

Report on
PERFORMANCE EVALUATION OF BMTC BUSES
AND MEASURES TO IMPROVE THE RIDERSHIP

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INTRODUCTION

Bangalore Metropolitan Transport Corporation (BMTC) is enjoying the distinction of best performance mass transport system in India. It also has got a number of laurels and appreciations from the Central and State governments, International societies and other agencies for its effective operation covering very large area within and outside the metropolitan area. Continuously from past 4 to 5 years, BMTC bagging the safety awards which is the testimony for its concern towards society to ensure safety for passengers as well as other road users.

This achievement is of high standards and the dedicated service oriented man power that BMTC boast. It is a fact and feather to the cap of BMTC to state here that out of a very few profit making road transport undertakings in the international scenario, BMTC also figures after Bangkok.

This type of glorious track record is possible only when passengers are satisfied to the maximum extent. To mention a few here BMTC is providing transport facilities to metropolitan area by operating 4000 schedules covering up to 25kms radius from the city centre. It is roughly estimated that more than 30lakh commuters each day use the BMTC buses for their trips. The continuous improvement, expansions, induction of latest technological advances coupled with management skills, there is no doubt that BMTC reach to the peak and continues to be at the top for its proactive one word agenda “passenger satisfaction” with its progressive attitude and proactive stance, number of prestigious institutions like CIRT, SIDA have recognized and admired the services offered by BMTC.

In additions to catering the requirements of the central parts of Bangalore city, the radial and rings are also covered in an effective manner with frequency almost for every 2 – 3 minute along ring road. The metro grid system connecting South to North & East to West routes diagonally which

is a unique route system developed by BMTC professionals, who are known for their credibility in the country. In this even the core ring roads, inner ring road (IRR) and outer ring road (ORR) are also covered. BMTC will always keep one step forward to serve the commuters based on their feed back and suggestions.

Looking into future scenario, there is a need to have 5000 buses operating in the metropolitans area which a likely to encompass 1394 Square kilometer and to cater more than 54 passenger trips. The effectiveness and efficiency can be enhanced by more than 3 – 4 times if dedicated and exclusive bus lanes are reserved for its operation. The entire route / corridor can be either elevated or fenced without cross traffic like almost a railway track, so that high capacity operation could be possible.

The presently operated route coupled with the proposed metro grid system definitely cover the entire area to ensure that passengers walking distances will not be more than 500mts as compared to international cities, where the distance some times will be 750mts and higher. These locations (Bus stops) and the routes are scientifically operated routes. Though number of suggestions, comments will appear time and again, looking into the present transportation and traffic scenario, it appears that any change (even slight) will have adverse impact and hence there is no need to alter the present one with respect to route net work, schedules and frequency of operation.

STUDY REPORT

Based on the study conducted by Prof.M.N.Sreehari, Chairman Traffic Engineers & Safety Trainers (TEST), and advisor to Government of Karnataka, the following observations were highlighted to improve the ridership as well as image building to international public transport service as practiced in certain developed and developing cities. As the area of Greater Bangalore encompass to 1309 sq.kms due to the addition of 1 TMC,6 CMC's and about 110 villages and the role and responsibilities of BMTC has increased by manifolds, thus bringing more pressure on management as well as crew of BMTC.

The role will have to be played with utmost care and responsibility. At present BMTC enjoys the monopoly by serving more than 35 lakh passenger trips daily which is one and only mass transport operated to

