

A Study On Passengers Satisfaction Towards Southern Railways Services With Reference To Chennai Railways Division

Dr.J. Arunachalam^{1*}, E. Janarthanan²

^{1*}Assistant Professor, Department of Commerce, Arignar Anna Government Arts college, Cheyyar.

²Ph. D Research Scholar (Part time), Department of Commerce, Annamalai University, Annamalai Nagar, 608 002.

Abstract

We live in a fast-growing world, where the means of travel are also developing rapidly. In all parts of the world, travel operators are competing to provide better facilities to their passengers. Indian Railways is one of the largest rail networks in the Chennai Railway Division. It was the world's second-largest transport organization under one management. It provides the most convenient and economical mode of transportation to millions of people in Chennai. Freight transport is the area where railways reap a huge amount of income. Operations of Indian Railways have a direct impact on passengers as they directly affect income generation. The Chennai Railway Division is a passenger-oriented division and earns greater revenue through passenger transit. In order to provide customized services, it is essential to understand the expectations and perceptions of the passengers with regard to the quality of services offered by the rail system. Thus, this study considers the satisfaction of daily passengers with various services offered by the Indian Railways. The primary and Secondary source includes data collected through questionnaire from 600 passengers in the Chennai Railway Division of Southern Railway.

Keywords: Indian Railway, Passenger Satisfaction, Daily Passengers, Services.

Introduction

Organizations and companies succeed, or fail, based on the quality and effectiveness of their employees. Today's successful firms recognize that to compete in global markets, they must have world class Human Resource managers who are active participants in strategic and operational decision. Whether they are reengineering the pay and benefits of the company or implementing Total Quality Management (TQM) programs, Human Resources Managers play a central role. Most importantly, the practice of Human Resource Management is undergoing a technological revolution. We speak now of managing not only human resources and capital, but also information and information systems. HR functions, from employee selection to benefits planning, are being redesigned to take advantage of advanced information technology. Quality is one of the key parameters in order to measure the performance of the products or services and even it is one primary indicator to organizational performance. It is meant to help the organization train, motivate and reward workers. It is also meant to ensure that the organizational goals are met with efficiency. The process not only includes the employees but can also be for a department, product, service or customer process; all towards enhancing or adding value to them. Nowadays there is an automated performance management system (PMS) that carries all the information to help managers evaluate the performance of the employees and assess them accordingly on their training and development needs. Earlier quality was considered only for the manufacturing sector but during the last couple of decades there is a tremendous growth in service sector around the globe and concept of quality has arisen in this sector. It is evident from the literature that now service sector has become one of the fastest growing sectors in global economy and the major reason is that now the American economy has become a service economy. Manufacturing and construction sector in United States employed 19.1% of the labour force which had been reduced from 26.1% in 1979 whereas service sector had employed 70% of the U.S labour in 1992. Service sector is growing in almost all the economies of the world and the similar growth trend can also be seen in the India. According to Indian Railways [3](2010-11), 25 % of the GDP is contributed by service sector (24.3%). Service sector has realized that service quality is the main source of gaining competitiveness and remains successful in the market [3] and many other researchers had emphasized that quality initiatives in the service sector had resulted in gaining sustainable competitive advantages. According to [1], it is evident from the EBSCO academic electronic database that only 15 studies had been conducted during 1989 to 1991 and 198 studies were conducted during 1997-1999 and 138 studies through 1999-2001, which indicates that concept of service quality has been increasingly important topic for the service industry. Hence, service quality is a subject that gains considerable interest of both the academicians and the service providers. Now the Service organizations had started putting their maximum effort towards customer-focused services and thus continuous performance improvement. As customer perception plays a significant role in order to measure service quality of the service provider and hence the performance of the organization. It is also evident from the literature that superior quality of services helps to gain customer satisfaction, loyalty, increased market share and thus increased productivity and

performance. In order to measure how customers perceive about the quality of public transport, there are some evidence from the literature that customers (passengers) perceive: that reliability, timing, frequency and fare , cleanliness and comforts , transport network and coverage which also includes the stoppages , safety issues and information system are considered to be important factors in order to evaluate the service quality. Evidences suggested quality of services leads to enhanced productivity and thus increase profitability, positive word-of-mouth, market share, return on investment and ultimately reduced costs that benefits the customers . This trend of evaluating the customer requirements and delivering services according to customer requirements is now seen in the developing countries.

