A STUDY ON PASSENGERS' PERCEPTION ABOUT ROAD TRANSPORT WITH SPECIAL REFERENCE TO KOLHAPUR DISTRICT

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Abstract:

Passengers' Road transport is the lifeline for any village, city, state and nation. In Maharashtra Road transport of passengers is mainly through government buses run by Maharashtra State Road Transport Corporation (MSRTC). Although MSRTC has a monopoly for commuting of passengers, people also use unauthorised vehicles like shared auto, shared taxi etc. for their travel. It has been observed that passengers need to use multiple vehicles to reach their destination while choosing unauthorised transport options. Present Study is conducted to analyse the perception of the passengers about the use of multiple vehicles for travelling. The area covered under research is Kolhapur District for the opinion survey. Researcher considered sample size as 400 out of which 184 respondents supported use of multiple vehicles whereas 216 respondents supported use of multiple vehicles. However when both results are compared to each other, the perception about the use of either does not have significant difference. Hence the author concluded that a certain percentage out of the total number of passengers will prefer only government bus services whereas the other one will use unauthorised vehicles.

Key Words: Passenger, road transport, single vehicle, multi vehicle

1. Introduction:

Passenger transport represents the basic assumption for the functioning of urban- rural agglomerations, since it facilitates normal social functioning and smooth economic development. Public passenger transport forms an exceptionally significant service enabling normal social functioning and undisturbed economic development. The increase in the size of cities results in an increased need to include an increasing number of subsystems of public urban and suburban passenger transport. This means that it is important to achieve full integration and coordination of active subsystems into the system of public urban and suburban passenger transport in order to realise the synergic effect of optimal functioning of an integral transport system in meeting the demands for transport services. In the functioning of a system of passenger transport particular emphasis is on the technical and technological compatibility of its subsystems, and mutual organisational and tariff harmonisation. It should be noted that there is strong connection of the realised or desired level of quality of the transport service and its price, and that the traffic system directly affects the efficiency and effectiveness of the economic and overall social system.

However State Transport authorities and Road Transport offices which are mostly government or semi government organisations are emphasising use of only buses to connect all villages and cities. Further they do not allow any private passenger non bus transport by putting them into illegal categories.

These illegal vehicles are known as *Vadap* in local language which literally means sharing a taxi. Such vehicles are helpful for the passengers especially due to low efficiency of Public Bus Transport. Present research

work is an attempt to understand the passengers' perception about public and private transport. The opinion survey was conducted in Kolhapur district of Maharashtra State (research area) to draw the inference.

To acquaint with the research problem stated above, the researcher summarises certain developments and present status of research area with reference to research problem as follows:

1.1 Overview of Road Transport in India

1.1.1 According to World Bank Report (2011), India's transport sector is large and diverse; it caters to the needs of 1.1 billion people. In 2007, the sector contributed about 5.5 percent to the nation's GDP, with road transportation contributing the lion's share. Roads are the dominant mode of transportation in India today. They carry almost 85 percent of the country's passenger traffic and more than 60 percent of its freight. The density of India's highway network -- at 0.66 km of roads per square kilometer of land – is similar to that of the United States (0.65) and much greater than China's (0.16) or Brazil's (0.20). However, most roads in India are narrow and congested with poor surface quality, and 33 percent of India's villages do not have access to all-weather roads.

1.1.2 According to the Central Ministry of Road Transport and Highways , (2018), India has the one of largest road networks across the world, spanning over a total of 5.5 million km. This road network transports 64.5 per cent of all goods in the country and 90 per cent of India's total passenger traffic uses the road network to commute. Road transportation has gradually increased over the years with the improvement in connectivity between cities, towns and villages in the country.

The Indian roads carry almost 90 per cent of the country's passenger traffic. The construction of highways reached 9,829 km during FY18 which was constructed at an average of 26.93 km per day. The Government of India has set a target for construction of a 10,000 km national highway in FY19. During April-June 2018 a total length of 2,345 km of national highways was constructed.

