Pulse.

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IMPROVING SERVICE QUALITY IN THE PUBLIC BUS TRANSPORT THROUGH THIRD PARTY AUDIT

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Highlight

The exponential acceleration of India's population has put intolerable strains on the Indian transport system. In the last two decades, owing to liberalization as well as industrial development especially in IT sector, India witnessed steep migration to cities like Bengaluru, Pune, Hyderabad, Delhi NCR, resulting in demand far exceeding the limited supply of transport infrastructure and services.

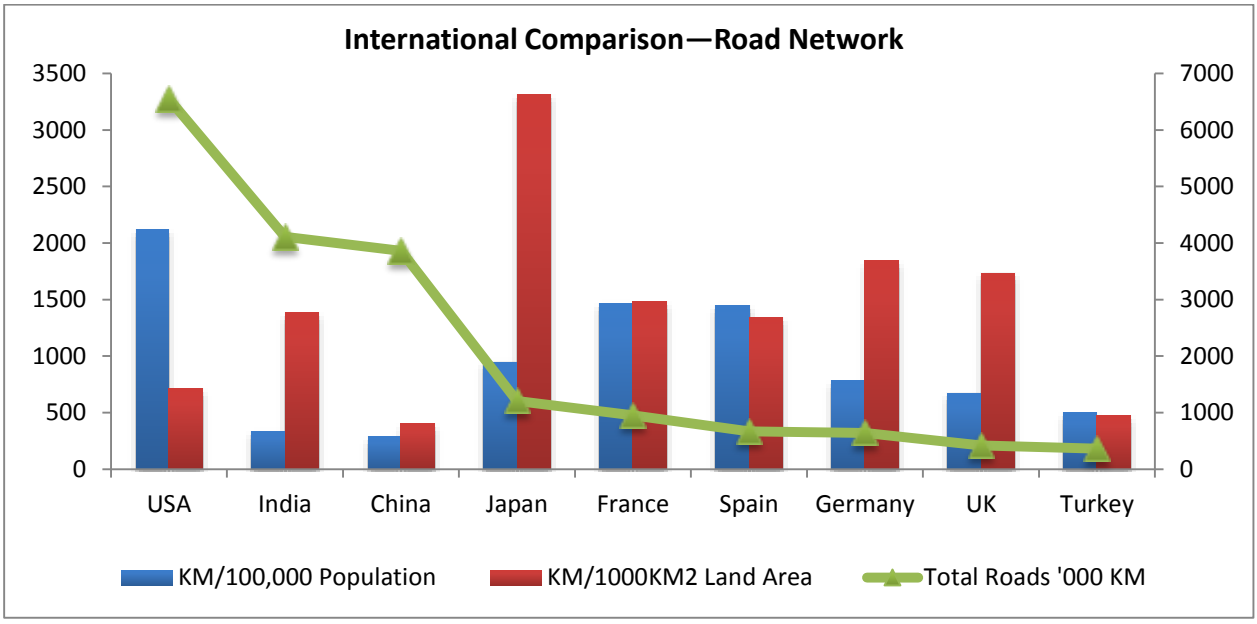
With buses carrying more than 90% of the public transport in Indian cities it is considered the most critical segment of public transport. However, the present public bus transport system is crippled with operational challenges. Most of the buses in cities are dangerously overcrowded carrying significantly higher number of passengers than the recommended capacity. Similarly, in non metro cities, the passengers keep on riding the roofs or sides of buses, which is highly unsafe resulting major accidents on a daily basis. Further, the buses do not adhere to their schedule and often stop at an irrational location than the earmarked bus stop which creates inconvenience for the passengers. Apart from this the design of the buses is such that most of them are unsupportive for differently-abled passengers. The above mentioned issues and challenges clearly reflect the current inefficiencies of public bus transport system in India.

To attain an effective and efficient public bus transport system which can cater to the existing and projected population of India a third party audit could be conducted. The audit will not only ensure that the buses plying on the road adhere to the safety and comfort standards of the passenger but it will also ensure that they follow their schedule and assigned routes. The framework for the same must comprise of comprehensive factors impacting the service quality of the public bus transport like staff quality, timeliness & reliability, safety & compliance, ticketing system and enquiry & complaint handling system.