This study aims to investigate the customers (passengers) perceptions about the service quality of only available public rail transport system in India. Demand for public transportation is high due to its rapid population growth. Trains, a major public transport, in India hold a unique position in the transportation sector of country and are considered to be the key determinant for the national growth. Transportation sector is still passing through its transformation stage as it is still insufficient to serve the fastest growing 140 Crores population of India. However, still with inadequate resources transportation sector is one of the growing sectors of Indian economy and contributing 24.42% of GDP. There is a growth in the road networks, development of new national highways and an additional motorways network; but rail transport system was lacking from the development and growth process. Most of the railway tracks were built before 1947 during the British rule in Indo-Pak. Rail transport system is a public sector rail transport service known as Indian Railways and is one of the oldest systems and is administered by the Government of India and runs under ministry of Railways. Indian railways are commonly referred to as the “as “Provide what is better” “Promote what is best” Preserve what is good”, by making movement of people and freight thought Indian at large scale. Currently, all major cities of India are connected with rail transport network. During the couple of decades rail transport system is towards its worst decline. Therefore, there is a dearth of research to measure the service quality in India in general and to measure the passengers’ perception about the quality of service delivered by the transport sector in particular. Uniqueness of this study is that there is no such work had been evident from the literature on this topic. Structural equation modeling (SEM), one popular technique, was employed to explore the relationship among the service quality attributes and passengers’ satisfaction. Starting on 16 April 1853, when the first train took off from Mumbai to Thane (a 33-km journey), Indian Railways became the fourth most extensive network globally, covering over 68,000 miles and meeting the needs of over one million 25 million passengers on average every day. In addition to passenger trains, Indian Railways provides freight, parcel services, and tourism. Indian Railways has 293,077 freight wagons, 12,729 locomotives, 76,608 passenger coaches, and 1.3 million employees (“Indian Railways Yearbook” 2019-2020). Since several thousand passengers travel daily, it is essential to assess the quality of services provided by the trains.

Furthermore, as air transportation has become affordable, passengers weigh the quality of services and convenience in train journeys against flight travel. With the increase in competition from air-conditioned road transportation and air transportation, Railways attempt to satisfy passenger by providing quality services in terms of ticketing, reservation, convenient seating and berth facilities, catering on the train, cleanliness, and so on. The Southern Railway, headquartered in Chennai, Tamilnadu, is one of the earliest zones of Indian Railways. It was formed on 14 April 1951 by merging three state railways. It has the following divisions Chennai, Madurai, Thiruchirappalli, Salem, Palakkad and Thiruvananthapuram. The Southern zone covers the states of Tamil Nadu, Kerala, Pondicherry and small portions of Andhra Pradesh and Karnataka. UNESCO’s world heritage site, Nilgiri Mountain Railway is under this zone. Kerala’s major railway stations are Thiruvananthapuram Central TVC, Quilon Junction, Kayamkulam Junction, Chengannur, Kottayam, Ernakulam Junction & Town, Calicut, Shornur Junction, Kannur, Palakkad Junction, Thrissur, and Alappuzha. Thiruvananthapuram Central (TVC) is the busiest station in the state.

Services Provided in Indian Railways:

1. sufficiency of seating space
2. lighting
3. fans
4. drinking water and sanitation
5. clarity of announcements
6. accuracy of announcements
7. frequency of announcements
8. reservation chart display
9. affordability of refreshments
10. quality of refreshments
11. quantity of refreshments
12. security of self
13. security of luggage
14. behavior of porters
15. behavior of railway staff

16. management of parking
17. Reservation/Booking and Refunding of Tickets.
18. Enquiry and Dissemination of information.
19. Catering Services
20. Passenger Amenities
21. Public Grievances Redressal
- 22 Assistance & Compensation in case of Accidents & Unusual Occurrences.