1.2 Kolhapur District Highlights:

1.2.1 Population Structure of Kolhapur District

Sr. No	**Particulars**	**Maharashtra State**	**Kolhapur District**
1	Number of Villages	43665	1216
2	Number of Municipal Corporation	534	23
3	Number of Households	24296607	838138
	Population		
4	Rural	61556074	2645992
5	Urban	50818259	1230009
6	**TOTAL**	112374333	3876001

Source: Census Data 2011

1.2.2 No. of Vehicles on Roads upto 31.03.2017 in Kolhapur District

Type of Vehicles	**Number of Vehicles**
Cars	102577
Jeeps	20746
Taxies	400
Auto Rickshaws	15841

Source: Statistics available on Maharshtra RTO Website

1.3.2 MSRTC Kolhapur Division:

Kolhapur division was established in 1950. Its jurisdiction is limited to the physical boundaries of Kolhapur district. It is divided into twelve depots viz. Kolhapur, Sambhaji Nagar, Ichalkaranji, Gadhinglaj, Gargoti, Malkapur, Chandgad, Kurundwad, Kagal, Radhanagari, Gagan Bavada and Ajara. Kolhapur division is working with a fleet of buses numbering 853 running over 1019 routes and covering the entire district every day. The total length of these routes is 65,628 km. It has been making transport arrangements of 467000 passengers daily with the help of 4869 employees.

Average Number of Passengers per day	467,000
Total Vehicles held	876
Average No. of buses on Road per day	853
Average Effective kilometers operated	2,72,057
Total Routes	1019
Total Length routes kms	65628.56

Source: Internal Reports of Kolhapur Division MSRTC

2. Literature Review

1) **Subodh Rani,(2016)**

This study emphasizes on geographical connectivity among different villages results into improvement in certain social indicators in Harayana through transportation. It states that Transport is regarded as a set of interconnected routes linking numerous destinations and providing pace for the movement of people and commodities. The system of transport is quite often compared to the nerve system of a human body and aptly so. Various means of transportation play a key role in the world as the circulatory system of the body.

2) **Tukaram M Dabhade(2014)**

The study of comparative depot wise performance of Kolhapur division and financial performance of Kolhapur division of MSRTC revealed that there is negative profit margin. Hence it is concluded that economic performance of Kolhapur division is not satisfactory

Average load factor is 60.11 per cent. Every year load factor is below 80 per cent, it is one of the basic problems faced by MSRTC in Kolhapur division

3) **Patange Vasant Nanarao (2017)**

The study focuses on Economic performance analysis based on annual profit. The area under study was Jalagaon District Division of MSRTC which has 11 depots in it. The trend analysis shows that there is positive increase in Income and performance of Jalgaon Division of MSRTC (i.e.100 in the year 2000 and 206.43 in 2012-13) The jalgoan division faced the average loss worth Rs15600 lakhs. The study concludes that competition and low occupancy rate is the important reason behind low economic performance.

4) **Raghunath, T (2015)**

The study pertains to the study of costs, revenues, profit, sources of investment and key result areas and cost control measures in Andhra Pradesh Road Transport Corporation (APSRTC), the largest transport undertaking in the public sector.

This study focuses on cost calculations and analyzing its impact on the performance of Andhrapradesh transport Corporation with reference to the Hyderabad region.

It incurred losses for seven consecutive years starting from 1977-78 to 1983-84 and again it plunged in to losses from 1989-90 and the cumulative losses reached to Rs.100.45 crores by the end of 1991-92. As on March 2005, the accumulated losses of APSRTC were about Rs.1221 crores. It concludes that ASRTC performance is low due to high cost burden.

The occupancy ratio has been decreasing over the years. The reasons identified for the low occupancy ratio are: increasing number of 7-seater steering autos, increase in two-wheeler population, operation of maxi cabs in short distance routes and shift of passengers from STUs buses to other private vehicles and modes.

