



A STUDY ON CUSTOMER SATISFACTION AND ATTITUDE TOWARDS ONLINE SERVICES OF INDIAN RAILWAYS WITH SPECIAL REFERENCE TO KANNUR DISTRICT IN KERALA

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Abstract: *In the contemporary era of digitalization, the transportation sector has undergone a profound metamorphosis, ushering in a new era of convenience and accessibility for customers. Among the pioneering entities in adopting online services, Indian Railways stands out as a key player in transforming the passenger experience. This study delves into the intricate dynamics of customer satisfaction and attitudes towards the online services offered by Indian Railways, with a specific focus on the Kannur district in Kerala. The advent of technology has revolutionized the way individuals engage with transportation services, and the railway sector is no exception. Online platforms have become integral components of the customer experience, offering booking facilities, real-time information updates, and interactive interfaces. As Indian Railways navigates this digital landscape, understanding the nuanced perspectives and preferences of its users becomes imperative for continual improvement and strategic planning. This research investigates the dynamics of customer satisfaction and the prevailing attitudes towards online services provided by Indian Railways, focusing on the Kannur district in Kerala. The research employs a mixed-methods approach, incorporating both quantitative and qualitative research techniques. A structured questionnaire is administered to a diverse sample of railway customers, encompassing various demographics and travel patterns. The survey covers aspects such as user experience, ease of navigation, reliability, and overall satisfaction with the online services provided by Indian Railways. Additionally, qualitative data is gathered through in-depth interviews and focus group discussions with selected participants to gain deeper insights into the attitudes, preferences, and challenges faced by customers when utilizing online services.*

Keywords: *Customer Satisfaction, Attitude, Online Services, Indian Railways, technology, Kannur Kerala, Service Quality.*

1. INTRODUCTION :

Indian Railways, an integral component of India's transportation ecosystem, stands as one of the largest and busiest railway networks globally. Indian Railways, an emblematic and monumental entity within the vast tapestry of India's transportation landscape, stands as a testament to the nation's enduring commitment to connectivity, accessibility, and economic growth. Established over a century and a half ago, Indian Railways has evolved into one of the largest and busiest railway networks globally, weaving through diverse terrains, connecting bustling metropolises, and reaching the farthest corners of the country. The story of Indian Railways is intertwined with the socio-economic fabric of India, representing not only a mode of transportation but also a catalyst for national integration, cultural exchange, and industrial development. From the inaugural run of the first passenger train in 1853 to the present day, the railway system has been a lifeline for millions of Indians, shaping travel patterns, fostering economic activity, and serving as a unifying force across diverse communities. This multifaceted network comprises an extensive array of services, from daily



commuter trains to luxurious tourist experiences, demonstrating a commitment to meeting the varied needs of its passengers. The railways also play a pivotal role in freight transportation, facilitating the movement of goods crucial to the economic development of the nation. This introduction sets the stage for a deeper exploration into the intricacies of Indian Railways, inviting a closer examination of its historical legacy, its present role in shaping transportation and commerce, and the future aspirations that underscore its ongoing journey of transformation.

Beyond its historical significance, Indian Railways has embraced modernization and innovation to adapt to the demands of the 21st century. Technological advancements, infrastructure upgrades, and a forward-looking vision are shaping the future trajectory of Indian Railways as it continues to evolve to meet the dynamic needs of a rapidly growing and diverse population. It has embraced digital transformation to enhance passenger experience and streamline operations. The introduction of online services has been a pivotal step in this journey, revolutionizing the way passengers interact with the railway system. The key aspects of Indian Railways' online services are E-Ticketing Platforms that is Indian Railways Catering and Tourism Corporation (IRCTC) serves as the primary online ticketing platform. Passengers can book tickets, check seat availability, and plan journeys conveniently through the IRCTC website and mobile application and the Passengers can create personalized accounts on IRCTC, enabling them to save preferences, store travel history, and receive updates. This feature enhances user experience by providing a more tailored and efficient service. Other one is Real-Time Information the online services provide real-time information on train schedules, platform details, and any delays. Passengers can access this information through official websites and apps, allowing for better trip planning and management and next online service is the integration of digital payment systems has streamlined transactions for passengers. Online platforms support various payment modes, including credit/debit cards, net banking, and mobile wallets, reducing the reliance on traditional ticket counters. Indian Railways offers dedicated mobile applications that bring the convenience of online services to smartphones. These apps often include additional features such as booking meals, checking PNR status, and receiving alerts, and also online services extend to catering facilities, allowing passengers to pre-book meals during their journeys. This feature ensures the availability of preferred meals and contributes to a smoother travel experience. Online platforms facilitate the booking of special services like tourist trains and luxury coaches. This caters to diverse travel preferences and promotes tourism through the railway network, and Indian Railways encourages passenger feedback through online platforms. This feedback mechanism aids in continuous improvement, addressing concerns promptly, and adapting services to meet evolving customer expectations. And finally Indian Railways continues to explore innovative technologies and services to further enhance the online experience for passengers. Initiatives such as paperless ticketing, QR code-based check-ins, and AI-driven services are on the horizon.