Review of literature

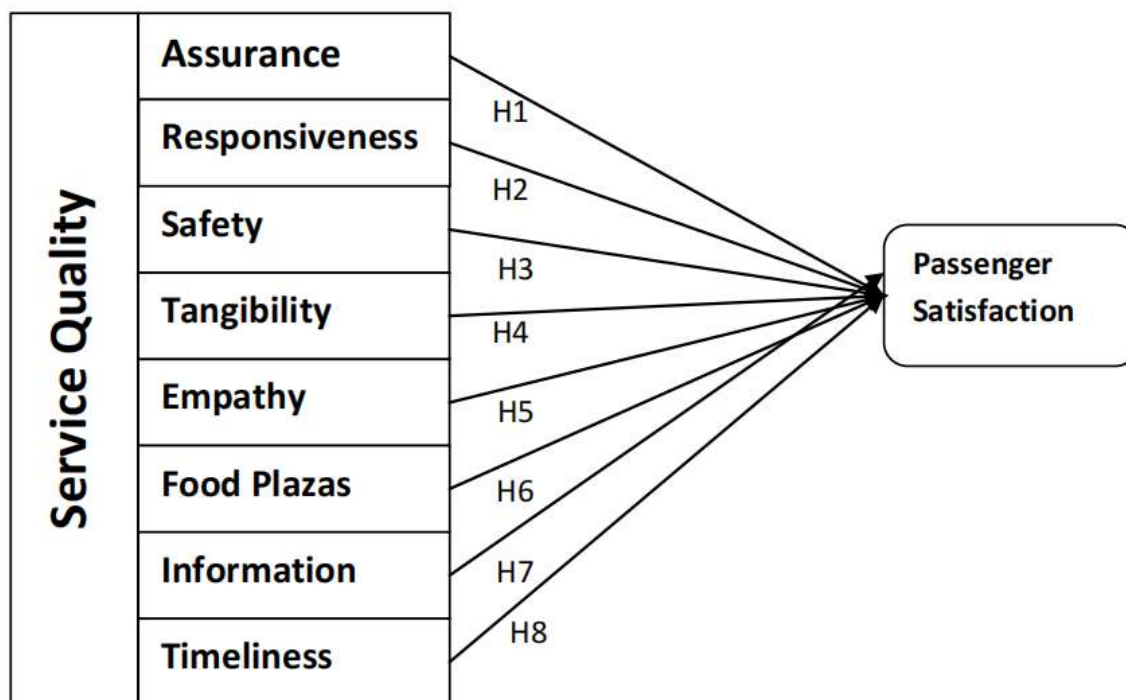
This section encompasses studies conducted by various researchers, presenting their valuable findings and suggestions. Anand K. Sharma & Mathew J. Manimala (2007) outlined in their study titled “Sustainability of the Indian Railways Turnaround: A Stage Theory Perspective” that there were both external and internal factors contributing to the declining performance of Indian Railways. They found that competition from road and air transport was increasing while the financial support from the central Government was inadequate. Vimal Kumar & Jitin P. (2015), in their study, “A Study on Passengers’ Satisfaction towards Railway services with reference to Coimbatore Junction,” concluded that service quality could be improved through proper and effective maintenance. They emphasized the importance of considering passengers’ perceptions in policy formulation and implementation. Christoph Wolff (2001) summarized that separating areas of manufacturing and catering from the core business of freight and passenger services could allow Indian Railways to focus more on the passenger satisfaction. Arpita Mukherjee and Ruchika Sachdeva (2004) suggested the formulation of a National Railway Policy to restructure the sector and fully utilize the existing resources. Their study, “Trade in Land Transport Services: Railways,” highlighted India’s significant export potential in maintenance and repair of rail transport equipment and related services.

Service quality can be described as a rationale of differences between expectation and competence along the important quality dimensions. Parasuraman, Zeithaml and Berry identified ten requirements useful for Passengers’ evaluation of the quality of services: reliability, responsiveness, tangibles, Information, Assurance, Empathy, Food plazas, timeliness, understanding the Passengers and service accessibility. Zeithaml, Parasuraman, and Berry proposed a service quality scale (SERVQUAL), a generic instrument that has 8 dimensions of service quality: reliability, responsiveness, assurance, empathy and tangibles, the constructs were found to have high correlation. This instrument continues to be widely used in marketing studies of customer satisfaction and consumer preference, despite some argument that other models may be better. The stage of performance that a top quality service will need to give was conditioned through the expectation of the customers. Service quality is judged low when the performance was below expectation. In the present study, a modified SERVQUAL instrument was employed to measure the service quality of railways.

