

Data Analysis of Pune City Buses

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Abstract

Living in current society is not easy nowadays, as every individual face many problems on daily basis. As there are many problems out of which one is the city bus problem. There are hundreds of buses running frequently on the roads daily, but as there is lots of population so the services are unable to fulfill individuals demands. Each individual contemplates his very own necessities which he needs to be satisfied yet appropriate administration of framework needs conveying the administrations. As per the stats there is around the decadal growth rate of Pune for the last 40 years has been at least 40%. Due to such rapid growth in population of the city Public related services lack to give everyone their comfort services. To have proper organized services needs detailed information about the topic for which the data is collected. We collect the city bus data from various sources by on which various analyzing operations can be performed. An proper analyzed solution gives an overview where the problem exactly is. Such task can help the services to be improved and to can give the citizens a tension free solution.

Keyword: City buses problem, Public.

I. INTRODUCTION

Researching about any topic is an interesting task where we come across many unknown information. Data Analyzing of Pune city buses is an topic where improvement is needed to overcome public issues. Despite the fact that the lodging and urban issues service has positioned Pune as the 'most liveable' among 111 urban areas in the nation, an examination of community information more than 20 years has appeared disturbing crisscross between Pune's dangerous development and the insufficiency of city arranging. [4]Urban transportation is a vital component of urban areas prominently in high thickness areas. Public confronting the issues can do nothing else than sharing their perspectives about it.

As previously the population of the city was not much as compared to now there were less problems. City was not so widely spreaded so it was not having any connectivity issues. As the population has increased so the demands of public regarding Bus issues have been arised. Nowadays everyone has a busy schedule nobody is ready to loose his/her single second,everyone wants the facilities to be on their fingertips which will fulfill their needs. [2]The capital and energy storage system costs of city buses are the most critical factors for improving the cost-efficiency of these alternative city bus configurations. [5]Key challenges in traffic systems are carbon footprint of the vehicles, local emissions, noise and congestion. [3] The fluctuation in fuel utilization brought about by driving style (DS) contrast surpasses 10% and achieves a limit of 20% under various street conditions, not with standing for experienced transport drivers. A proper analysis of the problem can help to find the solution to overcome it. Managing the resources which are present accordingly to the public demands can give relief to the public thinking about the issue again and again.

II. LITERATURE REVIEW

To analyze any study related to the society we always need proper information about the issue and what work is done previously related to that problem.

Rangarajan,[6] A. has stated in their paper that pune is the 8th largest city in the country. Where lots of people come in hope of getting their livelihood sorted. This paper is gone for displaying the traffic situation in the of Pune city where the BRT has been actualized, both before and after the implementation of the system. Utilizing Mathematical displaying programming, a factual cum graphical model of the spot has been made and the two situations have been comprehensively reenacted and some exceptionally fascinating realities surface subsequently. According to the result obtained, an effort has been made to draw a conclusion about the system and its effects on Pune's society.

Sardey, Y., Deshmukh, P., Mandlik, P., Shelar, S. and Nerkar, M [7] has worked in this paper regarding building an android application and related to the bus information and it's location tracking. Android is an open source mobile software environment. This application has been created utilizing IDE(Eclipse Integrated Development Environment) with ADT (Android Development Tools) and Android SDK(Software Development Kit).

Ingle, D. and Bagwan, A.B.[1], they investigated in their research paper about the peoples traveling by the buses take too much time to reach the destination because of the traffic, engines problems. To solve this issue the bus monitoring system using real-time GPS location is required. to alleviate the current research problem, they proposed novel algorithms for tracking the bus based on efficient node localization approach. they proposed the adaptive localization algorithm. The novelty of their work is that the efficiency of proposed method is evaluated by both simulation studies and real time implementations.

Tiwari, G. and Jain, D.[8], 2010. Have researched about existing status of BRTs projects in ten Indian cities, which are at the different stages of implementation. For the study, data for all the cities was collected from different sources such as local authority websites, organizations involved in the projects, published reports and studies, and the media.

III. DATA COLLECTION

Data was collected with the help of survey which was carried out with the help of Google forms. The survey was distributed amongst the various parts of the cities. Problems from all the citizens from over the city were taken into consideration.

The survey consisted of 14 questions where each question was asked considering what problem can an individual face. Where for the most part the inquiries comprised choices of numeric information because of which it very well may be simple for examining.

Taking into consideration this problem there were no such actions taken where it can provide an easy connectivity for the passengers. There are lack of buses in the crowdly areas of the city. Issues were not taken seriously and were not solved for the benefits of the citizen.

