DOI : 10.18843/ijms/v5i1(2)/09
DOI URL : http://dx.doi.org/10.18843/ijms/v5i1(2)/09

Impact of Metro Rail on Para Transport System of Urban Commutation- A Study on Hyderabad

Dr. Geetha Naik Vislavath,

Asst. Professor of Public Administration
MVS Govt. Degree College,
Mahabubnagar, Telangana, India

ABSTRACT

Rapid transport system has become the core priority of urban administration and made the policy makers to undertake rapid transport modes like Metrorail to ease the process of urban commutation and to save the productive working hours of millions of commuters travelling either side of their cities. The major problem with respect to rapid transport system in India lies in the policy framework itself which advocates that, only cities having one million and above population is eligible to have rapid transport mechanism like metro rail. It is the reason why only nine cities of the country are presently equipped with metro rail system of which Hyderabad occupies an important space not only due to demographic divergence, but also due to the public private partnership (ppp) mode of building and operating 72 km of metro rail in important corridors impacting the existing transport modes like state transport corporation buses and Para transit vehicles like Autos or simply auto rickshaws which are widely effected with the commencement of metro operations, because there are 1.6 lakh registered auto rickshaws providing livelihood to equal number of families transporting 15 lakh commuters a day therefore it is felt important to study the impact of metro rail on Para transport system with the core objectives of understanding the nitty-gritty of metro rail operations in Hyderabad and accessing the perceptions of Para transport stakeholders on metro operations.

Keywords: Metrorail, urban administration, Para transport.

INTRODUCTION:

The concept of urban transportation is by no means a new phenomenon in Public Administration. The relics of Sindhu civilization implicitly reveals that there were wider roads constructed in the ancient society to ease urban transportation. However the 17th century has marked urban transportation with a new revolution in the form of steam engines adopted by urban transport companies like London North West Railways, Belgium Railways and Sao Paulo metro network of Brazil. These companies have adopted railways as the main mode of operations which are still rendering services to millions of commuters every day. These developments are equally traceable in modern Indian transport system. The first train that ran on Indian tracks was between two sub urban railway stations of the then Bombay presidency it was followed in other presidency towns of Calcutta and Madras which is a clear indication that railway network was initially confined to urban transportation.

It would be very ludicrous to state that only railway network has scattered the demands of urban commuters. Because the invention of automobiles in the form of bus, car and auto rickshaws took no longer time for the urban arcades to adopt them as the convenient mode of transportation and their size is explonationally increased in the proportion of population. But it is well established diction in urban administration to note that, "the ever increasing attribute of urban area is population and the never increasing attribute is the size of land". It holds good for urban traffic management as well. i.e. the increase in number of public and private transportation vehicles have made the existing roads a very congested space and started taking away the fuel and productive

working hours along with the aggravated pollution. Therefore think tanks have conceived an idea of metro rail as an alternative mode of urban transit which reduces the time of commutation and ensures comfortable trips to commuters at an affordable fare. This positive wave has motivated Indian government to encourage various cities of the country to adopt metro rail model. There are nine major cities operating metro rail of which Hyderabad occupies second position after Delhi with respect to the length of operation with a stretch of 72 km. of course the first phase led to the commencement of metro operations only to the extent of 30 km in important corridors of the city and started showing the influence on prepaid taxies and autorikshaws. It is very early stage to comment whether such influence is positive or negative as only one month is lapsed since the beginning of metro operations in the city. Nevertheless one month is a big span for daily bread earners like auto drivers whose livelihood depends up on the number of trips made per day. Thus, it enables the researchers to study the impact of metro rail operations on Para transit modes of auto rickshaws. However it is worth reviewing the available literature on urban transport system before framing such study

REVIEW OF LITERATURE:

Brown & Dayal (2012) have conducted a study on urban transport system of four metro peloton cities of India and stated that, transportation within the city limits has become a dated infrastructure altogether and cannot meet the demands of population in the next ten years, unless the urban planning system redesign and implement the transport system that can meet the demands of the popu7lation which is projected to grow by next fifty years. They have strongly expressed in their paper that, urban population will represent two third of the total population in the next twenty years and it will show an enormous impact on urban transit system. Anand & Quack (2013) who conducted a study on urban logistics have expressed that, future of Indian cities widely depends up on their ability to establish suburban connectivity with the down town of the city. They are of the opinion that, cities have become compact in terms of residential accommodations and forcing the development of satellite towns around the cities and making commutation an unavoidable task to millions of citizens every day.

Samrat (2014) is of the opinion that, urban transport system should not be viewed as profit making venture. Because it is an important organ of public utility service entitled to be utilized by the urban tax payers. He strongly expressed that, financial matrix like payback period and internal rate of return calculated in infrastructure projects should be avoided while deciding the merits of urban transport projects and social benefit analysis must be adopted to accept or reject such ventures. Low & Gleeson (2015) have expressed in their article that sustainability of urban transport system is the major factor to be considered while designing urban commutation medium. They have studied the proposals of various cities on metro rail projects and advocated that, metro is not the remedy for all the problems faced by urban commuters. There are many other rapid transport models like dedicated bus lines on roads which can be adopted with very less expenditure and make the transportation more viable. Naidu and Thomas (2016) have conducted a study on Delhi metro rail operations and concluded that, metro trains are capable of creating a radical change in the transport planning of Indian cities provided the new corridors are considered based on potential demand and occupancy ratios of existing transport models. They have also expressed that more than one operator should be allowed within one city limits to make urban transport system more competitive in the long run.