SERVQUAL: Due to intangible in nature service quality is difficult to measure as compare to products and the characteristics of service appears to be difficult and considered as a complicated task. The first comprehensive service quality model was coined. He further stated that service quality is influenced by five gaps and earlier this model was known as gap model. Difference between customer expectations and management perceptions about the customer expectations were represented as „gap 1“, the difference between the management perceptions about the customer expectations and then translate these perception in to service quality specification was represented as „gap 2“, difference between the actual services delivered by the front line service employees on daily basis and the management specifications is represented as „gap 3“, the difference between the service delivery and what is promised to consumers in external communication is represented as „gap4“ and finally the difference between customer expectations and perceptions were represented as „gap 5“. SERVQUAL instrument was based on „gap 5. Later on came out with the 10 dimensions of service quality. These ten dimensions were then reduced to 5 dimensions namely; empathy, assurance, tangibles, reliability and responsiveness and these five constructs were further represented by 22 items. Today, SERVQUAL is most commonly used model in order to measure the service quality and it had been used in almost all the countries and in all types of industries. According to, SERVQUAL has been successful used in healthcare, fast food, banking, telecommunication, retail chains, information systems, library services and many countries around the globe like; USA, China, Australia, Cyprus, Hong Kong, Korea, South Africa, Netherland and UK

Rail Transport System in India: Rail transport system is the main public transport system in India and is administered by the Federal Government of India namely, Indian Railways. Rail transport system is connected with all the major cities of the country. Rail transport system is aiding movement of the people with lowest fare and the source of transportation from big cities like Delhi, Chennai, Mumbai, Kolkata, Bangalore and Hyderabad. Especially on these routes, a number of nonstop trains are operated in order to minimize the time and reduce the distances. According to Annual reports of Indian Railways, it carries about 8500 Million passengers per day and about 84,26 Lakhs passengers during the year of

2011-2012. Indian Railways is hence labelled as “Provide what is better” “Promote what is best” Preserve what is good” with is then true. The total length of the rail tracks is about 64,600 route kilometres covering 7146 railway stations in India. Indian Rail transport system is also connected with two neighbouring countries like Pakistan and Nepal. On the basis of the above discussion and through literature review the following eight hypotheses were developed.



- H1:** Assurance will have a significant impact on passenger satisfaction
- H2:** Responsiveness will have a significant impact on passenger satisfaction
- H3:** Safety will have a significant impact on passenger satisfaction
- H4:** Tangibility will have a significant impact on passenger satisfaction.
- H5:** Empathy will have a significant impact on passenger satisfaction
- H6:** Food plazas will have a significant impact on passenger satisfaction
- H7:** Information will have a significant impact on passenger satisfaction
- H8:** Timeliness will have a significant impact on passenger satisfaction

STATEMENT OF THE PROBLEM

It has been suggested that for some services the SERVQUAL instrument needs considerable adaptation and that items used to measure service quality should reflect the specific service setting under investigation, and that it necessary in this regard to modify some of the items and add or delete items as required. In summary, in order to measure the quality service thoroughly in the Railway passenger services the attributes used in SERVQUAL, the public transport industry and the railway service sector should be grouped together to form a pool items for measurement. Hence attributes in the SERVQUAL model were modified and some attributes were added through focus group discussions and the RAILQUAL instrument was developed for the measurement of Railway passenger Services. Our study is to know about the satisfaction of customers in southern railways in Chennai Railway division. And for that purpose a survey is conducted with passengers who are travelling in various trains of Chennai Railway division

Among the various modes of transport, railways are one of the biggest modes of passenger transport in the world. Indian Railways faces competitive threats from airlines, luxury buses, public transports, and personalized transports. Despite competition from various mode of transport, Indian Railways has unique features and provides extensive services to the passengers. With the increase in technological advancements, Indian Railways has started using the latest technology to make the service delivery process more efficient. In order to satisfy the passengers, Indian Railways provides various

services. However, passengers encounter some problems. Hence, the researcher in this study has attempted to answer the question “What are the problems faced by the passengers while travelling by train, at station and on board?”

Objectives Of the Study are:

1. To analyze the factors influencing the satisfaction level of the daily railway passengers.
2. To identify the socio-economic background of Railway passengers.
3. To analyze the gap between passenger expectations and perceptions of service quality.
4. To suggest the ways to improve the service quality offered by Southern Railway.