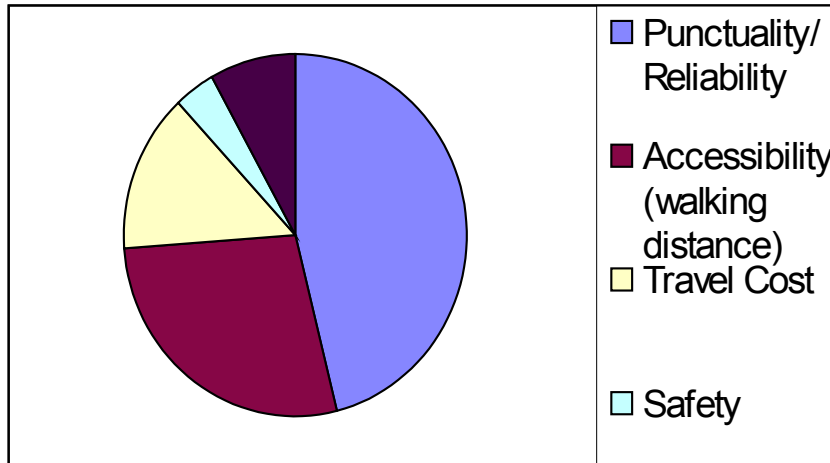
all corners of the urban area. Due to the increased area, BMTC will have to cover the additional areas by effective accessibility and wider coverage.

It is proposed to act as feeder service to the on coming METRO rail. Though there is no threat to BMTC due to the metro rail, the responsibility increase with better service and high level of satisfaction among the users. Keeping this in mind, various measures are proposed after conducting a detailed study based on ridership.

Punctuality, reliability are the two important aspects followed by accessibility as per the ridership survey conducted by the author on board the vehicle and at bus stops [moving observer and stationary observer technique of surveys are described for this purpose]. Apart from this travel cost, travel time, comfort and safety also play a vital role in advocating the popularity of BMTC service.

As per studies the ranking given by the riders are presented below. Entire Bangalore urban area is covered by taking a sample size of more than 6000 passengers over a period of time covering about 75 days.

SL NO	ATTRIBUTE	PERCENTAGE	RANKING
1	Punctuality/Reliability	46	1
2	Accessibility(walking distance)	28	2
3	Travel Cost	14	3
4	Safety	4	5
5	Comfort	8	4



In urban area like Bangalore, passengers are more concerned about punctuality of busses rather than the travel cost, which is ranked at 3rd after accessibility. The introduction and success of Volvo busses are the testimony in our urban environment.

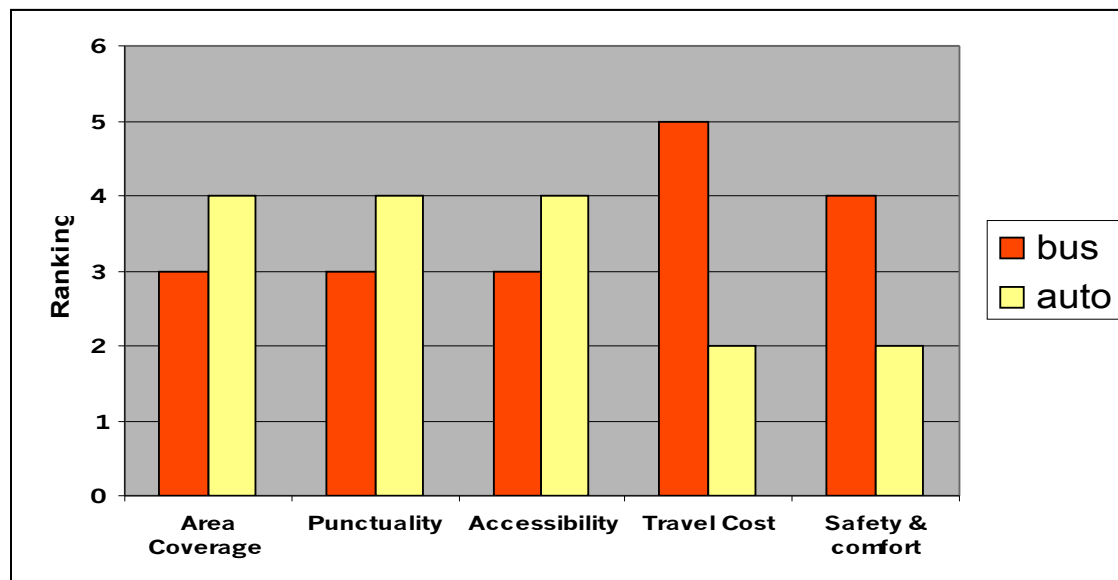
The accessibility which was measured as per the survey (by finding the walking distance / walking time from origin to bus stops) is relatively good as BMTC catchment is excellent at present catering the requirements of passengers from all corners. Most of the urbanites use the bus for their work trips (42%), the travel cost is not viewed as very important as compared to punctuality and accessibility as reaching the work place is important well before time or at least right time.