GAPS IN LITERATURE:

it is found that, much of the literature available on urban transport system in India has focused to envelop the commuter's views and sustainability of each model. But the impact of new transport models like Metro on the livelihood of paratransport operators like cab and auto drivers is not assessed. Similarly there is hardly any literature available on Hyderabad Metro operations which are the first Public Private Partnership of its kind in the country. Therefore, the following objectives are considered to draft this paper.

OBJECTIVES:

- To understand the present status of metro rail operations in India
- To study the present status of urban transportation in Hyderabad
- To access the impact of metro rail operations on Para transport stakeholders in the twin cities of Hyderabad and Secundrabad

RESEARCH METHODOLOGY:

This paper is a conglomeration of both secondary and primary data sources. The first and second objective are accomplished with the help of secondary data on metro projects, their length of operations, expenditure, capital expenditure and mode of operation which are collected from the website of union ministry of urban development and Hyderabad Metro Rail Development Authority. The third objective is based on primary data which is collected through a questionnaire administered on selected sample frame and tested with the help of the following hypothesis.

Null hypothesis (H_0): Metro rail could not impact the livelihood of para transport operators in the city of Hyderabad

Alternative hypothesis (H_1): Metro rail has been showing significant impact on the livelihood of para transport operators in the city of Hyderabad

The null hypothesis will be tested using Sign test of large sample at 5% significance of Z value.

Sample Size: This paper is brought out with a sample of 50 respondents who meet two conditions i.e. they must be auto drivers owning or hiring an auto and they must be operating in the urban areas of Hyderabad and Secunderabad.

Present Status of Metro Rail Operations in India: Government of India is often criticized for taking very last minute decision to equip its cities with metro rail project despite seeing the success of Kolkatha metro which has chartered its journey very much before the liberalization of the country. Nevertheless, it took very aggressive decisions in the new millennium to identify the cities having urgent need of metro trains and commenced its operations in Delhi. It has started expansion in a very short span of time and grew to ten cities as shown in the following table.

No.	City	Partner	Stations	Distance in KM
1	Delhi	DMRL	135	203.6
2	Bangalore	BMRL	42	42.3
3	Jaipur	JMRC	09	9.7
4	Mumbai	MMRDA	09	20.1
5	Kolkatha	KMRC	24	14.67
6	Chennai	CMRL	20	33.6
7	Kochi	DMRL	16	18.5
8	Nagpur	NMRC	15	18.5
9	Hyderabad	HMRL	64	72

Source: Ministry of Urban Development, GoI.

It can be seen from the above table that, all the ten cities having metro rail network have created special purpose vehicles to operate the projects of which, Kochi and Hyderabad have got diversity in terms of channel partner. Hyderabad is the only project executed under PPP mode with L& T whereas; Kochi has been partnered with DMRL.

PRESENT STATUS OF URBAN TRANSPORT SYSTEM IN HYDERABAD:

Hyderabad having a chequered history of 420 years has virtually adopted every modern mode of transportation that emerged on par with the time. Nizam Road Corporation and Nizam State Rail ways have had transport operations way back in the end of 19th century itself. The twin cities of Hyderabad and Secundrabad witnessed very wide road network and railway track with in the municipal limits and continued to be developed by the modern state administrators in the erstwhile Andhra Pradesh and in the present state of Telangana. There are three important modes of public transport systems namely road transport corporation- buses, multi model transport system trains (MMTS) and metro along with two Para transport models i.e. Auto's and cabs

The state transport corporation which is recognized as RTC runs a fleet of 3400 buses with the total of 19850 trips per day transporting nearly 11.5 lakh commuters in the city. Whereas multi model transport system (MMTS) with 27 railway stations have been transporting 3 lakh commuters everyday from three important destinations. The newly operated metro rail broke out all the records of the other cities and transported nearly 2 lakh commuters on day one of its operations. The Hyderabad Metro Rail Corporation has formally declared that 14 lakh commuters have availed metro services within 15 days of commencing the operations. It clearly shows the impact of metro rail on the transport system of Hyderabad. On the other hand the Para transport models

autos and cabs together transmit 24 lakh commuters everyday in the city of which autorikshaws alone (including seven seaters) transports 16 lakh commuters. The following table provides a vivid view on Hyderabad transport system.

S.N.	Vehicles	Status (lakhs)	Percentage
1	BUSES	11.5	28.9
2	MMTS	3	07.60
3	METRO	1.3	03.27
4	AUTOS	16	40.20
5	CABS	8	20.10

It is evident from the table that 40.2% of urban commuters in the city of Hyderabad traditionally depend on autos and 20.1% on cabs that is Para transport system alone contribute 60.3% of urban commutation in Hyderabad. The state owned RTC carries 28.9% of the fleet and stands in the second position. However the state owned carrier is not a profit making entity and does not impact the livelihood of employees working in it. Whereas 60.3% of para transport operators who are direct dependents on auto rickshaws and cabs for their livelihood may be effected by new models of transport like metro which has to be confirmed with statistical evidence derived from testing of hypothesis.