Scope of the Study

The study aims to identify the factors for Passenger Satisfaction regarding facilities provided by Chennai Railway Division. Customer Satisfaction has been commonly accepted as an indicator of Service Quality. The need of the Study is to identify important factors determining service quality of Chennai Railway Division that lead to Passenger Satisfaction. The Scope of the Study is to help the Chennai Railway Division to know about the perception of Passengers towards quality of Services provided by them. The study is mainly focused on the satisfaction level of the passengers with the services offered by Southern Railways. Every aspect related to railway service, such as ticket availability, quality of travel, staff behavior, safety, timing etc., is studied at different level of the research. The sample population is chosen from the Chennai Railway Division. The research is mainly conducted to assess the quality of the service proving by the Southern Railways.

Methodology

This research was carried out by to measure the service quality of Indian Railways based on passengers’ perceptions that are frequent travel on nonstop trains operated from Delhi to other big cities such as, Mumbai, Kolkata, Chennai, Bangalore and Hyderabad. A modified SERVQUAL instrument was used to develop the questionnaire for evaluation of service quality of Indian Railways on the basis of passenger’s perceptions. This questionnaire consists of eight constructs which include tangibles, assurance, Punctuality, responsiveness, empathy, safety, Catering, Information are representing the independent variables and passenger satisfaction is used as dependent variable.

This is an empirical research based on a survey method. The present study is restricted to the Chennai Railway Division of the Southern Railway. The data are obtained from both primary and secondary sources. The primary source includes data collected from 600 passengers through a structured questionnaire. Secondary Data It includes data collected from – IRTC website, Research Papers, Online Journals, newspaper and the internet.

GAP ANALYSIS OF PASSENGERS EXPECTATION PERCEPTION

S.No	Factors	Expectation Mean Score	Perception Mean Score	GAP
1	Railway staff easily understanding your needs & willing to help when you make inquiries.	2.22	2.00	0.22
2	Promptness in satisfying the request	2.56	2.23	0.33
3	Railway staff are too busy to respond	2.69	2.25	0.44
4	Prompt service to the passengers	9.57	2.34	7.23
5	Paying individual attention & customers best interest to all types of passengers	4.09	2.84	1.25
6	Availability of coach attendant/helper in the train	7.13	2.87	4.26
7	Understanding the needs of the passengers	14.2	8.93	5.27
8	Railway operations are convenient to all passengers.	17.01	8.73	8.28
9	Seating Arrangements, Sanitation, Fan and Lighting facility in train	15.83	7.25	8.58
10	Catering service in the train	6.76	2.78	3.98
11	Medical facility in the train	8.26	5.28	2.98
12	drinking water and clarity of announcements	5.75	4.25	1.5
13	Accuracy of announcements and frequency of announcements	5.95	3.75	2.2
14	Reservation chart display	4.95	3.75	1.2
15	Quality of refreshments and Quantity of refreshments	6.25	4.75	1.5
16	security of self	6.95	5.20	1.75
17	Security of luggage	6.67	5.35	1.32
18	Behavior of railway staff	7.03	5.76	1.27
19	Management of parking	8.27	6.75	1.52
20	Affordability of refreshments	6.22	4.95	1.27

Sources: Primary and Secondary data 2024

The above table reveals that there is a notable gap in assurance dimensions, with the high gap observed in two attributes like courtesy and communication with railway staff, the railway trustworthiness and personal safety during stations and journeys. These areas show a significant difference between customer expectation and satisfaction. Conversely, the lowest gap in this dimension pertains to knowledgeable staff available to answer questions. Indian railways should take necessary actions to address these issues.

Suggestion

The contribution of this study is the identification of factors that determine passenger satisfaction with services offered by the rail system. Availability of power, responsiveness of railway staffs (including TTE, booking clerk etc.), safety and security, digital display, and individualized attention to passengers are the factors considered most important by the passengers. The proposed model of customer satisfaction may be used as a basis to plan efforts towards increasing customer satisfaction. Improvement in sanitation facilities, catering facilities, infrastructures on the train, behavior of porters, responsiveness of railway doctors, Railway staff's knowledge in answering queries, punctuality of train services and understanding the needs of the passengers are required to enhance passenger satisfaction and improve the quality of rail system services.

