A study on investment, Cost, Profitability and Utility of Urban Passenger transport undertakings with special reference to Maharashtra State

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Abstract- This study is carried out to find the gap between the urban passenger transport demand and supply with reference to Maharashtra. In most of the cities at Maharashtra, vehicle population is facing exponential growth. Monopoly urban transport undertakings fail to meet the demand of the public. This has ignited the researcher to study about the urban passenger transport undertakings. They have not equipped themselves to cater the demand due to the minimum capital. They are purely depending on the Municipal Corporations or State Governments to sanction the money for purchasing buses. Public are commuting through their own transport since the absence of authorized private transport connecting the parts of cities. This study focuses on the four parameters namely Investment, cost, profitability and utility of Urban passenger transport corporations.

On this background, this is study wants to find out is there any significant difference in the performance of urban passenger transport undertakings along with passenger satisfaction towards the quality of service rendered by these undertakings. Financial performance and passenger satisfaction are the two eyes of the transport undertakings. Studying both together is more meaningful than studying each other independently.

Keywords – Vehicle Population, Maharashtra, Municipal Corporations, Investment, Cost, Profitability, Utility

I. INTRODUCTION

Transport plays a vibrant role in the growth of any country. Any countries progress is linked to its well-connected and synchronized transport system. Indian transport sector has not only chronicled extensive growth in the spread on network over the past but also enhanced the output. It contributes to the development of other sectors which are mostly dependent on the existence of suitable transport network, especially in developing countries.

Modern era of Globalization has paved the path for many Multinational National Companies to open their avenues in India. Hence Indian transport sector must be strengthened to cater their needs not only the movement of goods but as well as people. In fact, the Industry, Trade and Commerce need a well laid foundation of transportation. Hence effective transportation system is required for economic development. Transport is considered as the life blood of the economy of not only developing countries but also developed countries. Of all the types of transport, Passenger transportation has been commended most important. Passenger Road transport is a public utility service and it is the duty of a state welfare to provide economical and comfortable service to Public.

The following factors are some of the important factors making this sector an essential sector contributing towards the growth of the economy.

- First and first most it is a public utility service, bestowing the social obligation towards well-being of the residents.
- Secondly, it paves a platform for overall development by means of accelerating the economic activities.
- Thirdly, it is a labour intensive sector generating lot of employment.
- Fourthly, State Government and Municipal Corporation generate revenue through passenger transport.
- Fifthly, this sector demands huge investment and hence public private partnership and Foreign direct investment is gaining familiar in this segment.

Thus transport system is instrumental for interconnecting the business to the market place and promotes trade and commerce in the country. Moreover it generates employment as well as helps the people to commute to different places for earning their livelihood, entertainment, shopping, education and meeting others etc., thereby unites the mankind. It plays an integral role in the economic, social and cultural developments of the country.

The main focus is to study about the investment, cost components, economic profitability and utility measure of Maharashtra's Major Urban Passenger Transport Undertakings or Municipal Transport Undertakings (MTUs) through ratio analysis and various statistical tests. Various calculations are used to optimize this process. This research considers the problems of economical passenger transportation which is based on the assessment of

investment, cost, profitability and utility of the services rendered by the Urban Transport Undertakings at Maharashtra

II. PROPOSED ALGORITHM

2.1 Objectives of The Study:
The overall objectives of the study are to evaluate the performance of Municipal Transport Undertakings in Maharashtra. To review the progress of the Urban Passenger Municipal Transport Undertakings in Maharashtra
1. To know the investment of the selected Urban Passenger Transport Undertakings
2. To identify the major cost components (expenditure) of the selected Urban Passenger Transport Undertakings
3. To measure the profitability of the selected Urban Passenger Transport Undertakings

2.2 Scope of the Study:
At present there are only twelve registered Urban Passenger Transport Undertakings in Maharashtra, which are directly controlled and regulated by the Municipal Corporations. From these six urban passengers transport undertakings were selected randomly using simple random technique. They are
1. Brihan Mumbai Electric Supply and Transport Undertaking (BEST)
2. Pune Mahanagar Parivahan Mahamandal Limited (PMPML)
3. Thane Municipal Transport Undertaking (TMTU)
4. Kolhapur Municipal Transport Undertaking (KMTU)
5. Navi Mumbai Municipal Transport (NMMT)
6. Solapur Municipal Transport Undertaking (SMTU)