Background

Public transport in India

A convenient public transport system is a valuable key driver for the economic growth of any country. Specifically, in India, which is the second most populous country in the world with a population of around 1.25 billion people, the rapid increase in population has put significant pressure on its transport system. An ineffecient public transport system may lead to weak connectivity across the locations, accidents, road jams, idle productivity and waste of resources. Like other countries, India's public transport system also comprises of rail, roads, aviation and shipping. However, to fulfill the demand of 1.25 billion people across the country, rail and roads are the dominant modes as compared to aviation and shipping. Due to the largest connectivity, easy accessibility and frequent availability the road transport has emerged as the most popular mode of public transport in India.

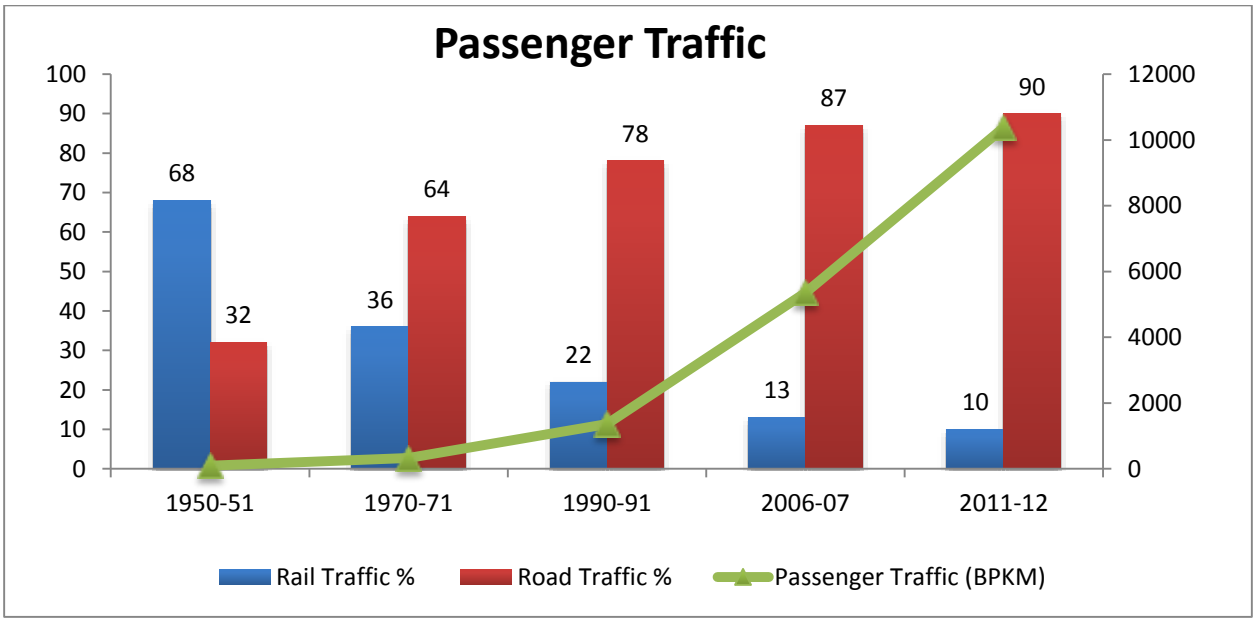


Source: International Road Federation, World Road Statistics, 2011

On global context, after USA, India has the second largest road network followed by China. According to the data presented by Ministry of Road Transport & Highways, Government of India, the total length of Indian roads has increased to 4690 thousand KM in the year 2011 from 3374 thousand KM in 2001.