	B	C	D	E	F	G	H	I	
1	Age	Profession	Do you travel by city bus? If yes, how frequently do	Frequent route of travellin	How many buses do you	How frequently do you ge	Number of Buses of your	Change	
2	10-20	Student	Yes	16-20	Lohegaon-bund garden	1	6 Yes	Yes	Yes
3	21-30	Working	Yes	1-5	Lohegaon to Vimannagar	2	2 Yes	Yes	Yes
4	10-20	Student	No	1-5	Manapa	1	1 Yes	Yes	Yes
5	10-20	Student	Yes	1-5	Vishrantwadi-manapa	1	5 No	Yes	Yes
6	10-20	Student	Yes	1-5	Vishrantwadi-manapa	1	5 No	Yes	Yes
7	21-30	Student	Yes	1-5	Dhanori to pune station	1	5 Yes	Yes	Yes
8	10-20	Student	Yes	1-5	Warje Malwadi- Ferguson	1	1 Yes	No	No
9	10-20	Student	Yes	16-20	Mnpa	3	1 Yes	Yes	Yes
10	21-30	Student	Yes	11-15	Lohegaon	More than 3	1 No	No	No
11	10-20	Student	No	1-5	Karvenagar to Nanded cit	1	2 Yes	No	No
12	10-20	Student	Yes	1-5	Karve Nagar- Pune railwa	1	3 Yes	No	No
13	21-30	Working	Yes	1-5	Lohegaon- Vishrantwadi	1	7 No	Yes	Yes
14	31-44	Working	Yes	16-20	Nighdi	More than 3	1 Yes	Yes	Yes
15	10-20	Student	Yes	16-20	Gokul Nagar to Pune Sta	1	7 Yes	Yes	Yes
16	21-30	Student	Yes	1-5	Hadapsar	2	1 Yes	Yes	Yes
17	21-30	Student	Yes	16-20	Aundh Road	2	5 Yes	Yes	Yes
18	10-20	Student	Yes	1-5	Vishrantwadi to Pune Sta	1	3 Yes	Yes	Yes
19	10-20	Student	Yes	1-5	Vishrantwadi to Pune Sta	1	3 Yes	Yes	Yes
20	10-20	Student	Yes	1-5	Pride World City - Shivaji	1	7 Yes	Yes	Yes
21	10-20	Student	Yes	1-5	Nigdi-Chinchwad	1	4 Yes	Yes	Yes

Fig.1 Dataset collected through google forms.

IV. DATA VISUALIZATION

We did various operations on the collected data as follows:

1.Barplot

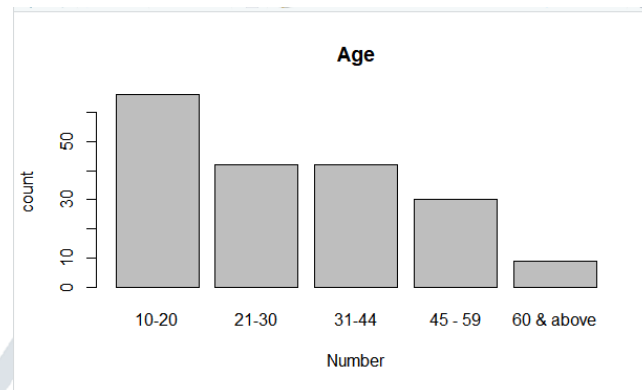


Fig 2. Through barplot we have observed the age groups of travelers travelling through City Buses.

2.Boxplot



Fig 3. Through Boxplot we have done observation considering Profession of the travelers and how much they rate the city buses.

3.Scatterplot

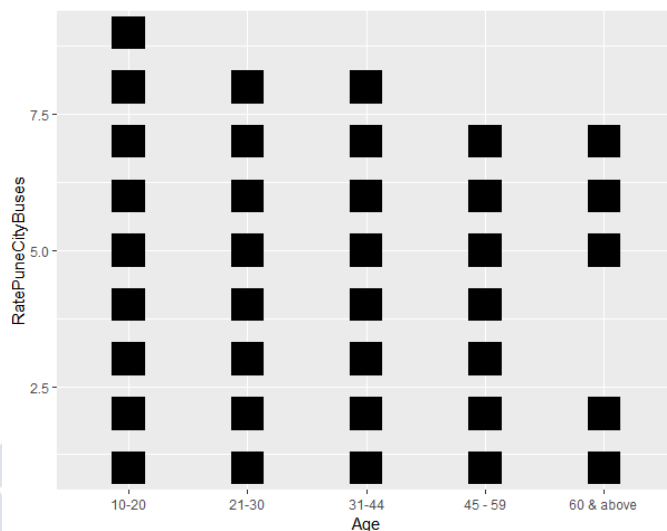
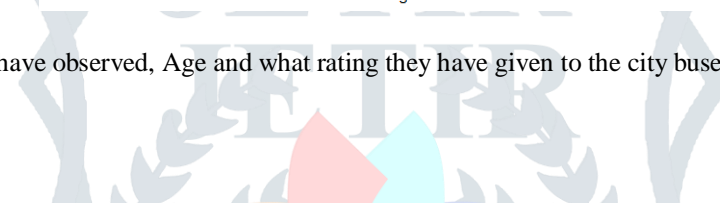


Fig 4. Through scatterplot we have observed, Age and what rating they have given to the city buses.

