



Mo Bus: A Case

Subrata Chattopadhyay and Udit Chawla

*Professor, Institute of Engineering and Management, Kolkata, India

**Associate professor, University of Engineering and Management, Kolkata, India

Corresponding Email: subrata.chattopadhyay@iem.edu.in

Mo Bus: An Introduction

On a rainy weekend in July 2019, Arvind and Amrit reached Bhubaneswar railway station to commence their Undergraduate education at a University in Bhubaneswar.

As it was raining torrentially, Arvind and were facing problems in getting a cab to reach the university. They tried booking an Ola or an Uber cab and used apps of other local cab aggregators, but because of the rains, they were not able to find any. The local autos were also not plying because of the adverse weather conditions. They had a lot of luggage to carry with them and rising surcharges were also starting to pinch their pockets.

Seeing their plight, a passerby asked them if they needed any help. Arvind narrated the situation and got a suggestion to use Mo Bus to reach the University premises without much hassle and at a cheaper price. Arvind and Amrit got a lot of information about Mo Bus Services and decided to take a ride to their new campus using Mo Bus.

Introduction-

After reaching their hostel campus using Mo Bus, Arvind and Amrit decided to find more details on this wonderful transport service. They started reading news articles and slogged through many websites to get a thorough understanding of this unusually amazing bus service in the Temple City of India.

Transport Industry-

To have a deep understanding of the framework of the transport industry and the parameters which are needed for the success of such systems, these young lads made an in-depth study in this domain.

A well-established Transportation Network is essential for economic progress of any country. Proper Infrastructure, Reliable modes of communication and Flexible modes that add to the convenience of people add on to the nation building process. Among the different modes of transport, Road Transport is a popular means, and is widely used by all.

With a road network of 5.23 million kms which is growing exponentially at a rapid rate, India is on a path of high growth spurt and this will benefit all citizens. Contributing 6.3 % to the GDP annually, Transport sector is a major area that needs heavy investment and to Aid in this, PPP and Private Ventures can definitely go a long way. Organizations like ADB (Asian Development Bank) aid in these activities as well and contribute for the growth of the region.

Having intricate supply chains and distribution systems, Road networks play an important role for movement of people and goods from one place to another and help in creation of jobs and add on to the progress of countrymen and the nation.

Also inclusion of technology and innovation makes the environment conducive for upcoming entrepreneurs who can help in easing out the existing load in the sector.

Investigating about Services-

Only knowing about transport services didn't quench the thirst of Amrit and Arvind. They read extensively about public transport systems and the kinds of such systems prevalent in India.

Public Transport System-

Because personal vehicles are increasing, there is a lot of congestion and pollution problems which add to the woes of a growing city. Creating Greenfield infrastructure is not feasible always, therefore revamping, upgrading and modernizing the existing networks of public transport is extremely essential. Greenhouse Gas emissions and road accidents are a byproduct of more personal vehicles and public transport systems have a major role to play in mitigating the effects of climate change.

More than 31 percent of Indians live in urban areas according to the 2011 census. And this share will increase in the forthcoming days. Due to more per capita consumption increase and population explosion, private vehicle numbers have increased rapidly.

Only 18 percent people in India use public transport for regular commutes and this clearly shows the reasons of traffic woes that people face daily.

There are 32 modes of transport plying currently in India.

Bus Rapid Transit Systems-

With more than 1.6 million registered buses, there is still a long way for busses to properly capitalize and be profitable. Most of the Bus operators run in huge losses and their average life span is also within 10-13 years. In short, heavy investment and working is needed in this which can be solved by inclusion of private sector and PPP models. Conversion of Fossil fuel powered busses into hybrid and electric ones will be a preliminary step to ensure more public utilization as well as profitability, but finances play a major role in this. But apart from the busses, other infrastructure is also needed for proper working of the network and services.

BRTS systems can be backbone of the intra-city urban commute for people as they can offer a lot of flexibility at lower costs.

Nationwide need of Public Transport-

There are a lot of needs of a country and transport acts as a major catalyst in accelerating the growth of a country. For getting people to reach their end destinations, Public transport play a major role in this domain. For improving the economic stature of a region to impacting the GDP and associated facts, Public transport and transport services in general have a major role to play.

Congestion and traffic snarls which lead to more travel time and pollution are a major reason why public transport is required. Environmental Impact is also directly correlated with this factor. With more utility of public transport, less carbon dioxide emissions will be there, and this will make the air cleaner and better for people. This will not only make people healthier, but also affect their productivity positively.