The current land transport system: Transport through roadways remains the most popular mode of public transport

The share of roads (billion passenger kilometer or bpkm) in total passenger traffic carried by both rail and roads together has increased to 90 per cent in 2011-12 from 87 per cent in 2006-07. The demand for this sector has been increasing over the years due to increasing trend in trade, employment and development of infrastructure. According to the projections of National Transport Development Policy Committee (NTDPC) total passenger traffic is expected to grow at about 15 per cent per annum to reach 168,875 bpkm by 2031-32 from 10,375 bpkm in 2011-12. Similarly, the growth in rail passenger traffic is expected to be around 9 per cent per annum.

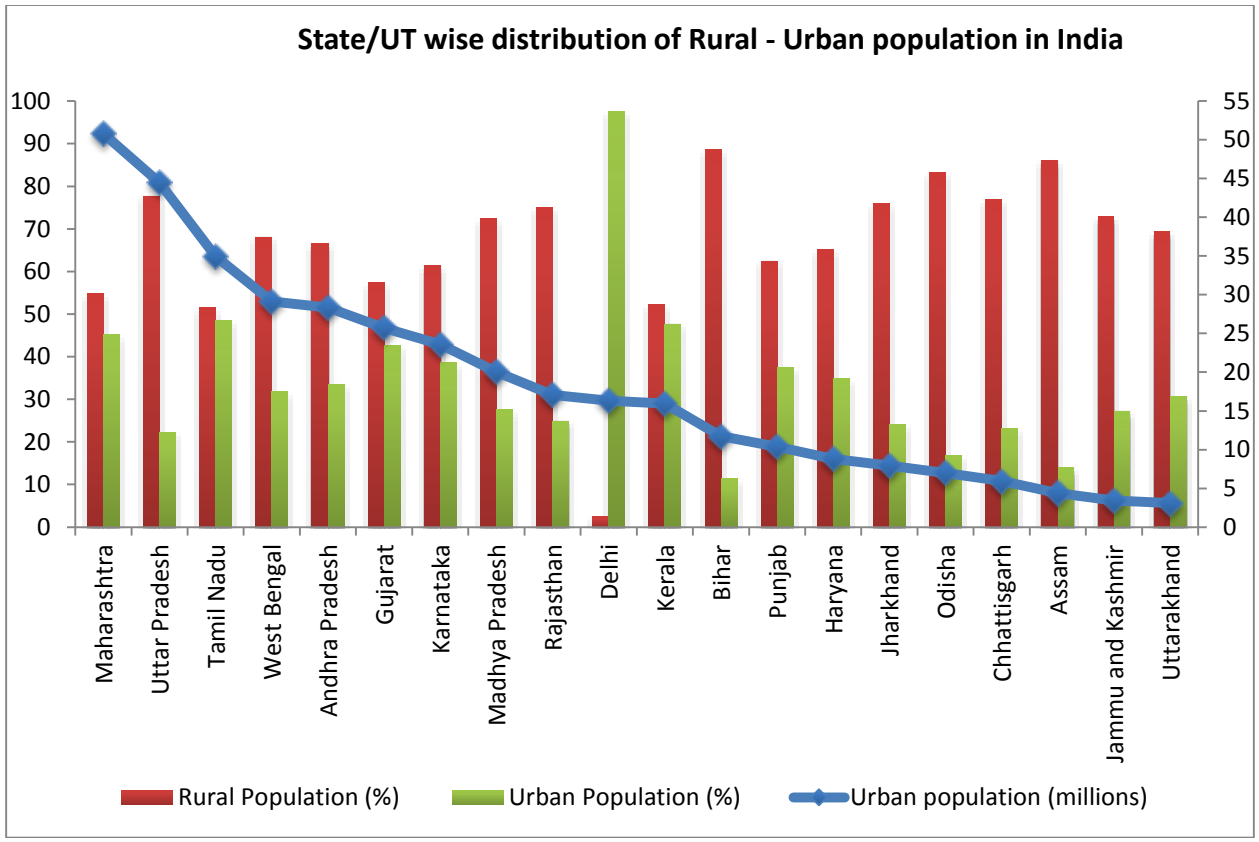


In India, the road transport is mainly carried through bus, car, two-wheeler and three-wheeler. As per the analysis shown in the below table, buses are the most fuel efficient vehicle for public transport with 0.58 liter diesel per person per 100 kilometers followed by two-wheeler. Furthermore, the easy availability of buses with better connectivity and price among other means of transport has created more dependency of passenger on this mode of transport. Car is the most fuel utilized vehicle with 1.83 liter petrol per person per 100 kilometers.

