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CONCLUSION AND RECOMMENDATION

7.1. SUMMARY

7.1.1. Chapter Wise Summary of the Thesis

Quality connotes excellence in relation to the product or service that a customer gets. Hence quality should be in sync with the expectations and needs of the customers. The philosophy of Total Quality Management also engage persistent efforts to meliorate quality and attain customer satisfaction and the fundamentals of TQM are at par significant to the service industry. Service quality is eminently articulated as the difference between the customer perception and expectation of service which is often evaluated by the SERVQUAL model. A handful of studies have analyzed customer perceptions of service quality in passenger transportation services in the Indian context, This study therefore contemplates on analyzing the service quality of the Metro Rapid Transit system of Delhi, Namely, Delhi Metro Rail Corporation. The research is also focused to study the impact of demographic variables namely: Age and Gender and the impact of service quality on customer satisfaction. For this purpose a sample of 1200 respondents was selected by dividing NCR into routes of Delhi Metro. The method of data collection included primary and secondary sources. For the primary data collection questionnaire has been used and for secondary sources books, journals etc published on Quality, TQM, Service Quality, Transportation sector, Rapid Transit Systems have been duly referred.
A sound and holistic transportation is instrumental in pushing the growth of the economy. The present system of transportation of the country comprises of varied mediums of transportation rail, road, coastal shipping, air transport. The under nourished system of transportation strangulate the economic development of the country. As the cities swell in their size they result in an increase in the amount of vehicles on road. Delhi in the last few decades has experienced phenomenal growth in population therefore, Commuting has been one of the grave considerations specifically for the general public in the city. The present scenario calls for pragmatic policy shift to deter the use of private vehicles and encourage the reliability on public transport, chiefly, an Introduction of a rail based (MRTS) Mass Rapid Transit System. Delhi Metro rail Corporation, has been proved as a boon to millions the of commuters in the city who were real need of a good transport system which can relieve them from the miseries of travelling on the road. The DMRC project was in May 1995, which was to be constructed in four phases covering 245 km & scheduled to be finished by 2021 with the foremost objective to meliorate Delhi’s urban environment by zeroing on reduction of pollution and traffic congestion on roads.

Services are articulated as separately identifiable, intangible activities which deliver want satisfaction when they are marketed to consumers. The service marketing mix comprises of 7P’s namely, product, place, price, promotion, physical evidence, process and people. In the present scenario services have predominantly played a significant role in the Indian Economy. Marketing managers desperately need instruments for evaluating service quality, in order to recognize the characteristics and determinants of service quality. The SERVQUAL model founded on attribute approach to service quality, and explains five basic determinants of service quality namely, tangibility,
reliability, responsiveness, assurance and empathy. In Sync with the global scenario, the Indian service sector has grown at a commendable pace. The concept of quality within the transportation industry encompasses a large number of varied dimensions. Commuters see the concept of quality in the degree of service delivered and cost of transportation. In such a scenario, systematic research aimed at measuring the commuters’ perception on service quality offered by the public transport services will be beneficial to consumers and service producers. The service industry is loaded with fierce competition, thus it of key significance for the service organizations to study service quality as a prime factor for customer satisfaction and sustaining in the competitive world.

The Research was carried out in National Capital region of India (Delhi, Ghaziabad, Faridabad, Noida and Gurgaon). The research gave a first hand experience of understanding the mentality of commuters. Demographics refer to the statistical data of a population, especially those showing average age, income, education. For this study out of all the demographic factors mainly two age and gender have been focused by studying the relationship between the demographic variables Namely, Age and Gender of the commuters and Metro usage. Test of normality was applied to ascertain that that data was normally distributed. The Chi Square test revealed that there was a significant relationship between Gender and overall perception of usage of Delhi Metro. The test also ascertained that there was moderate relationship between the two variables, Age and overall perception of Delhi Metro Usage. But statistically significant.

The next chapter presents the description of the respondents who were interviewed through a well drafted pre-tested questionnaire following the non-probabilistic
sampling, as it is appropriate for exploratory studies. Further convenience sampling method was used. According to the chosen methodological research approach, the quantitative data was analyzed by applying factor analysis by using SPSS Software.

The research attempts to measure the service quality of DMRC. To fulfill the objectives questionnaire was developed on basis of the five SERVQUAL dimensions 21-28 items will be chosen to put in SERVQUAL questionnaire for the DMRC. Before any analysis was conducted on the dimensionality or scales, the data was examined for potential biases. An ANOVA was conducted by using service quality as dependent variable against each demographic category. The Chi-square test revealed the significant association between overall perception of Delhi Metro usage and the Age and Gender. The scale items were analyzed in terms of reliability and the response data checked for invalidity before analysis of the data was conducted. Cronbach’s Alpha was used in this research to assess internal consistency reliability of the 48 scale items of the questionnaire. All the factors were assigned name to characterize it and aid its interpretation. Each of the five factors that have been extracted via Principle Component Analysis in the Exploratory Factor Analysis process of this research data have been in this chapter displayed. The analysis revealed a new dimension to service quality for DMRC, namely, “SECURITY”, Thus, it can be conclude that the dimensions of service quality construct is named as SERVQUAL while the dimensions of service quality of metro can be named as SERVSEC.