5) **Uttama K.H.(2010)**

This study focuses on cost calculations and analyzing its impact on the performance of North West Karnataka transport Corporation. In the case of the NWKRTC, operating revenue refers to the amount realized by the sale of a service which represents its regular operation. Operated revenue is further divided into 'revenue from passengers' and 'revenue from other sources'. Other sources include items like Contract Service, Passenger Luggage, and Parcel Services etc. Non-operating revenue consists of those revenue receipts which do not arise out of the regular operations of the Corporation. It includes items like receipts emerging from the sale of scrap, advertising etc. By comparing the total cost and the total revenue, the profit/loss from 1998-99 to 2007-08, to find out the financial performance of the Corporation researcher concluded that the corporation has made a profit in the first five years ; after the year 2003 the Corporation showed regular loss in the study period.

6) **Narayanan, K (2015)**

This study reveals the conceptual framework for Costs related to Integrated Mode of Public Transportation. Considering Chennai Metropolitan as a research area, researchers had studied the integration of Mode of Railway and Bus Transport in Chennai. He also has proposed a cost effective model for integration of transport modes.

The key findings are people agreed on the following

- Travelling by multiple modes will be easier if there is a facility of using a single ticket for the whole trip
- Availability of Stop/Station within 10 minutes walking distance is important for using public transport
- Public transport is the best way to reach work spot

Researcher concluded that if Railway and bus transport are integrated, users will find it convenient and cost effective.

7) **Sanjay Kumar Singh and Anand Venkatesh (Aug 2004)**

In this paper researchers analyzed the level as well as growth of productivity and economic profitability of Swargate Depot of MSRTC using its monthly data during 1995 to 2001. The study emphasized the findings that the productivity of the depot has declined by around 15% over the sample period. Although there is a marginal increase in output prices, productivity declined resulted into economic ability declination by 12% .

This paper has adopted unique methodology to analyse economic performance i.e. Index Numbers. Further the researcher established positive relation between Occupancy Rate and Economic Performance.

8) **Samuel Zimmerman and Ke Fang, The World Bank, Washington, USA (March 2015)**
Public transport has the most customer appeal and is most efficient when it is planned and operated as a seamless, integrated system. This is particularly important in urban environments in fast growing economies such as China and India, where public transport must increasingly compete with private vehicles which offer door-to-door, "one seat" travel irrespective of time of day or day of the week.

9) **Jaspal Singh (Head of the UITP India Office) 2016**
Smart ticketing has been slow to gain popularity in India. All metro systems have implemented smart ticketing solutions for its 'closed' environment; Delhi Metro sells approximately 16,000 smartcards a day and 1.8 million commuters use the card daily. However, the smart ticketing systems are not yet integrated with the bus system. The federal government did make plans to introduce a Smart National Common Mobility Card (NCMC) to enable seamless travel using different modes of transport across the country as well as having retail purchasing benefits. However, the initiative did not take off. In July 2015 the government established a committee to recommend an inter-operable smartcard.

Lessons from Literature Review :

i. The different public passenger road transportation from India are facing severe losses. The Losses are mainly caused by use of multi vehicle transport by passengers i.e. use of ST Buses for some distance and use of shared taxi for some distance.

ii. There is no study about the passengers' view for single vehicle or multi vehicle transport.

iii. Integrated Transport system will be more convenient for the passengers

3. Collection of Primary Data and Sampling Techniques:

Details of Opinion Survey:

Primary data such as socio-economic characteristics of the residents, their travel pattern travel time, mode choice preferred, reason for it, their willingness to use public transport services if integration of mode is done etc. were collected from the conducted household survey in the study area.

According to the Salant & Dillman (1994), face to face survey are best suited for surveying population for whom there is no complete address list or who are not likely to respond willingly or accurately by phone or by mail and when the sample is scattered over a larger area.