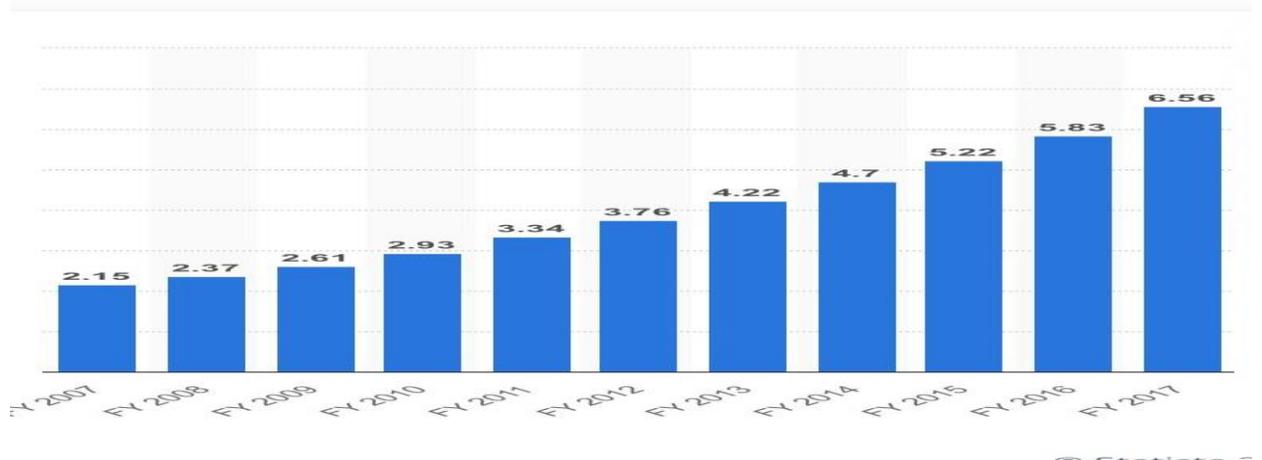
Reduction of Accidents and saving of lives of people will be an added advantage. Proper maintenance of amenities and upgradation at regular intervals gives a major face lift to such activities and creates a civic sense among people to be more aware about the environment and society and be more responsible.

Security is a major benefit as public modes of transport are comparatively safer for people. Awareness and sensitization can be easily done from public transports and this can have large scale impact on masses. Also public transport modes offer more connectivity options to a commuter which add more value to their lives.

Odisha-

After pondering over public transport systems and their utility, the young lads shifted their focus to the specific demographic and geographic location where they were currently residing to expedite their learning process about the trends in transportation domain in this culturally rich and ancient Indian State.