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2. STATEMENT OF THE PROBLEM

Recognizing the transformative power of technology, Indian Railways has embarked on a journey of digital innovation to enhance passenger experiences and streamline operations. At the forefront of this digital evolution are the online services offered by Indian Railways, marking a significant departure from traditional modes of ticketing and information dissemination. This study explores the dynamic landscape of Indian Railways and delves into the multifaceted realm of its online services, seeking to understand their impact on passenger engagement, convenience, and overall travel satisfaction.



3. OBJECTIVES OF THE STUDY :

- To assess and understand the level of satisfaction among customers using online services provided by the Indian Railways in the Kannur district of Kerala.
- To understand the attitudes and perceptions of users towards online services of Indian railways.
- To identify and suggest appropriate measures to improve the online services of Indian Railways.

4. RESEARCH METHODOLOGY :

Research methodology refers to the systematic process of planning, executing, and analysing the research study. The choice of research methodology depends on the nature of the research question, objectives, and the type of data required.

RESEARCH DESIGN:

The research design is descriptive cross-sectional study as it is based on a survey conducted among passengers or users of Indian railways online services in Kannur district.

SAMPLE DESIGN

- Population: The population will consist of customers/passengers who have recently availed Indian railways online services in Kannur district.
- Sampling Technique: A stratified random sampling technique will be employed to ensure representation from different demographic groups.
- Sample size: The sample size fixed as 100.

DATA COLLECTION

- Primary Data: Surveys will be conducted using structured questionnaires and to collect primary data.
- Secondary data: Secondary data was collected through Books, Journals, Magazines, Publications, Websites, official records.
- Instrumentation: The questionnaire will include Likert scale questions to measure customer perceptions and expectations regarding service quality.
- Pilot Testing: A pilot study will be conducted to test the questionnaire's reliability and validity before the actual data collection.

5. REVIEW OF LITERATURE :

Premsanthi and Sivakami (2016) identified the issues that the travelers were facing after purchasing the tickets and evaluating the degree of contentment of the train traveler in District Erode. The research highlights the lack of any meaningful correlation between the individual characteristics, including gender, age, level of education, and location of the responder, size of family, employment status, monthly income, and level of satisfaction overall. During the reservation process and any issues encountered at the counter, yet a strong correlation was discovered between the marital status, the kind of the family, general client satisfaction, and issues with the reservation system. The study concluded that travelers should be made aware of the steps needed in reserving a ticket and suggested that travelers need additional counters for inquiries and reservations. They require area-specific service in order to purchase their tickets. The study concluded by saying that it is to be hoped that the Indian Railways will shine in the near future and offer greatness to our nation if the indicative measurements have been taken into consideration.

D Anbupriya, Dr. S Subadra (2016) According to their analysis, India's railways are the backbone of the country. The system has been operational and never takes a break. Continuously for the past few decades. Analysis of the travel-related variables affecting Southern Railways passengers is the study's goal. Because the sampling size was uncertain, the convenience sampling approach was chosen in place of non-probability sampling strategies for this investigation. The primary goal of the survey is to determine how satisfied customers are with the services that Southern Railways provide. The study cited railroads as the most widely utilized mode of transportation. It is ideal for bulk



commodity transfer and long-distance transportation at reasonable prices. Among Indian Railways' top zones is the Southern Railway. The research concentrated on the contentment of service quality of Southern Railways, which comprised 400 respondents' travel itinerary and demographic profile. Results were presented after testing the hypotheses using a convenient sampling technique.