Subject scope: This study focused on the evaluation of the investment, cost, profitability and utility of the selected urban passenger transport undertakings under the study.
Geographical scope: The study pertains to urban passenger transport undertakings of Maharashtra. It did not cover the rural transport.
Time scope: The period of study is 01-04-2010 to 31-03-2015

III. HYPOTHESES OF THE STUDY:

A) H0: There is no significant impact of fixed assets on revenue of the selected Urban Passenger Transport Undertakings.
H1: There is significant impact of fixed assets on revenue of the selected Urban Passenger Transport Undertakings.
B) H0: There is no significant impact of working capital and fixed assets on profitability of the selected Urban Passenger Transport Undertakings
H1: There is significant impact of working capital and fixed assets on profitability of the selected Urban Passenger Transport Undertakings
C) H0: There is no significant impact of Average buses operated, Revenue earning Km, and number of Passengers carried on profitability of the selected Urban Passenger Transport Undertakings
H1: There is significant impact of Average buses operated, Revenue earning Km, and number of Passengers carried on profitability of the selected Urban Passenger Transport Undertakings

IV. RESEARCH METHODOLOGY:

4.1 Research Design for Study:
The present study is descriptive in nature. Descriptive research includes various fact-finding enquiries and surveys. Researcher has no control over the variables under study. The major purpose of descriptive research is description of the state of affairs as it exists at present. In the first stage of study, pilot study was carried out. Initially content validity and reliability tests were done which suggested that the instrument with different items and scale was appropriate. Research framework was properly designed on the basis of purpose of study.

4.2 Universe of the Study:
Transport corporations rendering service to the public residing in the urban area of Maharashtra and controlled by the municipality. Moreover Passengers commuting through selected urban passenger transport undertakings under the study

4.3 Sample Size Study:
In the case of urban passenger undertakings were selected through random sampling. In the case of selection of passengers, Sample size was determined using sample size determination by mean method. Variables in study were measured using a 5-point measurement scale; hence the mean method was adopted. Formula

$$N = (z^2 * s^2)/e^2$$

Where, 'z' is the standard score associated with confidence level (95% in the current case). Hence standard scores equals to 1.96 (borrowed from normal table)

'S' is the variability in the data set, computed as a ratio of range / 6. Range is equal to 5-1 = 4 (the difference between minimum and maximum value in the 5point scale). 6 refer to ± 3 standard deviation values on the X axis of the standard normal curve, which takes in all the data set in study. Hence S = 4/6 = 0.66. E is the tolerable error = 4% (in the current study).

Sample size n = ($[\![1.96]\!]^2 * [\![0.66]\!]^2)/ [\![0.04]\!]^2 = 1045$

1150 respondents were surveyed. Out of these 76 respondents were not using the services of the selected transport undertakings. Hence the total sample size was 1074.

4.4 Sampling method Study:
In the case of Urban passenger transport undertakings Simple Random sampling technique was used. In the case of passengers Proportionate stratified sampling. Stratified random sampling is more efficient since it divides the population into various strata that increases the representativeness of the sampling.

4.5 Pilot Study:
Initially to test and evaluate the survey questionnaire and to analyze whether the questionnaire is readable, relevant and accurate a pilot study was conducted. A sample of 92 was drawn by using convenience sampling method for Pilot Study. The main purpose of the pilot study was to remove minor mistakes from questionnaire. Thus the Pilot Study helped in many ways like: finalization of questionnaire i.e. in flow of questions, language, clarity of questions, time required to fill the questionnaire etc. Moreover it helped to formulate hypothesis. Forty parameters to measure the construct passengers' satisfaction was tested; Cronbach`s Alpha value was 0.942, which was greater than 0.7 depicted that instrument was reliable; Ratio scale from 1-100 was used by the researcher to measure passenger satisfaction.

4.5 Sources of Data Collection:
Primary Sources: In the case of undertakings Interview was conducted to identify the important parameters for measuring various constructs from the senior PRO of PMPML, Senior Accountant of PMPML and NMMT, Transport Manager of KMTU, Transport Manager of SMTU and the Transport Manager of TMTU. The technique adapted was face-to-face meetings which can be termed as Mini-Delphi Technique. In case of passengers, a structured questionnaire was designed in order to collect the data from 1074 respondents. The data was collected through survey method.