Hence household survey will be conducted by using trained interviewer. After collection of data Researcher used Two Sample T Test to find out whether there is a significant difference in Passenger perception about the efficiency on the basis of Suitability, Punctuality, comfortability and Safety among multivehicle and single vehicle transport

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Table 3.1 Null Hypotheses and Alternate Hypotheses

Null Hypotheses	Alternate Hypotheses
H01: There is no significant difference in suitability of multi vehicle transport and suitability of single vehicle transport.	H11: There is no significant difference in suitability of multi vehicle transport and suitability of single vehicle transport.
H02: There is no significant difference in Punctuality of multi vehicle transport and Punctuality of single vehicle transport.	H12: There is no significant difference in Punctuality of multi vehicle transport and Punctuality of single vehicle transport.
H03: There is no significant difference in Comfortability of multi vehicle transport and Comfortability of single vehicle transport.	H13: There is no significant difference in Comfortability of multi vehicle transport and Comfortability of single vehicle transport.
H04: There is no significant difference in Safety of multi vehicle transport and Safety of single vehicle transport.	H14: There is no significant difference in safety of multi vehicle transport and Safety of single vehicle transport.

Table 3.2 Statistical Analysis (Two Tailed Approach) for the Primary Data

Variables	**Suitability**		**Punctuality**		**Comfortable**		**Safety**	
Passenger Perception Level	**M**	**S**	**M**	**S**	**M**	**S**	**M**	**S**
Very Low	25 14%	29 13%	35 19%	25 12%	32 17%	28 13%	20 11%	30 14%
Low	38 21%	45 21%	30 16%	42 19%	36 20%	40 19%	24 13%	32 15%
Neutral	18 10%	24 11%	25 14%	29 13%	20 11%	20 9%	35 19%	38 18%
High	59 32%	68 31%	40 22%	72 33%	45 24%	78 36%	51 28%	60 28%
Very High	44 24%	50 23%	54 29%	48 22%	51 28%	50 23%	54 29%	56 26%
Total	**184**	**216**	**184**	**216**	**184**	**216**	**184**	**216**

Mean	3.32	3.30	3.26	3.30	3.25	3.36	3.5	3.37
Variance	1.93	1.90	2.26	1.74	2.19	1.90	1.75	1.89
Pooled Variance	1.918395318		1.983195		2.037942		1.829953	
Hypothesized Mean Difference	0		0		0		0	
Df	398		398		398		398	
t Stat	**0.14196498**		**-0.3163**		**-0.77021**		**1.075331**	
P(T<=t) one-tail	0.44358975		0.375972		0.220816		0.141439	
t Critical one-tail	1.648691174		1.648691		1.648691		1.648691	
P(T<=t) two-tail	**0.887179501**		**0.751943**		**0.441633**		**0.282878**	
t Critical two-tail	**1.965942248**		**1.965942**		**1.965942**		**1.965942**	

Interpretation

The output from the above table shows that **P(T<=t) two-tail** in all four variables is greater than 0.05. At 5% significance level, one can not reject the null hypotheses in each case. Hence Researcher accepted the hypotheses. Further the rule set by **t critical two tail** is to reject null hypotheses if relevant **t > 1.965942248 or t < -1.965942248** supports the previous results that accept the null hypotheses in each case.

Hence researcher concludes that there is no significant difference between perception of passengers. Both types of passengers have firm opinions about their choice for transport.

Conclusion:

The MSRTC Kolhapur division is not performing well in terms of financial results. The main reason behind it is Low Occupancy Rate of big size buses. Hence passengers can be classified as a user of only MSRTC buses and a user of available transport (can be MSRTC or Shared auto). When both results are compared to each other, the perception about the use of either way does not have a significant difference. Hence the author concluded that a certain percentage out of the total number of passengers will prefer only government bus services whereas the other one will prefer whichever is available to them. As an effect of this the occupancy ratio for MSRTC buses and financial performance thereby remains low.

Hence researcher suggest that Road transport authorities should legalise share taxis and merge them into transport system of the district. An integrated transport system will be proved beneficial for passengers and government considering the optimum use of resources.

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