Public Transport in Odisha-

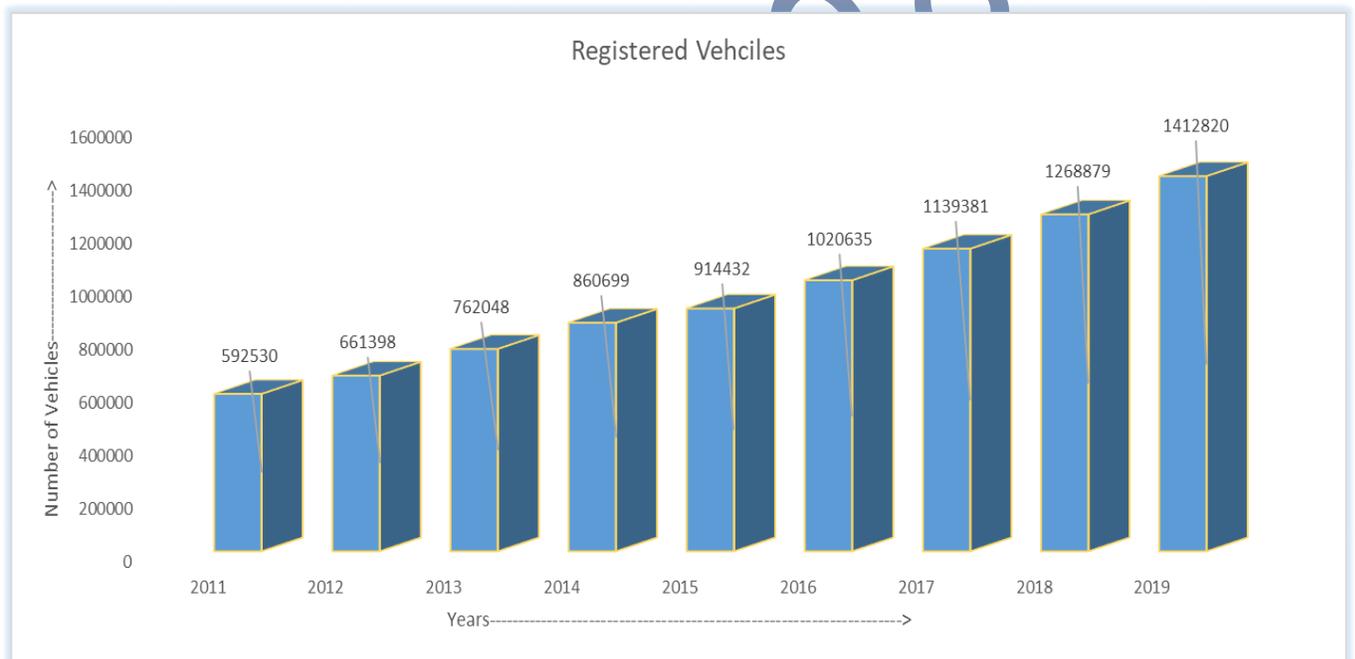


Odisha has a population of 4.5 crores, yet its public transport services are yet to set benchmarks for passengers and daily commuters. It has a good network of roadways but BRTS systems were absent till CRUT and Mo Bus services were launched in the capital region of the state.

Market Potential of Public Transport is huge. With public transport introduction and with proper awareness and outreach, more people will start using this and this will be useful from an operational as well as financial point of view. OSRTC (Odisha State Road Transport Corporation) has been a front runner in this domain with 462 busses plying in its fleet which enhance connectivity for its users. OSRTC has been a pioneer in providing low cost, innovative and best of services to passengers and it has been recognized for its activities by a large number of organizations.

Current Status-

Mo Bus is a landmark addition in the pages of Smart City Mission of the Government. With the Introduction of this Service, People have been empowered to safely and affordably carry on their daily chores while reducing the overall carbon footprint , in turn contributing to a more inclusive and sustainable city.



Having a super-fast Wi-Fi connection while travelling with ease has made this Service lucrative for the Gen Z. Millennials, who are always hooked on their smart devices can seamlessly browse through their routine, without network fluctuations and low bandwidth delays.

Just like Public information Systems are present in major transport hubs, Mo Bus has information and Speaker Systems with digital dashboards to add to the convenience of people. Regular announcements in English, Odia and Hindi makes it a very efficient mode of communication between the passengers and the regulators.

To ensure that there is safety and security of all passengers, CCTV cameras are installed in all busses and across the routes through which Mo Bus traverses. Also, Specific seats for women and

old aged passengers are also marked to ensure their safe passage even in rush hours. Differently abled individuals are also given assistance while getting in the bus and also across their journeys.

Electronic Ticketing and Cashless payments are innovations which are seen only in top notch transport systems and Mo Bus has these since its inception. Apart from the cash transactions, digital payments are also accepted and encouraged to make sure that accounting and auditing is proper.

Passenger Information Systems are predominantly seen in all the busses, which are Geo-Tagged and GPS Enabled to give precise and accurate information to users.

Apart from the services on the bus, Infrastructure facilities to bring in ease in the lives of commuters. Sufficient Cleanliness and sanitation around the BQS is ensured through routine maintenance and checks. Toilets have been constructed and landscaping and beautification of the area has been done. Apart from the Bus service, Mo Cycle is available near the bus stops and this can aid in last mile connectivity to the commuters who can take the cycles for reaching their end destination.

Near the Bus Que Shelters, Maps are shown which depict important landmarks in the vicinity of the BQS. This adds on to the value of that locality and also brings in ease to new travelers and tourists.

Apart from the transport services, Mo Bus and CRUT are taking active feedbacks from passengers at regular intervals and this in turn is helping in proper formulation of citizen friendly policies and services that benefit the masses.

There is a strong grievance redressal mechanism

For a city with a near Million Population , and for a Capital region with more than 1.7 million residents (shown in figure 1), Bus services and BRTS are best options as they emit low carbon, reduce space crunch, do reduce parking woes and are safer than private vehicles.



Figure: 1

Competitors-

Mo Bus is a wonderful service that is relentlessly being used for people of Capital Region. But, like any organization, it has its competitors too.

Autos and Private Buses, which have their regular services on all routes of the region are a major reason for distribution of passengers between them and the Mo Bus. Because most of the autos and private busses do not have a time set for their movement, they can be availed by people at any point of time at any locale.

Aggregators (Cab and Auto and Self Drive optionality) have also been competing aggressively to dominate the market in terms of trips and ridership. OLA, UBER, JUGNO, RAPIDO are major players in the aggregator domain who actively use social media and promotional strategies to attract people.