Secondary Source: The secondary data were collected from the audited income and expenditure account and balance sheet of the selected urban passenger transport undertakings. Published data such as financial performance, physical performance were collected from data.gov.in. STUs: Profile & Performance Data from Central Institute of Road Technology STUs and Review of performance of SRTU from http://indiaenvironmentportal.org.in

V. LIMITATIONS OF THE STUDY

There are some limitations of the present study, which are generally inherent in such study. The most important among them as:

The study covers only six urban passenger transport undertakings and that are primarily into rendering services to passengers residing in the urban areas. So, the findings may not be applicable to the transport corporations which are rendering services to the rural areas.

For the analysis of the financial performance, the study considered aspects like investment, cost, profitability and utility only. Cash flow and fund flow were not covered to study the source and application of funds.

Moreover the transport corporations have accounted hire charges for the private public partnership is accounted as other charges. They have violated the policy of accounting.

Many times it was not easy to obtain the data/ information through structured questionnaire and interview methods from the respondents as some of the respondents were reluctant to share some specific information.

VI. STATISTICAL TOOLS AND TECHNIQUES:

To analyze the collected data and to test the hypothesis various statistical methods were used, frequency distribution, descriptive statistics, Correlation, Anova, KMO Bartlett's test of Sphericity, regression analysis and Principal Component analysis were carried out. SPSS Statistics Version 21has been used for the purpose of data analysis and

hypothesis testing. Researcher has also used Microsoft Office Excel 10 for calculations, data analysis, and data sorting and for the purpose of drawing various graphs.

VII. FINDINGS

1. It was found that majority of the passengers were male since their share was 70% and female was 30%. Moreover the 15-30 age groups had the highest share of 48% followed by 46-60 age groups with 32%. Similarly 20001-35000 income groups had the highest share of 38% followed by the income groups greater than 35000 with 32%. Graduate passengers had the highest share of 45% followed by the post graduate with 42%. Private sector employees hold the highest share of 58% followed by student with 20%. 42% of the passengers' family size was four followed by 27% passengers with family size three.

2. It was found that 45% of passengers were commuting for their office followed by the shopping with 20%. Moreover 25% of the passengers were holding monthly pass followed by student monthly pass with 17%. Out of these 27% were holding the pass of the selected urban passenger transport undertakings for more than a year. 73% of the passengers were commuting to the bus stop by walking. Another interesting fact was 33% were travelling 31-40 km. It was found that peak time was 8:00 am to 9:59 am in the morning and 5:00 pm to 6:59 pm in the evening. 60% of the passengers were waiting less than ten minutes to board the bus. 11% passengers have lodged the complaint. 63% of the passengers were using two wheelers as the alternate mode of transport.

3. The researchers found that on an average BEST undertaking has invested 46% in fixed assets and 54% in current assets. It, on an average generated sales revenue of Rs.2.67 for each rupee invested in fixed assets and Rs 3.06 for each one rupee invested in current asset. Its working position was too weak with mean working capital ratio of 0.66 and working capital turnover of -0.55, which alarms that BEST did not have sufficient working capital.

4. KMTU on an average has invested 28% in fixed assets and 72% in current assets. It, on an average generated sales revenue of Rs.15.61 Rs for each rupee invested in fixed assets and Rs.5.48 for each rupee invested in current assets. Its working position was 1.31 and mean working capital turnover was -29.02 which depicted that it lacked sufficient working capital.

5. NMMT on an average has invested 54 % in fixed assets and 46% in current assets. It, on average generated sales revenue of Rs.1.49 for each rupee invested in fixed assets, Rs.1.74 for each rupee invested in current asset and generated Rs.2.27 for each rupee invested in working capital. Its mean working capital position was 2.10; it is higher than the industry norms 1:1. It is not effectively using the currents assets.

6. PMPML has invested 60% in fixed assets and 40% in current assets. It generated Rs.5.67 for each rupee invested in fixed assets and Rs.11.63 for each rupee invested in current assets. It working capital position was too weak with mean working capital ratio was 0.35 and mean working capital turnover was -4.26 which alarms it did not have sufficient working capital for its day to day functioning.

7. TMTU has invested 63% in fixed assets and 37% in current assets. It generated Rs.0.79 for every one rupee invested in fixed assets and Rs.1.38 for each rupee invested in current assets. Its mean working capital ratio was 1.30 and working capital turnover ratio was -0.89. It was alarming situation that it did not have sufficient working capital for its day to day functioning.