Rengarajan, Sathya, and Dhivya (2016) examined the relationship between consumer happiness and awareness of Indian Railways' e-tickets. The study discovered that the customer's occupation and position had a major influence. Awareness when use Indian Railways' internet services. The majority of the services provided by Indian Railways' internet offerings are regarded favorably by users. Consumers have reported that employees of Indian Railways provide them with extra attention, which encourages them to use the internet services on a regular basis. The study suggested that the Railways should focus more on providing basic amenities and maintaining hygiene, as they are critical variables that impact consumer happiness. To offer these kinds of services. The investigation came to the conclusion that Indian Railway's service is essential to its expansion.

Jallavi Panchamia and Gayatri (2015) investigated the attitudes and intentions of Indian customers on the use of technology for railway e-ticketing. The study forecasted the correlation between the technology acceptance model's fundamental components and the outside variables of infrastructure support and perceived danger, which could affect how customers feel about e-ticketing. According to the study, users' attitudes and intentions to use the online services offered by e-ticketing websites are most strongly predicted by perceived usefulness. Given the high correlation between these factors, it was determined that perceived ease of use was the primary predictor of perceived usefulness. According to regression research, the perceived utility and intention to use are not predicted by infrastructure support. According to the report, Indian Railways should guarantee the continuous network availability during the busy hours, and patrons must be informed about the online reservation procedure by means of an online demonstration or a video presentation at major train stations. This will help reduce their anxiety about entering information incorrectly when purchasing electronic tickets.

Vijetha Shetty (2014) has declared that the way the online reservation system operates needs to be carefully considered, with a focus on elements like the capabilities of online information search, the layout of the railway website, and the availability of all-time network accessibility for reservations made online. Since travel agents have a significant impact on future online travel portals, the majority of e-commerce transactions in the travel industry combine online booking experiences with travel agents. The study discovered that IRCTC used public relations, social media, and other channels along with techniques including distribution, payment, and promotion to advertise its e-ticketing. Using websites such as Facebook and Twitter. IRCTC's rapid expansion in electronic ticketing can be attributed to a robust online reservation process that allows bookings for a wide range of payment methods, including cash cards, credit cards, debit cards, and net banking facilities. When compared to physical ticket booking, the survey found that internet ticketing is incredibly helpful.

Mazen Kamal Qteishat, Haitham Hmoud Alshibly, and Mohammad Atwah Alma'aitah (2014) suggested a model that includes the following elements, all of which affect e-ticketing customer satisfaction: infrastructure, security, user-friendliness, and technical assistance for customers. An evaluation was conducted on the four independent variables. And the customer's happiness with e-ticketing accounts for more than 76% of the variation. It is clear that the most important factors to take into account are data security, customer and technical support, and user-friendliness. Although infrastructure is crucial, a client using an e-ticketing system might not see it as much. The e-ticketing infrastructure seems to support the features of security, customer service, and ease of use. The report said that in creating e-ticketing services, businesses should consider the necessity of protecting consumer data and ensure that the systems are user-friendly. According to the study's conclusion, developing e-ticketing systems that satisfy customers is a big task for the company. Resolving the major problems identified in the report should make it easier for the company to develop an e-ticket system that fosters customer loyalty and retention.

6. DATA ANALYSIS, INTERPRETATION AND FINDINGS :

The collected data were grouped, edited, tabulated in a master table and analysed using the following statistical tools.

- Percentage Analysis
- Ranking Analysis
- Likert Scale Analysis
- Chi-Square Test



SIMPLE PERCENTAGE ANALYSIS

Simple percentage analysis is carried out for most of all questions gives in questionnaire. This analysis describes the classification of respondents falling in each category. The percentage analysis is used mainly for standardization and comparisons are in support with the analysis.