Relative Fuel Efficiencies of Various Road Transport Modes					
Vehicle	Fuel	Fuel Efficiency* (KM/L)	Fuel Utilised Per 100 KM	Vehicle Capacity (Passenger)	Fuel Utilised Per Person
Bus	Diesel	4.3	23.26	40	0.58
Two-wheeler	Petrol	44	2.27	2	1.14
Three-wheeler	Petrol	20	5.00	3	1.67
Car	Petrol	10.9	9.17	5	1.83
**Source: Report of the Working Group on Roads for National Transport Development Policy Committee (NTDPC), May 2012*					

Rapid increase in population exerting pressure on the Indian road transport system

With an increase over 220 million people in absolute number of population during 2001 to 2014, India's total population has reached to around 1.25 billion which has been creating immense pressure on passenger traffic. The same can be ascertained by the number of passengers carried per bus per day which is more than 600 passengers (annexure-1). The country's population has shown a growth rate of 17.7% during 2001-11, as compared to 21.5% in the previous decade. Although, there is a decrease in the growth rate for the last decade, however, due to development activities in the country the population of urban area has shown an increase of 31.2% in the year 2011 from 17.3% in 1951.



Note: Data shown for top 20 population states
Source: As per census 2011

As per census 2011, there are 468 class I cities and 7467 number of towns having population over 1 Lakh to 1 Crore where the requirement of bus transport has been increasing. Maharashtra has shown the highest urban population of 5.1 crore in absolute number followed by Uttar Pradesh. Highest proportion of urban population is in National Capital Territory (NCT) Delhi (97.5%) followed by Goa (62.2%), Mizoram (52.1%), Tamil Nadu (48.4%), Kerala (47.7%) and Maharashtra (45.2%).

Issues and challenges in road transport

Increasing number of passengers in urban areas: Due to development activities and increase in trade, the urban population in the country is rapidly increasing. However, availability of buses to cater the population still remains a challenge. Also, the dependency on buses as a mode of public transport has been increasing continuously in all major cities across India which has led to overcrowding, public inconvenience, unsafe and inconvenient vehicles among others. Among all the cities Kolkata tops the chart with 3321 person per bus, followed by Mumbai with 1434 person per bus and Delhi with 357 person per bus.

CITY	MUMBAI	DELHI	CHENNAI	BANGALORE	KOLKATA	PUNE
Transport	BEST	DTC	MTC	BMTC	STC	MPML
Public Transport Buses operated by State Road Trans port Undertaking (SRTU)	4652	5771	3414	6111	956	1549
Other Buses (Registered buses excluding SRTU buses)	8189	39986	33791	22150	3293	13459
Total Buses	**12841**	**45757**	**37205**	**28261**	**4249**	**15008**
Para transit-registered commercial transport vehicles including taxis and three to six seater passenger vehicles	159629	253532	174314	162431	49648	78778
Population	18414288	16314838	8696010	8499399	14112536	5049968
Passengers per bus	**1434**	**357**	**234**	**301**	**3321**	**336**

Source: Ministry of Road Transport and Highways (2011, 2012) and census 2011

Substandard condition of buses: Although, the government has been taking steps to replace old buses with the upgraded fuel efficient and environment friendly buses, but the condition of most of them are still poor. Cleanliness, uncomfortable seats and improper ventilation are some of the issues to name a few. Also, accidental and old buses are not repaired and maintained properly which may lead to traffic interruptions and public inconvenience. A better bus condition can support efficient transport system and provide better services to the passengers.

Deficient service quantity and management system: A better service can automatically support to improve the whole public transport system. In most of the cities the bus routes are known by their numbers painted in front or back of their bodies, which are not visible during night. Bus schedule, timings and stoppage are not followed in a proper way. There is no limit of number of passengers that is allowed to travel in the bus and most of the times they struggle to de-board at their respective station as no one is there to inform about the name of the stations.

