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Urban Public Bus Transport System in Navi Mumbai: A Comparative Study of the Quality of Service

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The urban population in India is rising rapidly. The number of million plus cities in India grew tenfold from 5 in1951 to 53 in 2011. India has 4 mega cities and 19 metropolitan cities which together account for one third of the urban population. As a result of urbanization, the transport demand has increased substantially.

A good transportation system is essential for sustained economic growth and can significantly contribute to it. An efficient public transportation system is also essential for improving the quality of life of the community.

Convenience is the key word for passengers in making choice of alternatives available for travel in cities as well as in smaller towns and its outlying areas. Convenience is measured in terms of waiting time, travel time, travel comfort, availability of seat and effortless boarding and alighting. It is essential for bus transport operators and the concerned authorities to consider these factors in order to make the public transport viable and attractive in the cities.

Increasing land prices in the cities forces people to look at suburbs for residential purpose. This situation demands need of efficient public transport system for better connectivity. The availability of public buses in India does not match well with potential of demand and the quality of service is also poor. The public transport system to a large extent has failed to meet the demand in attracting commuters from their personalized mode of transport. The personalized transport therefore became the most reliable and convenient mode of transport, resulting in congestion and pollution.

> Urban Public Bus transport Undertakings should undertake various area wise periodic surveys e.g. origin and destination survey, loading survey waiting time survey, vacant seat survey, etc under proper guidance and supervision. The findings of which would help to decide operations and introduce improvement in service quality. The survey would also enable to redesign the routes, prepare bus schedules understand the commuter's expectations and determine the level of service quality as well as efficient bus utilization.

Quality of Service

Acceptable levels of service will differ very considerably from one country to another, and will be greatly influenced by income levels; the value placed on time, geographic and climatic conditions, availability of alternative modes, traditional standards, public attitudes and ethnic characteristics. There is no set of standards that could be universally applied to the quality of bus service in any particular city. Nevertheless, there are a number of attributes that services possess that can be measured.

Public Bus Transport Services

Currently, Navi Mumbai residents are served by four public bus transport agencies, which operate services between Mumbai – Navi Mumbai, within Navi Mumabi, Thane – Navi Mumbai and surrounding areas. These service providers are, Navi Mumbai Municipal Transport (NMMT), Brihanmumbai Electric Supply and Transport (BEST), Maharashtra State Road Transport Corporation (MSRTC-ST), and Kalyan-Dombivali Municipal Transport (KDMT).

Objectives

1. To assess the opinions and expectations of commuters about the quality of service of Urban Public Bus Transport Undertakings in Navi Mumbai. 2. To assess the study of the quality of service of Urban Public Bus Transport Undertakings in Navi Mumbai.

Methodology

The data generated for study purpose was collected from primary sources. For collecting primary data, survey method was adopted, whereby data was collected by administering interview schedules. The sample respondents were selected by using Purposive Quota Accidental sampling technique.

Data Collection

The primary data was collected from public bus users through structured questionaire, administered to a total 1700 bus users from different location of Navi Mumbai. Information regarding personal profile, travel profile, and their opinions about quality of service provided by urban public bus transport undertakings in Navi Mumbai has been collected through survey.

Data Analysis and Interpretation

Trip Information: Out of the total sample size of bus commuters, around 63 percent are male and about41 percent of bus commuters are in the age group of 18-25 and 45percentare in the age group of 26-50. About 43 percent of the commuters surveyed were using bus for service and business purposes and 35 percent for education.

Travel Attributes: Seven travel attributes. like punctuality, reliability, comfort and convenience, courtesy of bus crew, adequacy of bus service, safety and route network. etc were considered to ascertain quality of bus service.

Travel attributes have been grouped with three satisfaction levels: (i) good and above, fair and poor. Percentage of responses representing various satisfaction levels for travel attributes have been shown in Table-1.