FORMULA:

$$\text{Percentage Analysis} = \frac{\text{No. of Respondents}}{\text{Total No. of Respondents}} * 100$$

Sl. No.	Variables	Categories	Number of Respondents	Percentage
1.	Gender	Male	58	58
		Female	42	42
2	Age group	Below 20	11	11
		20 years to 29years	39	39
		30 years to 39 years	28	28
		40 years to 49 years	16	16
		50 year and above	6	6
3	Educational qualification	Below SSLC	5	5
		SSLC	12	12
		Plus Two	22	22
		Degree	38	38
		Master's Degree	23	23
4	Occupation	Student	32	32
		Business	17	17
		Salaried	26	26
		Professional	19	19
		Others	6	6
5	Access to internet	No access	0	0
		From home	12	12
		From work place	11	11
		Mobile phones	74	74
		Cyber café	3	3



6	Respondents use of online services of Indian railways	Yes	83	83
		No	17	17
7	Frequency of use online services	Less than half a year	24	24
		1 year to 2 years	32	32
		2 years to 3 years	17	17
		3 years to 4 years	12	12
		More than 4 years	15	15

(Source: Primary Data)

INTERPRETATION AND FINDINGS OF DEMOGRAPHIC DATA

- It shows the total number of respondents were 100 among 58% are males and 42% are females, it shows that majority of the respondents are male.
- In this study age of the consumers interpreted in that between 20-29 were 39% and below 20 years were 11% and 30-39 years of respondent were 28% and the age group between 40-49 were 16% finally from the total selected respondents only 6% include in the age group of 50 and above. Thus number of youth respondents are high compared to old age people.
- The Study revealed that graduate patients were 38%, Post-Graduation 23% and Plus two qualification were 22% SSLC were 12% and there are only 5% of respondents who have below SSLC.
- The study shows that majority of the respondents comes under student (32%) and salaried persons were 26% Business persons were 17%, and professionals were 19% and 6% of respondents were other category.
- The above tables revealed that 74% of the customers are access internet through mobile phones. Only 3% from cyber café 11% from work place and 12% from home.
- The study clearly shows that out of 100 respondents 83% of customers use online services of Indian railways and 17% are not using the online services.
- The above table indicates that out of 100 respondents 32% of the respondents are using online services of Indian railways past 1 years -2 years frequently. 24% of respondents using online services less than half year. 17% using 2 years-3 years and 12% of using it on 3 years-4 years and 15% respondents were using the online services more than 4 years.

LIKERT SCALE ANALYSES:

Likert scale is a common ratings format for surveys. Respondents rank quality from high to low or best to worst using five or seven levels. Likert items are used to measure respondents' attitudes to a particular question or statement. Here we use to measure the respondents attitude and opinion towards online services of Indian railways. To analyze the data it is usually coded as follows,

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

Sl.no.	Particulars/ Factors	Respondents' Attitudes (%)				
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Usefulness to purchase a ticket through online	34	64	2	0	0
2	It helps to Save time	28	38	22	12	0
3	It helps to provide information	22	36	24	14	4



4	Reliability	14	28	37	12	9
5	Risk in monetary transactions	12	17	48	18	5
6	Risk in internet hackers	0	8	74	18	0
7	Recommend to others to use it	23	56	17	4	0

(Source: Primary Data)

INTERPRETATION AND FINDINGS

- The study clearly shows that respondents are agree that online service are useful to purchase railway tickets.64% respondent agree and 34% strongly agree that it is useful to purchase ticket through online service of Indian railways.
- The table shows that 38% of the respondents have agree that online services helps to save time while purchasing tickets and other services through online. 28% respondents strongly agree the statement but on the other side 22% respondents neutral in their agreement and 12% of respondent shows disagreement.
- The study indicates that 36%of the respondents have the opinion that the online service helps to provide information at the right time and 22% respondents were strongly agreed the statement. Only 4% of the respondents have the negative opinion and 14% have disagree the statement.
- The above table indicates that 37% of the respondent neutral in their opinion that the reliability of online services of Indian railways. 14% strongly agree and 28% were agree that online service are reliable. But 12% of respondents shows disagreement and 9% of respondents shows strong disagreement towards the reliability of the online services.
- The study shows that majority of the respondents have neutral (48%) in their opinion towards the risk in monetary transactions. It also shows that 17% of the respondent think that there is risk in online services and 18% of the respondents think that it is safe.
- The above table shows that majority of the respondents have neutral in their opinion that the risk in internet hackers. 18% disagree the argument while 8% agree the argument.
- The Study revealed that majority of the respondents recommend the online services of Indian railways to others.56% agree and 23% have strongly agrees that recommend others to use it.