Unsupportive system for differently-abled people: India, which is the second most populous country in the world, does not have any facility to provide support to differently-abled people. Entry-exit doors of buses do not allow the passengers to board/ de-board the vehicle by their own. Also, bus stop and ticket counter infrastructure are not supportive as per their requirements and even there are no separate facilities for them in the system. Although, the government is trying to make separate policies and provisions to match the requirements of differently-abled people by considering them an important part of the society but the implementations of the same is yet to be seen.

Frequent road accidents: Economic impact of road accidents is quite high for developing country like India. Last year, World Health Organisation reported that 3 per cent of the Gross Domestic Product is lost in the country due to road accidents. With an increasing number of passenger traffic the possibility of road accidents has also been increasing. The table below shows the road accident profile of some of the major cities in India for 2013:

Name of City	Total number of Fatal Accidents	Total Accidents	Persons Killed	Persons Injured
Delhi	1778	7566	1820	7098
Chennai	1215	9705	1247	8700
Bengaluru	733	5215	752	4334
Kanpur	472	1269	554	923
Patna	514	1214	514	567
Mumbai	481	23512	502	4250
Hyderabad	482	2591	493	2237
Lucknow	458	1254	473	762
Kolkata	420	4437	437	3577

Source: Ministry of Road Transport & Highways

In the country during the year 2013 total 486476 road accidents were reported in which 137572 persons were killed as compared to 2012 where total 490383 road accidents were reported in which 138258 persons were killed.

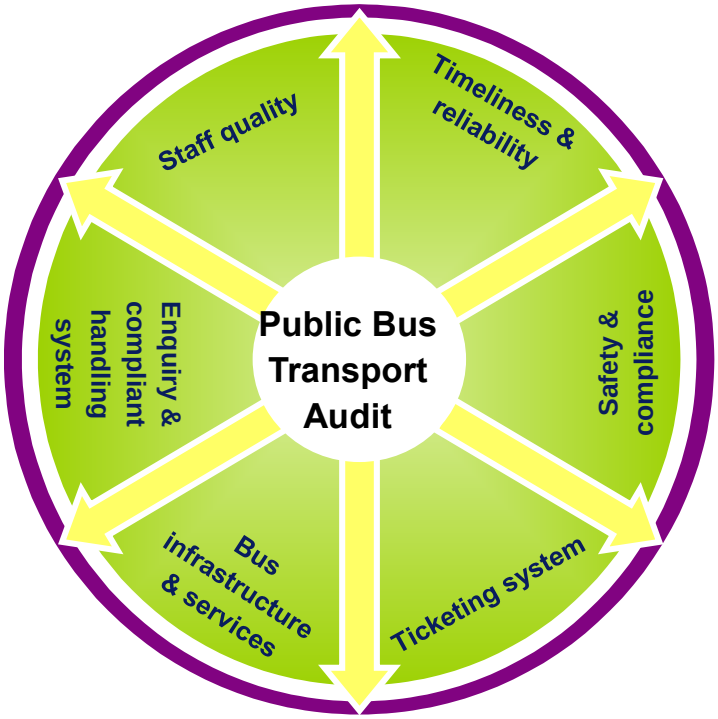
Analysis

Improving the service quality of public bus transport through third party audit

India, which is the second most populous country in the world, relies heavily on its transport system for its economy. Due to the largest connectivity, easy accessibility and availability, better connectivity and prices among other means of transport has made the road transport most popular mode of public transport in India. With buses carrying more than 90% of the total population, it has generated a huge requirement for an effective and efficient public bus transport system.

However, the high travel demand far exceeds the limited supply of the public bus transport infrastructure and services. The system has been crippled by challenges, like, overcrowding due to inadequate system and lack of higher fleet, unsafe and inconvenient vehicles with inefficient designs, irrational location of bus stop, low frequency and improper timings.