Conclusion

The conceptual model developed and tested in this research provides a bird's eye view of passenger satisfaction with the service quality provided by Indian Railways. The data collected from 600 passengers from southern India revealed that four out of five dimensions of service quality are significantly related to passenger satisfaction. This study also revealed gender differences in passenger satisfaction concerning two dimensions tangibility and reliability. As service quality is an essential driver of customer satisfaction, the suggestions from the present study would help the administrators of Indian Railways in identifying the problems associated with the service quality and take necessary corrective actions. It is a real challenge for the administrators to improve the quality of services for passenger satisfaction. Despite some problems, Indian Railways remains one of the vital components of public transportation, serving the needs of several millions of passengers every day.

Reference

1. Fatma Pakdil and Timothy N. Harwood, 2005. Patient Satisfaction in a Preoperative Assessment Clinic: An Analysis Using SERVQUAL Dimensions, *Total Quality Management*, 16(1): 15-30.
2. Biema, V.M. and B. Greenwald, 1997. Managing our way to higher service-sector productivity, *Harvard Business Review*, July August, pp: 87-95.
3. Raghuram and Rachana Gangwar, "Indian Railways in the Past Twenty Years Issues, Performance and Challenges", W.P. No. 2008-07-05, 200
4. Gronroos, C., 1988. Service quality: the six criteria of good perceived service, *Review of Business*, 9(3): 10-13.
5. Stock, J.R. and D.M. Lambert, 1992. Becoming a „World Class“ company with logistics service quality, *The International Journal of Logistics Management*, 3(1): 73-81.
6. Kuei, C., 1998. Service quality, in: C.N. Madu (Ed.) *Handbook of Total Quality Management* (New York: Kluwer Academic Publishers).
7. Rapert, M.L. and B.M. Wren, 1998. Service quality as a competitive opportunity, *Journal of Service Marketing*, 12(3): 223-33.
8. Hadikoemoro, S., 2002. A comparison of public and private university students' expectations and perceptions of service quality in Jakarta, Indonesia, unpublished PhD dissertation, Nova Southern University, Davie, FL.
9. Berry, L.L., D.R. Bennet and C.W. Brown, 1989. *Service Quality: A Profit Strategy for Financial Institutions*. Dow-Jones-Irwin, Homewood, IL.
10. Reichheld, F.F. and W.E. Sasser, 1990. Zero defections: quality comes to service, *Harvard Business Review*, 68(5): 105-11.
11. Rust and Anthony J. Zahorik, 1993. Customer Satisfaction, Customer Retention and Market Share. *Journal of Retailing*, 69: 193-215.
12. Spreng, R.A. and R.D. MacKoy, 1996. An empirical examination of a model of perceived service quality and satisfaction. *Journal of Retailing*, 72(2): 201-14.
13. Cronin, J.J., M.K. Brady and G.T.M. Hult, 2000. Assessing the effects of quality, value and customer satisfaction on consumer behavioural intentions in service environment, *Journal of Retailing*, 76(2): 193-218.
14. Yoon, S. and H. Suh, 2004. Ensuring IT consulting SERVQUAL and user satisfaction: a modified measurement tool, *Information Systems Frontiers*, 6(4): 341-51.