8. TMTU ranked first as per the mean of fixed assets to total assets whereas KMTU ranked first as per the mean of current assets to total assets. KMTU ranked first as per the mean of the fixed assets turnover whereas PMPML ranked first as per the mean of current assets turnover. NMMT ranked first as per the mean of working capital ratio as well as working capital turnover ratio

9. It was studied that BEST was spending 43 % more than the revenue earned and incurred a net loss of 30% on the cost. Its operating cost was 83% approximately and non-operating cost was 17%. Its chief expenses were staff cost per revenue earning km of Rs.45.92 and Fuel& Lubricant Cost per Revenue Earning Km of Rs.15.14. The total operating cost per revenue earning km was Rs.64.32 and non-operating cost per revenue earning km was Rs.12.33.

10. KMTU was spending 3% more than the revenue earned and earned a loss of 3% on the cost. Its operating cost was 84% and non-operating cost was 16%. Its chief expenses were staff cost per revenue earning km of Rs.16.51 and Fuel & Lubricant Cost per Revenue Earning Km of Rs.12.69. Its total operating cost per revenue earning km was Rs.30.64and non-operating cost per revenue earning km was Rs.5.67.

11. It was found that NMMT was spending 18% more than the revenue earned and incurred a net loss of 15% on the cost. Its operating cost was 86% and non-operating cost was 14%. Its chief expenses were staff cost per revenue earning km was Rs.18.59 and Fuel & Lubricant Cost per Revenue Earning Km was Rs.14.9. Its total operating cost per revenue earning km was Rs.40.16 and non-operating cost per revenue earning km was Rs.6.71.

12. PMPML was spending 14% more than the revenue earned and incurred a net loss of 12% on the cost. Its operating cost was 69% and non-operating cost was 31%. Its chief expenses were staff cost per revenue earning km

of Rs.23.60 and Fuel & Lubricant Cost per Revenue Earning Km of Rs.10.31. Its total operating cost per revenue earning km was Rs.39.07 and non-operating cost per revenue earning km was Rs.18.02.

13. SMTU was spending 10.48 % more than the revenue earned and incurred a net loss of 6.34% on the cost. Its operating cost was 87% and non-operating cost of 13%. Its chief expenses were staff cost per revenue earning km was Rs.17.68 and Fuel & Lubricant Cost per Revenue Earning Km was Rs.14.57. Its total operating cost per revenue earning km was Rs.35.88 and non-operating cost per revenue earning km was Rs.5.99.

14. TMTU was spending 39.05 % more than the revenue earned and incurred a net loss of 27% on the cost. Its operating cost was 83% and non-operating cost was 17% approximately. TMTU mean staff cost per revenue earning km was Rs.43.6 and Fuel & Lubricant Cost per Revenue Earning Km was Rs.19. Its total operating cost per revenue earning km was Rs.66.17and non-operating cost per revenue earning km was Rs.12.59.

15. The researchers found that Staff cost was highest at BEST and lowest at KMTU; Fuel and Lubricant cost was highest at TMTU and lowest at PMPML Tyre &Tubes cost was highest at SMTU lowest at NMMT; Spare cost was highest at NMMT and lowest at KMTU; Interest cost was highest at BEST's and lowest at TMTU and KMTU; Tax cost was highest at TMTU and lowest at SMTU; other cost was the highest at PMPML and lowest at NMMT.

16. The researchers found that in case of BEST, NPR and OPR were continuously declining during the period of study. ROCE did not show the correct picture since the negative sign of capital employed got nullified by the negative sign of the operating loss during 2013-15. It incurred loss of 54% on the value of the assets. The loss got increased by 35% in 2015 as compared to 2012. The mean Net loss earned per bus per day was Rs.4076and Operating loss earned per day was Rs.2128.

17. In KMTU, NPR was fluctuating during 2012-15 due to the fluctuations in the staff cost and revenue. OPR was also continuously increasing but declined during 2015 due to decrease in revenue. ROCE turned negative in 2015 due to the accumulated losses. It incurred a loss of 10% on the value of the assets. The loss got increased by 1% in 2015 as compared to 2012. Mean Net loss earned per bus per day was Rs. 176 and Operating profit earned per day was Rs.971.

18. In NMMT, NPR got declined during 2012-14 due to increase in the cost. Net loss decreased in 2015 due to the increase in revenue by 40%. It earned operating profit during 2010-15 except 2014.It incurred a loss of 6% on the capital employed and 14% loss on the value of the assets. Mean Net loss earned per bus per day was Rs.1369 and Operating loss earned per bus per day was Rs.82.