BMTC busses are relatively comfortable and hence it is ranked as 4th and safety as the fifth preference as numbers of accidents made by BMTC busses are very less out of the total accidents. It is heartening to note that BMTC is operating the safest mode of travel as compared to any other mode where others involves risk, road rage, congestion, delays, higher number of accidents etc.

As per the survey carried out, for an alternate mode to BMTC busses (either Auto Rickshaws or Taxis), the following facts are emerged out.

SL NO	FACTORS	BUS	AUTOS
1	Coverage of the network/Connectivity	Good	Very good
2	Punctuality	Good	Very good
3	Accessibility	Good	Very good
4	Travel Cost	Excellent	Fair
5	Safety & comfort	Very good	Average

Excellent (5), Very Good (4), Good (3), Average/Fair (2), Poor (1), Very Poor (0)



By ranking process, BMTC obtained 18 points as against 16 points for Auto.

Looking into the realities, BMTC busses though ranked good for factors like connectivity, punctuality and accessibility, it is possible to improve further to **VERY GOOD or EXCELLENT**. Autos operate door to door but travel cost is more as compared to busses. The safety and comfort aspects are relatively very good for busses as against average for autos. The over all performance works out to be 18 for BMTC busses and 16 for autos. The ranking is very close to each other indicates that both the modes are surviving but requires improvements if BMTC to surpass the ranking obtained.

There is a need to improve the grid routes operated by BMTC to be made more popular with high frequency and good area coverage. On

the other hand autos are charging higher fares and hence not preferred by passengers unless or otherwise BMTC do not ensure good service. This leads to shift to next alternate mode.

Similarly, two wheelers usage is more due to door to door transportation, no waiting time, route flexibility, easy movement etc. Even though if BMTC busses give everything including low bus pass fares, the age groups between 18-20 years travel more in two wheelers. After 30 years(middle age) will use buses more not because of the cheaper fares but for the security, safety, less pollution and better comfort.

The ratio of using 2 wheelers with respect to buses is 80:20 for the age group between 18-20 yrs. Where as in the age group 30-50 yrs the ratio is 45:55 and above 50 yrs the ratio is 16:84.

MEASURES

1. Exclusive and dedicated bus lanes with adequate service facilities for passengers. The roads which are wide enough (more than 4/6 lanes) can be provided with exclusive bus lanes and the work must be taken up on priority basis. Till then, the extreme left lane can be dedicated for buses which facilitates the passengers boarding and alighting as well as all stops are located at the left. To start with all one way roads like Sehadri road, Nrupatunga road, Museum road, Kasturba road, RRMR road, K.G. road etc, can be tried for exclusive bus lanes (extreme left lane).
2. Factors like increase in traffic density, congestion, delays etc, has affected the schedules and time table of buses. This is obviously due to the movement of more number of private and personalized vehicles. In order to promote the use of public transport and to perform effectively number of buses(fleet size) to be increased from the existing size of about 4900. Every year about 1000 buses can be added up in incremental increase of 250 buses a quarter. This develops more confidence among passengers and leads to switching over to public transport from their personalized vehicles.
3. Along K.G. Road as well as Sehadri Road, there is one BMTC bus, either entry or exit for every 8 seconds. Hence it is to be explored to

construct an elevated road exclusively for BMTC and KSRTC buses. This elevated road can start near the Martha's Hospital or Cauvery Bhavan which can run directly to K.G. bus stand. Adequate head room must be made available at Mysore Bank Junction permitting the movement of other vehicles. With this BMTC buses can increase its present speed of 17-18 Kmph to 30 Kmph. Considering the trips performed at present, and additional one or two trips can be made in addition to conserve fuel, time etc.