4.Histogram



Histogram of my_data\$doyougetaseat

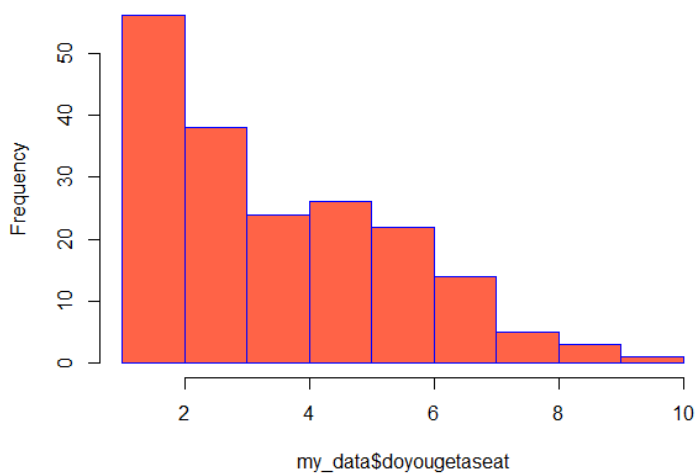


Fig 5. Through histogram we have observed that does the traveler get a seat while travelling.

5. Linechart

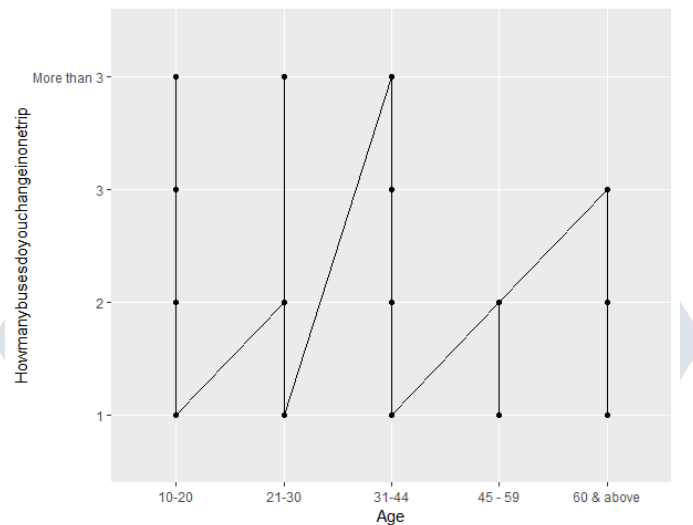


Fig 6. Through Linechart we have observed how many buses does a traveler change while travelling according to his age.

6. Pie Diagram

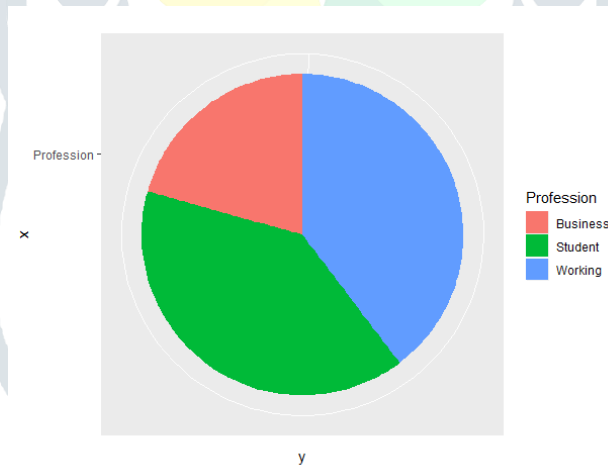


Fig 7. Through Pie chart we have observed travelers according to their profession.

V. OBSERVATION

According to the collected data through the survey we can state that people in the city are facing lots of problems regarding public transportation. The main issue can be said as the number of buses each route consists. As the city is getting widely spreaded so the population is increasing, Buses are unable to deliver the services which they are expected to do so. Every traveler faces the problem of not getting a seat during his/her journey. So here also the number of buses issue gets highlighted.

Another main problem can be considered as the timings between the buses. We very well know that how busy each individual is nowadays, where no one can afford losing a single minute. So the public expects to have a fast travelling service where no time is wasted and they reach their desired destination on time.

With the help of visualizations performed on the collected dataset we can observe that the travelers are not satisfied with the services provided by the Pune city buses. There are many issues which are supposed to be taken into consideration. Main problems faced by the public, is the timings of the buses where the frequency of buses running on the road should be increased. Passengers do not get a seat while travelling is also on of the main issue faced. According to the visualization, Public travelling by buses have rate the Pune city buses below average.

VI. PROPOSE SYSTEM

As seen in the observation, we can say that the buses provide poor services to the public. As the city has lots of population travelling through buses, the services are unable to provide the facilities up to the mark. To improve the system we need a strong and ideal solution which will benefit the travellers. Solutions are not hard to find but hard to implement, system will not improve in short span but to have an fixed solution there should be patience.

We can increase the frequency of buses of every route with time gap of as minimum it can be. If the number of buses will increase the problem of getting a seat can also be solved as not every bus will fully be crowded. As the city is being widely spreaded to connect every corner of the city buses should be provided to those routes. Number of buses will increase so the maintenance of the buses will also be an important task which should be taken into consideration. More number of buses will lead to pollution so here we can suggest to introduce electric buses which will not cause harm to the environment.

VII. CONCLUSION

By analyzing we can conclude that there are many areas in the system which are supposed to be filled with improvements. Improving an system is not an easy task and also time consuming which also needs co-operation from the public also.

VIII. REFERENCES

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