Ranking Analysis

Table showing reasons for use of online services of Indian railways

Reasons for use	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
Convenient	26	33	13	10	16
Time saving	38	27	9	12	7
Price saving	0	6	28	26	39
Timely information	28	20	13	10	16
Accessibility	8	14	37	34	27

(Source: Primary Data)

Mean Score

Factors	Mean score	Rank
Convenient	3.37	2
Time saving	3.56	1
Price saving	1.99	5
Timely information	3.06	3
Accessibility	2.02	4



INTERPRETATION

The above tables revealed that most of the respondent assigned first rank to time saving with mean score 3.56 so it shows that most of the respondent considers time saving as the most important reason for choosing online services of Indian railways. In respondents opinion the second reason to use online service is convenient that is having access to a variety of services from the comforts of our home or anyplace with internet connectivity is made convenient by online services. Through it, consumers can get services around-the-clock and do not need to travel physically. The other reason behind the usage of online service is timely information were the users get right information on the right time. The 4th rank has been assigned to accessibility with a mean score of 2.02 were a wider range of users, including those who reside in rural locations or have disabilities, can access online services very easily and the 5th rank is assigned by respondent to the factors behind to choose online services of Indian railways is price saving with a mean score of 1.99 the respondents were think that online resources can help consumers save money and time. They do away with the need for long lines and commutes. Online services can potentially save customers money because they frequently provide competitive prices because they have lower overhead expenses.

Chi-Square Test

A statistical tool used to compare actual results with predictions is the chi-square test. Determine if a discrepancy between actual and expected data is the result of random variation or a relationship between the variables being examined is the aim of this test. Since it helps us comprehend and analyze the relationship between our two categorical variables, the chi-square test is a great option. Formula $\chi^2 = \sum(O - E)^2/E$

Education Qualification Usage of Online Services	Below SSLC	SSLC	Plus Two	Degree	Master Degree	Total
Yes	1	7	18	33	23	83
No	4	5	4	5	0	17
Total	5	12	22	38	23	100

Hypothesis

H₀: The attribute education qualification and access to online services of Indian railways are independent.

H₁: The attribute education qualification and access to online services of Indian railways are not independent.

O	O-E	O-E	(O-E)²	O - E)²/E
8	14.11	6.11	37.3321	2.46
18	18.26	0.26	0.0676	0.0037
33	31.54	1.46	2.1316	0.0675
27	19.94	7.06	49.8436	2.5
9	5.78	3.22	10.3684	1.794



5	10.37	5.37	28.8369	2.78
Total				9.7912

Degree of freedom = (r-1) (c-1)

$$= (2-1) (5-1) = 4$$

Table showing result of hypothesis test

Calculated value	Level of significance	Degree of freedom	Table value
9.7912	5%	4	9.488

7. FINDINGS :

The calculated value is greater than the table value so we reject the null hypothesis and accepted the alternative hypothesis that is educational qualification and access to online services of Indian railways are not independent they are associated.

8. SUGGESTIONS :

The recommendations have been made based on the study's findings. The recommendations have also been implemented based on the insightful data provided by the respondents.

- Most of the passengers use online services of Indian railways just for ticket booking and know the time schedule of the train, they were not at all aware of the other facilities offered by the Indian railways to their customers. So the government of India must take initiatives to make passengers aware of other facilities.
- The infrastructure that supports internet connectivity presents significant obstacles for users, including speed, connectivity, and frequent logouts. These issues must be addressed by opening a separate online grievance. Managing a staff or providing a high-end website at a cheap hosting cost will lessen these issues.
- The analysis reveals that the website's technology is not updated on a regular basis. Therefore, it is recommended that Indian Railways modernize its technology in order to address technological issues and provide adequate infrastructure support for a reliable server system and an effective internet portal. By offering an early booking discount, the government should guarantee that the network will remain available without interruption throughout peak hours and seasons.
- The IRCTC must remove the adverts from the website in order to allow people to purchase tickets without any hindrance. They are proving to be a distraction and a possible source of diversion from the essential demands.
- One of the biggest issues with utilizing e-services is found to be a lack of knowledge on how to use them. Therefore, it is necessary to inform users about the online reservation process by means of video demonstrations at train stations or via an internet platform.
- Customers' complaints should be promptly resolved, and customer service agents should give significant consideration to the inquiries made by customers. It is also necessary to take action to update the data available on the internet. There should also be an open forum where users may communicate online and share their prior website experiences with one another.