The percentage of responses responding various satisfaction levels for travel attributes have been shown

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Table-1
Responses to Travel Attributes

Travel Attributes	Types of service Provider	Percent Responses Good	Fair	Poor
Punctuality				
	1	25.77	61.82	12.41
	2	14.82	46.47	38.71
	3	6.58	38.24	55.18
	4	12.35	41.24	46.41
Reliability				
	1	17.70	74.12	8.18
	2	10.53	50	39.47
	3	7.35	54.94	37.71
	4	7.47	40.94	51.59
Comfort andConvenience				
	1	14.12	65.59	20.29
	2	10.00	53.00	37.00
	3	8.76	46.94	44.30
	4	8.53	44.12	47.35
Courtesy of bus crew/(crew help)				
	1	24.88	61.00	14.12
	2	23.59	63.53	12.88
	3	21.77	58.41	19.82
	4	20.59	45.29	34.12
Adequacy of bus service				
	1	12.30	60.29	27.41
	2	9.41	45.82	44.77
	3	8.29	35	56.71
	4	9.06	40.06	50.88
Safety of bus travel				
	1	30.12	48.47	21.41
	2	25.53	40.59	33.88
	3	17.82	29.88	52.30
	4	25.35	44.12	30.53
Route Network				
	1	17.70	59.65	22.65
	2	12.35	40.65	47.00
	3	11.65	34.41	53.94
	4	9.12	37.06	53.82

Type of Service provider: 1. BEST, 2. NMMT,3. KDMT, 4. ST

Table-2

Weighted Attributinal Rating (W.A.R) of Attributes.

Attributes	W.A.R...of			
	BEST	NMMT	KDMT	ST
Punctuality	6.782	5.807	5.661	5.566
Reliability	6.544	5.632	5.540	5.267
Comfort & Convenience	6.159	5.660	5.464	5.394
Courtesy of bus crew/ (crew help)	7.278	6.686	6.473	6.141
Adequacy of bus service	5.944	5.481	5.197	5.345
Safety of bus travel	7.631	6.344	5.669	6.403
Route Network	6.255	5.554	5.387	5.288
Total W.A.R	**46.593**	**41.164**	**39.391**	**39.404**
Average W.A.R (Calculated)	**6.656**	**5.880**	**5.627**	**5.629**

in Table-1. The comparative study has showed that more % of respondents are satisfied with the service provided by BEST as compared to other bus service providers.

Weighted Attributinal rating (W.A.R.) of travel attributes have been calculated by using the following equation:

$$W.A.R. \sum_{i=1}^{n} (P_i * Q_i)/100$$

Where

P_i = Quantitative value assigned to the satisfaction level 'i'

Q_i = Percentage of commuters for the corresponding satisfaction level 'i'

n = Number of satisfaction levels

For the conversion of the qualitative values of satisfaction levels into quantitative values, the following values have been assigned:

Good & Above = 10

Fair = 6

Poor = 4

The present study (Table-2) has revealed that BEST buses have been rated better than NMMT, KDMT, and ST in respect of quality of the service. NMMT bus service has been rated better as compared to KDMT and ST. KDMT has been rated as lowest in the quality of the service.

Suggestions

1. Urban public Bus transport Undertakings should undertake various area wise periodic surveys e.g. origin and destination survey, loading survey waiting time survey, vacant seat survey, etc under proper guidance and supervision. The findings of which would help to decide operations and introduce improvement in service quality. The survey would also enable to redesign the routes, prepare bus schedules understand the commuter's expectations and determine the level of service quality as well as efficient bus utilization.

2. Bus service should be made commuter oriented by rendering the service according to the needs and expectations of the commuters.

3. Traffic department in charge should visit terminals and routes periodically and study the reports submitted by traffic staff to improve the service quality and passenger volume.

4. Management of Transport Undertakings should make proper arrangement for bus cleaning facility for the buses in the workshop.

5. There should be good co-ordination among NMMT, BEST, KDMT, and ST for intercity travel between Mumbai, Navi Mumbai and Thane. These should complement each other rather than competing

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