15. Kang, G.D. and J. James, 2004. Service quality dimensions: an examination of Gro'nroos's service quality model, *Managing Service Quality*, 14(4): 266-77.
16. Tyrinopoulos, Y. and C. Antoniou, 2008. Public transit user satisfaction: Variability and policy implications. *Transport Policy*, 15: 260-272.
17. Hensher, D.A., P. Stopher and P. Bullock, 2003. Service quality-developing a service quality index in the provision of commercial bus contracts. *Transportation Research Part A*, 37: 499-517.
18. Swanson, J., L. Ampt and P. Jones, 1997. Measuring bus passenger preferences. *Traffic Engineering and Control*, 38: 330-336.
19. Eboli, L. and G. Mazzulla, 2007. Service quality attributes affecting customer satisfaction for bus transit. *Journal of Public Transportation*, 10: 21-34.
20. Eriksson, L., M. Friman and T. Gärling, 2009. Stated reasons for reducing work commute by car. *Transportation Research Part F: Traffic Psychology and Behavior*, 11: 427-433.
21. Smith, M.J. and R.V. Clarke, 2000. Crime and public transport. In: Tonry, M. ed. *Crime and Justice: A Review of Research 27*. Chicago: University of Chicago Press.
22. Fellesson, M. and M. Friman, 2008. Perceived satisfaction with public transport services in nine European cities. *The Journal of Transportation Research Forum*, 47: 93-103, Transit Issue Special.
23. Friman, M. and T. Gärling, 2001. Frequency of negative critical incidents and satisfaction with public transport services. II. *Journal of Retailing and Consumer Services*, 8: 105-114.
24. Sachdev, S.B. and H.V. Verma, 2004. Relative importance of service quality dimensions: a multi-sectoral study. *Journal of Services Research*, 4(1): 93-116.
25. V.A. Parasuraman, A. Zeithaml, L. Berry. A Conceptual Model of Service Quality and Its Implications for the Future Research. *Journal of Marketing*. 1985. Vol. 49, pp.41-50.
26. V.A. Zeithaml, A. Parasuraman, L.L. Berry. *Delivering quality service: Balancing customer perceptions and expectations*. 1990. New York: The Free Press.
27. P. Kotler, G. Amstrong. *Principles of Marketing*, 11th Ed., New Jersey, Pearson Prentice Hall 2006.
- a. Q. Othman, L. Owen. The Multidimensionality of Carter Model to Measure Customer Service quality (SQ) in Islamic Banking Industry: A Study in Kuwait Finance House. *International Journal of Islamic Financial Services*. 2000. 3(4).
28. Q. Othman, L. Owen. Adopting and Measuring Customer Service Quality in Islamic Banks: A Case Study in Kuwait Finance House", *International Journal of Islamic Financial Services*. 2001. 1(3): 6-12.
29. H. Sudin, W. Nursufiza. S. Shafie. Adopting and Measuring Customer Service Quality (SQ) in Islamic Banks: A Case Study in Bank Islam Malaysia Berhad. *Proceedings of National Seminar in Islamic Banking and Finance, Putrajaya, Kuala Lumpur*, 2004. March, 91-102.
30. M.T. Izah, W. Z. W. Ismail. Service Quality in the Financial Services Industry in Malaysia: The Case of Islamic Banks and Insurance. *International Review of Business Research Papers*. 2005. 1(2): 10-21. 32)Parasuraman, A., V. Zeithaml and L. Berry, 1988. SERVQUAL: a multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1): 12-40.
31. Bag, Sudin, and Somasankar Sen. "Kolkata Metro railway and customer satisfaction: An empirical study." *International Journal of Multidisciplinary Research* 2.3 (2012): 165-176.
32. Barabino, Benedetto, Eusebio Deiana, and Proto Tilocca. "Measuring service quality in urban bus transport: a modified SERVQUAL approach." *International Journal of Quality and Service Sciences* 4.3 (2012): 238-252.
33. Chidambaram, Vijayabanu, Surulivel Sangeli Thevar, and Amudha Ramachandran. "A study on efficacy of induction training programme in Indian Railways using factor analysis." *Verslas: teorija ir praktika* 2 (2013):140-146.
34. Gupta, Sumana, and Rabindranath Datta. "Prioritizing service attributes for quality up-gradation of Indian railway stations." *The TQM Journal* 24.2 (2012): 167-169. S. Gandimathi& Dr.S. Saravanan (2013). A Study on Passengers' Satisfaction towards Indian Railway Services in Coimbatore Junction. *International Journal of Applied Research and Studies*.
35. Anand K Sharma & Mathew J Manimala (2008). Sustainability of the Indian Railways Turnaround: A Stage Theory Perspective. The research paper presented at The International Workshop on Innovation and Entrepreneurship held at Cankaya University, Ankara, Turkey.
36. S Vishnuvarthan & Dr A Selvaraj (2012). Railway Passengers' Satisfaction: A Study in Salem Division of Southern Railway. *International Journal of Advanced Research in Management & Social Sciences*.
37. P Vimalkumar & Jitin P (2015) A Study on Passengers Satisfaction towards Railway Service with reference to Coimbatore Junction. *International Journal of Management & Commerce Innovations*.
38. Christo-ph Wolff (2001) Getting India's Railways on Track. Mckinsey Research Report.