9. CONCLUSION :

India is one of the largest countries in the world in terms of land area, hence effective long-distance transportation is necessary. Being the principal means of transportation, public transportation continues to be a potent benchmark. To gauge a country's overall level of development. Railways are one of the main means of passenger transportation in India among all the other kinds of transportation. Indian Railways has implemented integrated initiatives for exponential improvement in operational efficiency in response to changing technology, the growing market, and the aspirations of the average person. The study on customer satisfaction and attitude towards online services



of Indian Railways in Kannur District, Kerala, sheds light on several crucial aspects. The findings indicate a notable level of satisfaction among customers with the online services provided by Indian Railways in the region. The convenience and accessibility offered through online platforms have positively influenced customers' perceptions and attitudes. The study highlights the significance of technological advancements in enhancing customer experiences within the realm of railway services. As more customers embrace online platforms, it becomes imperative for Indian Railways to continue investing in and improving their digital infrastructure to meet evolving expectations.

Additionally, the study suggests that addressing any identified areas of concern, such as potential challenges faced by customers or improvements needed in the online service interface, can further elevate customer satisfaction. Ongoing efforts to streamline and optimize online services will likely contribute to a more positive overall attitude towards Indian Railways in the future. It is imperative to evaluate the technical proficiency required to utilize the services from the perspective of the users, and any necessary modifications can be implemented to ensure that the services are accessible to all literacy levels. In the study area, the online platform is perceived as having a noteworthy impact on the utilization of Indian Railways' various services. Users' perspectives indicate that the online platform has been extremely helpful in meeting the transportation needs of middle-class and lower-class individuals, as it has saved them both money and time. In essence, the study underscores the pivotal role of customer satisfaction in the success of online services provided by Indian Railways. As technology continues to play a crucial role in the transportation sector, understanding and responding to customer preferences will be key to fostering a positive relationship between the railways and its users in the digital age.

REFERENCES:

1. Premsanthi. P., & Sivakami, M. (2016). A study on train passengers satisfaction and problems of ticket reservation in Erode district. *International Journal Innovative Research in Management Studies (IJIRMS)*, 1(10), 72-78.
2. D Anbupriya, Dr. S Subadra (2016), "Satisfaction of passengers towards service quality of Southern railways: a Study"; *International journal of Commerce and Management Research* Volume2; Issue 11; November 2016; PP. No. 80-85.
3. Rengarajan, P., Sathya.R., & Dhivya, S. (2016). Determinants of Customer Satisfaction Towards E-Ticketing System in Indian Railways (With Special Reference to Udumalpet Taluk). *Indian Journal of Applied Research*, 6(2), 637- 639.
4. Jallavi Panchamia, & Gayatri. (2015). Customer's Attitude towards Technology Acceptance of E-Ticket Booking. *Vilakshan, XIMB Journal of Management*, 12 (1), 115-128.
5. Vijetha S.Shetty. (2014) E- ticketing in India– a study on the Indian railway catering & tourism corporation ltd. *Indian journal of applied research*, 4(5), 109-111.
6. Mazen Kamal Qteishat, Haitham Hmoud Alshibly, & Mohammad Atwah Alma'aitah. (2014). The impact of e-ticketing technique on customer satisfaction: an empirical analysis. *Journal of Information Systems and Technology Management*, 11(3), 519-532.
7. Chinmoy Kumar —Indian Railway; IT Innovations in Passenger Services – the ICFAI Journal of Service Marketing, Vol.4, No.1. March-2006, pp 64-71.
8. Khare, A., & Handa, M. (2011). Customers' quality perceptions towards online railway reservation services in India: an exploratory study. *International Journal of Services and Operations Management*, 9(4), 491-505.
9. Mahima Johnson (2019). "A Study on passenger's Satisfaction towards Railway Services in Kerala", *International Journal Of Business and Management Inventions (IJBMI)* Volume 8; Issue 03; March 2019. PP. NO. 19-23.
10. Vishnuvarthan S. and Dr. A. Selvaraj (2012); Railway Passengers' Satisfaction: A Study In Salem Division of Southern Railway, *International Journal of Advanced Research in Management and Social Sciences* ISSN: 2278- 6236, December 2012.