Onicra believes that a third party audit of public bus transport system is needed to improve the quality of public bus transportation in India. Audit will not only ensure that the buses plying on the road adhere to the safety and comfort standards of the passenger, but will also ensure that they follow their schedule and assigned routes. The broad framework to be used for the purpose must include an **evaluation of the staff** (both the driver and the assistant), **timeliness and reliability of the bus service**, **safety & compliance followed**, **ticketing system**, **bus infrastructure & services** and **passenger enquiry** & **complaint handling mechanism** which can be achieved through a combination of **process audit, staff interviews, questionnaires** and **mystery shopper survey**.



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Annexure-1: Physical Performance of State Run Transport Unit's (SRTU) for the year 2010-11

Stu Name	Average No of Buses Held	% Fleet utilization	Total Effective KM (in Lakhs)	Daily Bus Ultilization (KM) (per bus held)	Passenger Carried /Bus on road /Day	Total Staff/Bus on Road	KM/Ltr of diesel (KMPL)	Accident/ Lakh KM
APSRTC	21802	99.5	28958	363.9	586	5.56	5.17	0.1
MSRTC	16214	94.7	18973.28	320.6	453	6.74	4.94	0.18
GSRTC	7692	82.3	9485.07	337.8	349	6.43	5.53	0.11
UPSRTC	8557	95.8	10286.45	329.3	157	3.91		
RSRTC	4476	93	5992.01	366.8	223	4.92	5.05	0.08
Kerla SRTC	5572	81.9	5399.29	265.5	742	8.36	4.25	0.14
Karnataka SRTC	7160	91.8	8707.67	333.2	353	5.17	4.85	0.15
TNSTC(MDU)	3460	95.7	5414.66	428.7	1017	4.4	5.47	0.23
North west KnRTC	4259	92	4800.93	308.8	472	5.48	5.03	0.12
S.T Haryana	3249	94.8	3797.08	320.2	372	5.37	4.78	0.08
TNSTC(KUM)	3596	93.2	5917.85	450.9	966	6.78	5.52	0.21
TNSTC(VPM)	3316	96.1	5896.25	487.2	920	6.76	5.54	0.28
TNSTC(CBE)	3014	97.1	4481.48	407.4	997	6.31	5.01	0.22
NEKnRTC	3773	91.2	4294.94	311.9	363	5.11	5.25	0.12
TNSTC(SLM)	2056	96	3550.88	473.2	967	6.46	5.46	0.06
S.T. Punjab	630	99.4	330.95	143.9	517		4.55	0.03
PUNBUS	1136	100	1464.78	353.3	517		4.49	0.06
SETC(TN)	1000	91.9	2041.36	559.3	80	7.17	5.03	0.23
North Bengal STC	783	59.8	402.18	140.7	337	8.46	4.21	0.22
Bihar SRTC	424	42.9	138.37	89.4	83	9.69	4.18	
South Bengal STC	507	69	378.11	204.3	726	6.82	4.05	0.15
Kadamba TC	402	77.4	211.58	144.2	247	6.2	4.33	0.45
OSRTC	333	85	321.83	264.8	46	3.31	4.54	0.15
Himachal RTC	1998	98.8	1655.46	227	NA	4.38	3.65	0.04
S.T. Mizoram	53	52.8	11.74	60.7	22	23.21	3.47	
BEST	4652	87.7	2615.17	154	1030	7.39	2.91	0.32
DTC	5771	75	2920.7	138.7	700	8.21		0.07
MTC(CNI)	3414	88.1	3471.53	278.6	1835	7.83	4.39	0.55
BMTC STU	6111	92.3	4580.2	205.3	758	5.84		
Calcutta STC	956	52.4	348.58	99.9	922	12.18	3.37	0.37
Pune MPML	1549	79	1032.01	182.5	1007	7.99	3.37	0.09
AMTS(STU)	942	71.5	525.05	152.7	1181	7.82		1.02
Kolhapur MTU	135	92.6	108.37	219.9	777	5.33	3.58	1.63
Thane MTU	339	58.4	141.55	114.4	1203	12.09	2.95	0.47

Source IJTM April-June11, published by CIRT

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