nor, Khalil MD., December 2016. Multiple criteria decision-making techniques in transportation systems: a systematic review of the state-of-the-art literature. Transport 31
40. Maruvada, D. P., & Bellamkonda, R. S. (2012). The Effects of Individual Dimensions of Railway Service Quality: Findings from Indian Railway Passenger Services through Developing RAILQUAL. International Journal of Innovation, Management and Technology, 3(1), 42-45. DOI:10.1504/ijsom.2017.083761
41. Matsunaga, M. (2010). How to factor-analyse your data right: Do's, don'ts, and how-to's. International Journal of Psychological Research, 3(1), 97-110. DOI:10.21500/20112084.854
42. Meena, S. (2020). Impact of novel Coronavirus (COVID-19) pandemic on TRAVEL pattern: A case study of India. Indian Journal of Science and Technology, 13(24), 2491-2501. DOI:10.17485/ijst/v13i24.958
43. Nair, K. and Jain, Palak and Sachdev, Neelam and Jain, Dhiraj, Services Provided by Indian Railways – Is There a Need for Privatization? (November 10, 2013). Conference Proceedings of the International Conference ICRSB 2014, p. 290, March 2014, Available at SSRN: https://ssrn.com/abstract=2435492
44. Nunnally, J. C. (1978). Psychometric Theory (2nd ed.). New York: McGraw-Hill.
45. Paintal, S., & Jain, V. (2020, November 30). Privatization of Indian railways. Retrieved March, 2021, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3762351
46. Paintal, S., & Jain, V., Dr. (2020). Privatization of Indian Railways. http://dx.doi.org/10.2139/ssrn.3762351
47. Pandey, D. K. (2020, December 18). Railways incurs 87% loss in passenger revenue due to covid-19. Retrieved April, 2021, from https://www.thehindu.com/news/national/railways-incurs-87-loss-in-passenger-revenue-due-to-covid-19/article33364182.ece
48. Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988) SERVQUAL: A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, (vol. 64, pp. 12-40).
49. Prasad, M. D., & Shekhar, B. R. (2010). Development of Railqual: A Service Quality Scale for Measuring Indian Railway Passenger (Vol. 4, pp. 87-94, Rep. No. 3). Management Science and Engineering. http://dx.doi.org/10.3968/j.mse.1913035X20100403.009
50. Prasad, M. D., & Shekhar, B. R. (September, 2010). Impact of Service Quality Management (SQM) Practices on Indian Railways - A Study of South-Central Railways. International Journal of Business Management, 5(9). DOI: 10.5539/ijbm. v5n9p139
51. Ranjan, R. K., Thapar, N., Siddiqui, S. A., & Painoli, A. K. (2020). Assessing the service quality attributes affecting the satisfaction of the northern railway passengers: An empirical study. Journal of New Business Ventures, 1(1-2), 110-124. DOI:10.1177/2632962x20961052
52. Rajeswari, V. (2014). Satisfaction and service quality in indian railways - a study on passenger perspective. IOSR Journal of Economics and Finance, 4(1), 58-66. DOI:10.9790/5933-0415866
53. Richins, M. L. (1983). Negative word-of-mouth by dissatisfied consumers: A pilot study. Journal of Marketing, 47(1), 68. doi:10.2307/3203428
54. Sanyal, J., Roy, S., & Gupta, L. K. (2018). A Study on Consumer Satisfaction with regards to Service Quality of Indian Railways. Asian Journal of Management, 9(1), 113-119. Retrieved from https://ajmjournal.com/HTML_Papers/Asian%20Journal%20of%20Management__PID__2018-9-1-17.html
55. Shen, W., Xiao, W., & Wang, X. (2016). Passenger satisfaction evaluation model for urban Rail transit: A structural equation modelling based on partial least squares. Transport Policy, 46, 20-31. DOI: 10.1016/j.tranpol.2015.10.006
56. Sheikhalizadeh Heris, Mahboub. (2018). Re: What is the acceptable range for Cronbach alpha test of reliability? Retrieved from: https://www.researchgate.net/post/What-is-the-acceptable-range-for-Cronbach-alpha-test-of-reliability/5b858b10fdda4a8c4d44d995/citation/download.

57. Simarmata, J., & Ikhsan, R. B. (2017). Building customer retention in on-line transportation. Polish Journal of Management Studies, 15(2), 229-239. DOI: 10.17512/pjms.2017.15.2.21
58. Snowball sampling - chain referral sampling. (2009, April 24). Retrieved May, 2021, from https://explorable.com/snowball-sampling
59. Srinivasan, R., Lilien, G. L., & Rangaswamy, A. (2002). Technological opportunism and radical technology adoption: An application to e-business. Journal of Marketing, 66(3), 47-60. DOI:10.1509/jmkg.66.3.47.18508
60. Sureshchandar, G. S., Rajendran, C., & Anantharaman, R. N. (2002). The relationship between service quality and customer satisfaction – a factor specific approach. Journal of Services Marketing, 16(4), 363-379. DOI:10.1108/08876040210433248
61. T. (1995). Customer satisfaction index for mass transit industry [Scholarly project]. Retrieved March, 2021, from http://onlinepubs.trb.org/onlinepubs/archive/ studies/idea/finalreports/transit/Transit1_Final_Report.pdf.
62. Taber, K. (2017, June 07). The use OF cronbach's Alpha when developing and Reporting research instruments in science education. Retrieved May, 2021, from https://link.springer.com/article/10.1007/s11165-016-9602-2
63. Vanniarajan, T., & Stephen, A. (2008). Railqual and passenger's satisfaction: An empirical study in southern railways. Asia Pacific Business Review, 4(1), 64-75. DOI:10.1177/097324700800400107