Taking the regression equation into consideration, it can be concluded that out of the six factors, namely, Reliability, Assurance, Tangibility, Responsiveness, Empathy and

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1 SERVQUAL with SECURITY
Security, Thus if DMRC, want to increase the customer satisfaction to customer delight they should emphasize more on security, Tangibility and Responsiveness.

7.1.2. Summary of Findings

It was observed that in terms of service quality, the rating given by the respondents were significantly different from each other. It was observed that there was significant association between overall perception of Delhi Metro usage and demography of the respondent namely, Age. It was found that there was significant association between overall perception of Delhi Metro usage and demography of the respondent namely, Gender. It was observed that the generic dimensions of service quality was Reliability. It was observed that the generic dimensions of service quality was Responsiveness. It was found that the generic dimensions of service quality was Tangibility. It was observed that the generic dimensions of service quality was Empathy. It was observed that the generic dimensions of service quality was Assurance. It was found that there were five generic dimensions of service quality: Reliability, Assurance, Tangibles, Empathy, and Responsiveness.

It was found from the study that there exists a sixth dimension of service quality named Security other than the conventional five dimensions as the dimensions of service quality construct is named as SERVQUAL because of the sixth new dimension, the dimensions of service quality of metro can be named as SERVSEC. It was observed that Empathy, Reliability and Assurance had negative values so; they are inversely proportionate to customer satisfaction. So, to increase the level of customer satisfaction DMRC should emphasize more on security, Tangibility and Responsiveness.
7.2. CONCLUSION

In the recent times, organizations have progressively contemplated service quality and its varied dimensions. This concept has made a commendable contribution for the growth of companies and provisions for enhanced service for the customers, predominantly for transit agencies and commuters. An improved service delivery can entice more commuters, which in turn can be a significant breakthrough for many troubles like, traffic congestion on roads, road accidents, late night travelling inconvenience and varied forms of pollutions, as commuters would switch to public transport instead of their self-owned.

Delhi Metro Rail Corporation, an eminent mode of public transport eased the passengers from the plight of travelling on jam-packed roads of the capital, though, The metro system has left a laudable mark on the minds of commuters still a lot of improvements can be made to deliver meliorated services to the passengers as train delays, over stuffed stations, technical snags are a vivid and a usual scenario at the metro stations. Thus, this piece of research contemplated on exploring the quality levels of the Metro Rapid Transit System Of Delhi by applying the five dimensions of service quality model namely, SERVQUAL. Even though SERVQUAL model has been extensively acknowledged and applied in diverse fields of service sector but not a numerous amount of research work has been conducted related to practical applications of the model in public transit systems and exclusively metro trains. The methodology exhibited in this piece of research has been on the foundation of perceptions and expectations articulated by commuters of DMRC, Therefore this research added to the understanding and applicability of SERVQUAL model in Delhi Metro. In contrast with, parasuraman zeithaml and berry’s dimensions of service quality namely, Reliability,
Assurance, Tangibles, Empathy, and Responsiveness, Delhi Metro consumers also expect **Security** as a parameter for service quality.

The hypothesis namely, There is significant association between Delhi Metro usage and demography of the respondent i.e. Age and Gender. In terms of service quality the rating given by the respondents are significantly different from each other. The generic dimensions of service quality is Reliability. The generic dimensions of service quality is Responsiveness. The generic dimensions of service quality is Tangibility. The generic dimensions of service quality is Empathy. The generic dimensions of service quality is Assurance. Were fully accepted except, There are five generic dimensions of service quality: Reliability, Assurance, Tangibles, Empathy, and Responsiveness, which was partially accepted as the study revealed a new Dimension called Security.

Based on the analysis and interpretation of the data it can be summated that the dimensions of service quality construct is named as SERVQUAL while the dimensions of service quality of metro can be named as **SERVSEC**.

The study also explored the association between service quality dimensions, and customer satisfaction through correlation and regression analysis based on needs and expectations expressed by the commuters of public transport services in DMRC. A prudent analysis led to the conclusion that, to increase the level of customer satisfaction DMRC should emphasize more on security, Tangibility and Responsiveness.

Consequently, the results of the study can be segregated into two key conclusions. The foremost is in pertinence to the application of service quality model viz. SERVQUAL and its key dimensions. The Second is to explore relationship between the service quality dimensions and customer satisfaction.
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Conclusion and Recommendation

7.3. IMPLICATIONS

The research gave vent to the following implications that have been outlined and that would lead to reliable, competent, and actionable measurements that can be tracked over time to monitor service quality progress. The implications have been veered to DMRC and the Commuters. Delhi Metro can use these suggestions in several ways:

7.3.1. Implications for DMRC

In order to avoid delays during peak and busy hours of commutation the stoppage time of trains at metro stations should be reduced. The headway time between the trains can also be minimized so that the commuters reach their destinations well in time. In order to ensure unhalted services of metro during special events, advance planning focusing on increased frequency of trains additional coaches attached to metro trains etc should be done.