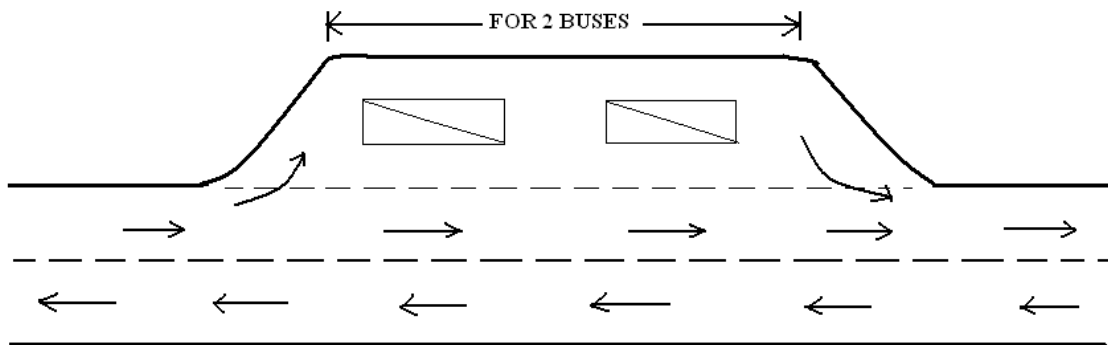
4. The frequency and reliability of recently introduced METRO buses are not satisfactory which demands a re-look with increasing the frequency and reducing the travel time. When the confidence is developed among passengers, these grid routes operated by METRO buses will become very popular. The main aim of reduction in travel time by re-routing (without passing through CBD) will not be met due to bad roads, detours and other factors.
5. BMTC has introduced user friendly operations like ladies special, pass holders special, school and college trips, night specials etc. These proactive measures will attract customized passengers.
6. The bus journey can be made more attractive and lucrative by modifying the design and giving face lift for the buses. This includes very large glass windows, route maps and information about stops, issuing tickets in advance, very light instrumental music, secured door locking mechanism to increase the safety, providing more standees for short route trips, introducing aged/disabled/retired people friendly busses, automatic ticket vending units in buses as well as in stops, good and comfortable bus stops with arrival departure information etc.
7. The bus stop spacing are planned to ensure the walking distance not more than 500 meters, waiting time not more than 15 minutes (introducing buses at every 30 minutes frequency). These measures can be taken up on priority.
8. The real time analysis based on technical and scientific studies using stimulation technique can be made. This study helps in working out the travel time (passenger service time at stops), delays and layover time etc. This will help to augment the frequency of buses as well as helps the authorities in maintaining scheduled time table. This not only

improves the BMTC image but also in turn helps passengers to develop confidence on the system.

9. Ticketing and fare structure can be made more competitive by applying sensitivity analysis by incremental increase method to study impact.

CERTAIN OBSERVATIONS

1. Most drivers do not use the bus bays constructed at available locations but stop along road side Kerb (as an example Vijayanagar main bus stand). Creating bus bays but when buses do not use them carries no meaning. Hence drivers must be strictly instructed to use bus bays created for the purpose (at all times).
2. All bus stops located at close proximity to junctions must be relocated at least 75 m after the junction.
3. Bus bays must be constructed at least for two buses parking at all locations where adequate geometry is available.
4. Bus stops located opposite to each other (opposite direction) must be staggered. This prevents road blockades and congestion. In many cases though it is shifted drivers will not stop the buses meant for it. They are observed to park one opposite to another that too along a curved stretch blocking the visibility and movement of other traffic (ex: Diwanara playa – M.S.R. Road near Mathikere).



5. Though number of buses is equipped with doors, but the opening and closing is under the mercy of the driver. As a result most of the times they are kept open. It is very essential and important to instruct drivers not to open the door except at the designated stops.