PERCEPTIONS OF AUTO DRIVERS ON METRO OPERATIONS:

S. N.	Variable	Before Commencement of Metro Operations						After Commencement of Metro Operations					
		A	%	B	%	C	%	A	%	B	%	C	%
1	Income	5	10	33	66	12	24	9	18	31	62	10	20
2	Trips	13	26	27	54	10	20	14	28	28	56	8	16
3	Hours	4	8	31	62	15	30	30	60	14	34	6	12
4	Traffic	9	18	29	58	12	24	24	48	24	48	2	4
5	Demand	12	24	22	44	16	32	32	64	10	20	8	16

It is found from the primary data that, only two members out of 50 i.e. 4% in the high earning group of > 1000 per day are effected due to metro, another 4% i.e. 2 members out of 50 in the mid earning group of Rs. 500/- to 1000 per day are effected due to metro. 4 members out of 50 i.e. 8% of lower earning group i.e. less than Rs 500/- per day are affected. It means those who were earning less from autos have had a direct impact after the commencement of metro operations but this primary interpretation does not generate any conclusion due to statistical irregularities which are tested with Sign test at 5 % significance

TESTING HYPOTHESIS:

OUT COME OF THE QUESTIONNAIRE:

SN	Question	Before metro	After metro
1	Your daily income through running an auto	A < 500/- B 500/- to 1000/- C >1000/-	A < 500/- B 500/- to 1000/- C >1000/-
2	Average number of trips per day	A <10 B 10 to 20 C >20	A <10 B 10 to 20 C >20
3	Average hours of running	A <3hrs B 3 to 8hrs C >8hrs	A <3hrs B 3 to 8hrs C >8hrs
4	Average traffic conjunction in the running time per trip	A <15 min B 15 to 30mins C >30mins	A <15 min B 15 to 30mins C >30mins
5	Demand for auto's in the metro corridor	A <10 B 10 to 20 C >20	A <10 B 10 to 20 C >20

SIGN TEST:

S. N.	Before metro	After metro	sign	S.No	Before metro	After metro	sign
1	B	A	-	26	B	C	+
2	B	B	0	27	B	B	0
3	B	B	0	28	B	B	0
4	B	A	-	29	B	B	0
5	B	B	0	30	B	B	0
6	C	B	-	31	B	B	0
7	A	B	+	32	C	A	-
8	B	B	0	33	B	B	0
9	B	A	-	34	B	B	0
10	B	C	+	35	B	B	0
11	B	C	+	36	B	A	-
12	B	B	0	37	C	B	-
13	B	B	0	38	B	B	0
14	A	A	0	39	A	B	+
15	B	B	0	40	B	C	+
16	C	A	-	41	C	B	-
17	B	B	0	42	C	C	0
18	B	B	0	43	C	B	-
19	B	C	+	44	B	B	0
20	B	B	0	45	B	C	+
21	B	B	0	46	B	B	0
22	C	B	-	47	B	C	+
23	B	A	-	48	B	C	+
24	A	B	+	49	C	C	0
25	B	A	-	50	A	A	0

Number of + signs = x= 11, Number of – signs = 13, number of 0s = 26
N= summation of + signs and – signs i.e. 24,
$Z = x-np/\sqrt{npq}$, where p and q are probabilities to get + or – signs= 0.5
$Z = 11-24(0.5)/\sqrt{24(0.5)(0.5)} = -0.408$
Table value of Z at5 % significance is 1.645
Interpretation: calculated value of Z is less than the table value i.e. $-0.408<1.645$. the null hypothesis H_0 is accepted. It means, Metro rail operations could not impact the livelihood of para transport operators in Hyderabad.

CONCLUSION:

The statistical inference in this paper has enabled to draw the conclusion that, auto drivers and cab operators who are referred to para transport operators were not affected due to the commencement of metro rail operations in the city. But it is very less span of time to generalize this conclusion, as the city of Hyderabad has only started 41 % of the planned corridor of 72 KM which may commission the operations in one year.

REFERENCES :

Brown A & Dayal A (2012). Future of Urban Transportation in India, *Saga Journal of Sustainable Development* 4(6).
Anand Nitesh & Qack Sans (2013). Urban Logistics & Future Development, *Procedia Journal of Social Sciences*, 12(36).
Samrat .J (2014). Sustainability of Project Appraisal Techniques in Urban Transport Projects, *Landscape Journal of Development* 16(32).
Low Nikolas & Gleeson. S. (2015). Alternative Transport Models for Rapid Development, *International Journal of Economic Development*, 9(18).
Naidu.B.V & Kutty Thomas (2016). Prospects of Competitiveness in Urban Transportation, *Palgrave Journal of Urban Studies*, 12(3).