The ticket Digital pods having personalized route navigator for commuters should be installed on metro stations. Tactile guide paths should be constructed for visually impaired commuters. Ticket counters should be within easy reach of disabled people. Separate wider fare collection gates should be installed to enable wheel chairs pass through them.

Feedbacks should be taken from disabled commuters on their convenience of using the facilities. Provisions for Air conditioners working during the long technical snags should be made. Considering the rising number of late night road accidents and serious women harassment issues taking place in the city it is strongly recommended to DMRC to initiate late night services with less train frequency during wee hours to abate such incidents. Metro stations should be integrated with other transport to ease the
commuters. Timely announcements should be made for train delays and other technical snags. Special numbers for lodging complaints by the commuters with assurance of necessary action with in 24 hrs should be made available by DMRC. Information regarding other means of transport available near the metro stations should be displayed on stations for the convenience of commuters. Provisions for rest room in the trains meant for long routes should be made available for the convenience of the commuters.

Metro stations should have First Aid rooms with trained staff, who should work closely with ambulance and hospitals. Provision for playing Small videos clips on varied issues like how to make exit from the trains in case of emergency, continuous display of helpline numbers etc. should be made in the trains. Emergency call box should be installed in the trains to contact DMRC officials.

There should be a security guards stationed inside the trains to ensure that only women and children travel in WOMEN ONLY cabins. Provisions for “WOMEN AND CHILDREN ONLY” feeder buses should be made to ease women commuters. Separate senior citizens cards giving discounts to the elderly commuters should be introduced. There should be provisions for separate queues at the entrance for senior citizens and handicapped commuters. Provisions for covering the space exceeding beyond the metro train’s length when they stop at stations should be made in order to avoid the number of accidents and suicide attempts made by the commuters. Feeder buses with more seating capacity should be introduced. Though specific seats are reserved for female commuters still they do not get them, therefore strict restrictions should be made for not allowing male commuters to occupy them. Since the commuters have given high ratings to security, tangibility and responsiveness DMRC should focus more on these dimensions to increase customer satisfaction.
7.3.2. Implications for Commuters

During the special occasions commuters should inquire in advance regarding status of footfall of commuters and train delays. It is suggested that commuters should be well informed about the helpline numbers of DMRC so that they can act rightly in case of emergency. People commuting for the first time and tourists should always carry metro maps so that they are not stranded on the stations during their journey. Commuters must go through the procedure for emergency exit displayed in the metro trains. In order to avoid traffic congestion on roads, commuters should use more feeder bus instead of their own vehicles for reaching metro stations.

7.4. SCOPE FOR FURTHER RESEARCH

As the survey conducted was only confined to NCR region results may vary if research is conducted in other cities of India.

The results might also vary if other public transports are considered for measuring service quality. If the survey is conducted to measure the service quality in whole India result maybe substantially different. The researcher has taken PZB’s SERVQUAL model for measuring the service quality if other models are taken into consideration the results may substantially vary. Again, total quality management is understood as measuring the service quality measurement but other dimensions of total quality management like six sigma, quality assurance have not been considered. If other parameters of TQM are taken into consideration the results may substantially vary. Since there have been a less number of studies conducted on service quality in Delhi the SERVQUAL model can be applied in Delhi on other transit systems like DTC Buses, local trains, taxis auto rickshaws etc. A study on SERVSEC model can be
developed by adding more security components, in addition the same can be applied to other transit systems. Further, contrasting studies between DMRC and other metro services across the country can be conducted. DMRC stands out as a master piece when compared with the metro rapid transit systems of Kolkata and Chennai but, it still calls for a melioration when a comparison is made with the metro systems across the globe like, Japan, China, and France. A comparative study on metro usage by Male and female can be conducted. Other demographic variables like occupation, income, status can also be considered for future studies. A study can also be undertaken using SERVPREF which may give substantially different results since this model is based on preferences minus experiences. This model was in highlights since the founders of this model argued that one cannot rate any service without experiencing it (based on their expectations in PZB model). The Different scales of service quality which were developed for other services were not taken into account, if taken the results may vary. As mentioned in the Research Methodology the researcher has only taken PZB’s SERVQUAL Model for developing the scale and conducting the research. Delhi Metro has been taken as a unit i.e. all the metro lines collectively have been considered as one unit. A research can be conducted making comparisons between each individual lines, if done so the results may vary. In this study the Airport express line has not been considered as a unit since, not many commuters commute through this line, Usually this line is used by the non residents of Delhi. Research can also be conducted making a comparison between SERVQUAL of Airport Express line and Delhi Metro. Further research can also be conducted measuring the service quality of Airport Express line only. Research can also be conducted on measuring the service quality of the first metro line and further a comparison between the Service Quality of First and the current metro
line. Similarly the Model can also be applied to measure the service quality of freshly constructed metro lines. Since the research was only concentrating on measuring the service quality of Delhi Metro, especially the train, Research can be undertaken by studying the service quality of Delhi Metro stations. Similarly a study on connecting buses or the feeder buses can also be considered for conducting a research on measuring the service quality.