19. In PMPML, NPR and OPR got declined since the rate of increase in the cost was higher than the rate of increase in the revenue. It incurred a loss of 14.19 times on the capital employed and 52% loss on the value of the assets. Mean Net loss earned per bus per day was Rs.1185 and Mean Operating profit earned per bus per day was Rs.1734.

20. In SMTU, NPR declined in 2012 due to increase in cost and a steep decrease in 2014 due to the revenue decline by 19%.SMTU earned operating profit during 2010-15 except in 2014 due to the decline in revenue. Mean Net loss per bus per day was Rs.696 and Operating profit earned per bus per day was Rs.410.

21. In TMTU, NPR and OPR was continuously declining due to the fluctuations in the revenue as well as increase in staff, spares and other cost. It incurred a loss of 15% of the capital employed and 19% on the value of the assets. Mean Net loss earned per bus per day was Rs.2642 and operating loss earned per bus per day was Rs.1133

22. The researchers found KMTU stood first and BEST ranked the last based on NPR; PMPML stood first followed by KMTU and BEST ranked last as per OPR. KMTU stood first and BEST ranked last based on ROA. KMTU stood first BEST ranked the last as per Net profit per bus per day. PMPML stood first and BEST ranked last as per operating profit per bus per day.

23. The researchers found that there was significant impact of Fixed Assets on the total revenue of the Selected Urban Passenger Transport Undertakings since the correlation coefficient between them was 0.934 with p=0.00. Moreover, if fixed assets increase by one unit, it will increase the revenue by 2.621. The contribution made by this variable in improving the revenue was 87.3% during the period of study.

24. It was found that there was significant impact of Significant Impact of Working Capital and fixed assets on the Profitability of the Selected Urban Passenger Transport Undertakings since correlation coefficient between Net profit and working capital was 0.553 with p =0.006 and Net profit and fixed assets was -0.915 with p =0.000. Moreover if the working capital increase by one unit, it will increase the net profit by 0.047 and increase in fixed assets by one unit, it will decrease the revenue by 1.21. The contribution made by these variables in improving the net profit was 84.1% during the period of study.

25. BEST fleet utilization was 86%. Number of accidents per lakh revenue earning Km as well as Number of fatal accidents per revenue earning Km was declining. Staff productivity got declined by 6% in 2015 as compared to 2011. Vehicle productivity increased by 1% in 2015 as compared to 2011. Fuel efficiency got declined by 1% in 2015 as compared to 2011. Mean occupancy was 65%. Occupancy got declined by 5% in 2015 as compared to

2011. Mean regularity was 91% and Break down per ten thousand effective Km got declined by 14% in 2015 as compared to 2011.

26. KMTU fleet utilization was 86%. Number of accidents per lakh revenue earning Km got declined by 2% in 2015 as compared to 2011 and Number of fatal accidents got declined by 36% in 2015 as compared to 2011. Staff productivity got declined by 2% in 2015 as compared to 2011 and Vehicle productivity got decreased by 8% in 2015 as compared to 2011. Fuel efficiency got increased by 2% in 2015 as compared to 2011. Mean occupancy was 64%. Occupancy got declined by 2% in 2015 as compared to 2011. Mean regularity was 90% and Break down per ten thousand effective Km got increased by 10% in 2015 as compared to 2011.

27. NMMT fleet utilization was 65%. Number of accidents per revenue earning Km got declined by 24% in 2015 as compared to 2011. Staff productivity got increased by 1% in 2015 as compared to 2011and Vehicle productivity got increased by 3% in 2015 as compared to 2011. Fuel efficiency got increased by 1% in 2015 as compared to 2011. Mean occupancy was 80% and Occupancy got declined by 2% in 2015 as compared to 2011. Mean regularity was 72 % and Break down per ten thousand effective Km got decrease by 4% in 2015 as compared to 2011.

28. PMPML fleet utilization was 71%. Its number of accidents per lakh revenue earning Km as well as number of fatal accidents got declined by 24% in 2015 as compared to 2011. Staff productivity got increased by 2% in 2015 as compared to 2011. Vehicle productivity got decreased by 5% in 2015 as compared to 2011. Fuel efficiency got declined by 1% in 2015 as compared to 2011. Mean occupancy was 68%. Mean regularity was 75 % and Break down per ten thousand effective Km got decreased by 3% in 2015 as compared to 2011.

29. SMTU fleet utilization was 83%. Number of accidents per revenue earning Km got increased by 5% in 2015 as compared to 2011. Number of fatal accidents per revenue earning Km got declined by 100% in 2015 as compared to 2011. Staff productivity got decreased by 11% in 2015 as compared to 2011. Vehicle productivity got decreased by 20% in 2015 as compared to 2011. Mean fuel efficiency was 3.09. Fuel efficiency got increased by 7% in 2015 as compared to 2011. Mean occupancy was 87%. Occupancy got increased by 2% in 2015 as compared to 2011. Mean regularity was 75 % and Break down per ten thousand effective Km got decreased by 10% in 2015 as compared to 2011.

30. TMTU fleet utilization was 61%. Number of accidents per revenue earning Km got increased by 2% in 2015 as compared to 2011.Number of fatal accidents per revenue earning Km got increased by 50% in 2015 as compared to 2011. Staff productivity got decreased by 1% in 2015 as compared to 2011. Vehicle productivity got decreased by 4% in 2015 as compared to 2011. Fuel efficiency got increased by 1% in 2015 as compared to 2011. Mean occupancy was 72%. Occupancy got decreased by 13% in 2015 as compared to 2011. Mean regularity was 68% and Break down per ten thousand effective Km got increased by 9% in 2015 as compared to 2011.

31. The researchers found that the BEST ranked first and TMTU stood last based on fleet utilization. SMTU ranked first with minimum number of accidents whereas KMTU stood last. NMMT ranked first with minimum number of fatal accidents whereas KMTU ranked the last. PMPML ranked first with minimum number of staff per bus whereas KMTU stood last.

32. PMPML ranked first with maximum productivity whereas TMTU ranked the last. KMTU ranked first with maximum vehicle productivity and TMTU stood last. KMTU ranked first with maximum fuel efficiency where as TMTU ranked the last. BEST ranked first with maximum regularity whereas TMTU stood last. SMTU ranked first with minimum breakdown per bus per day whereas KMTU stood last.

33. The researchers found that there was significant impact of Average buses operated, Revenue earning Km, and passengers carried on profitability of the selected Urban Passenger Transport Undertaking since the correlation coefficient between Net profit and Average buses operated was -.914 with p=0.000; Net profit and revenue earning km was -0.897 with p=0.000; Net profit and passengers carried was –0.900 with p=0.000.

34. It was also found that if Average buses operated is increased by one unit, it will decrease the net profit by 1.254 and increases in passengers carried by one unit, it will increase the net profit by 0.212 and the increase in one unit of revenue earning km will increase the net profit by 0.491. The contribution made by these variables in improving the net profit of the selected urban transport Passenger Transport Undertakings is 81.1% during the period of study.

VIII. CONCLUSION

The study has identified various dimensions for measuring the financial performance of the Urban Passenger Transport Undertakings. The four major pillars of the financial performance studied were Investment, Cost, Profitability and Utility. The major investments in the case of urban passenger transport undertakings are the fleets. Due to lack capital, they are purely dependant on the municipal corporation or funding from the state and central government for purchasing new fleets. The delay between the proposal and sanction leads to explosion of vehicle population in the urban cities of Maharashtra. Most of the undertakings lack working capital for their day to day functioning.

The major cost component was staff salary, fuel cost, spare cost and tube and tyre cost and interest cost. Few undertakings have hired the buses through Public private partnership model namely JNNRUM. In those case hire charges is also one of the important component of cost. Profitability position is too weak. Most of the undertakings are not even able to meet out the operational cost.

Utility measures of the undertakings depicted that fleet utilization is poor. Investing huge money on the fleets and if did not run and generate revenue is one of the major issue of all the undertakings. Hence these undertakings should devise strategies to streamline the workshop where the repair activities are carried out and try to ply as many buses on road. Moreover passengers are annoyed by the breakdown issue. These undertakings should plan for preventive as well as corrective maintenance and minimize break down. Staff bus ratio is alarming. For a bus, everyone feel there are two persons namely driver and conductor. But staff bus ratio is alarming. For each and every bus, mostly there are around six to eight employees. These undertakings should try to minimize the number of staff size and increase staff productivity.

Passenger satisfaction can be evaluated using four factors namely Safety and efficient Service, Hospitality, Infrastructure and Technology advancement, Punctuality and Information Availability, and Comfortability. Undertakings can organize bus day in particular area and request the companies in that area to use the bus service.

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