Growth –

Initially started in 2018, November, Mo bus started with 125 busses and limited terminals with working on 9 routes. But as of 2021, More than 250 busses ply on the roads and there are 27 active routes on which the services are available.

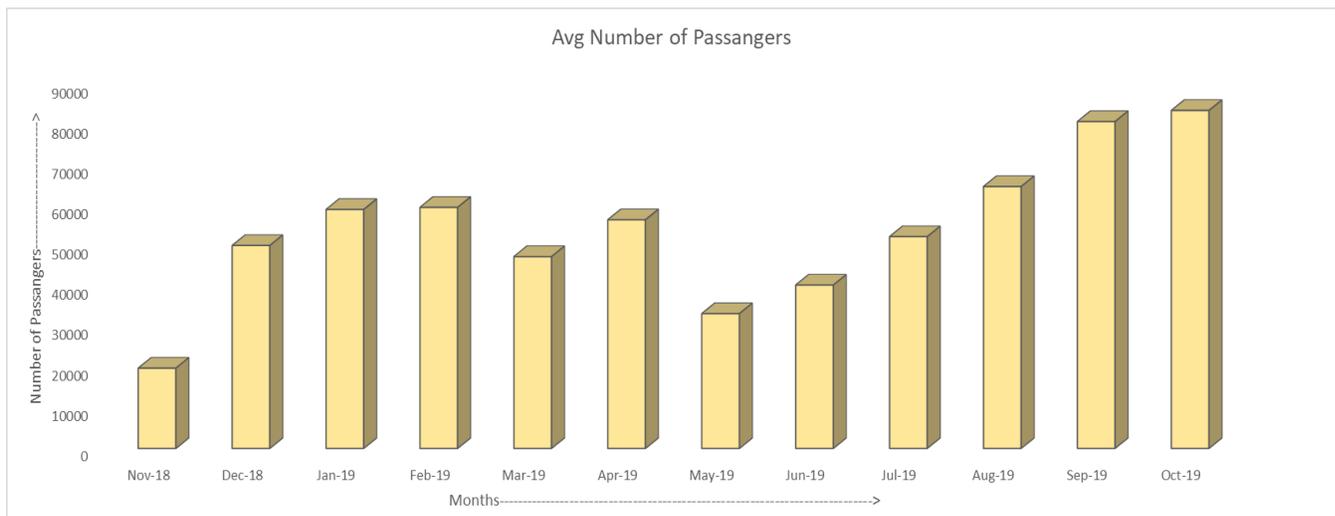
Tangible and Intangible Services-

Apart from the tangible services that are seen in the busses and the bus que shelters, there are a number of intangible services that are being rendered by the CRUT and Mo Bus.

Passenger information Systems ,Wi-Fi , CCTV on buses, Electronic and cashless payments , Passes for monthly travels, Real Time monitoring GPS enables app, Landscaping of Bus Que Shelters, Toilets, Integration with Multimodal transport Hubs and Locality Information area few features that are seen on the ground level.

But there are many features and services that are also rendered but work effectively behind the scene.

Attention to details of all amenities are easily felt. Seats in Busses and Bus Que Shelters are softer and wider, No vibration of glasses in busses, Acceleration and DE acceleration are almost seamless giving a near jerk free experience and proper behavior of the drivers and conductors are perfectly seen.



We can see changes in social and behavioral fabrics of the region. Soft Skill training is being provided to personnel to ensure that quality of services to passengers as well as in personal lives of the employees are improved. This has led to a lot of decrease in many socio-cultural taboos too. People are being more open to ideas, Dowry and misconceptions in society are being addressed easily and are being reduced. Domestic violence is on a decline and these welfare schemes of the authorities are empowering people at grassroots levels.

To bring more woman into the workforce, there is reservation for woman to join in and earn their livelihood in a dignified way.

Environmental Impact and focus on being a green initiative is given a priority by CRUT. Emission levels have reduced in the capital region and there has been more connectivity options for residents. Promotion of Digital payments has made the system more transparent.

Many infrastructural advancements have helmed by CRUT. CCTVs on traffic posts and at junctions and across the routes of the Busses have led to active utilization of technology. Real time monitoring of traffic, safety of residents against criminals, local conditions of an area, policing and violence control are offshoots of the utility benefits which these steps can get for the capital region residents.

Empty and Unused land parcels have been modernized and converted into Depots and maintenance areas which are creating regular jobs as well as helping in urbanization.

Revenue generation through advertisements and encouraging healthier lifestyle through walking and cycling is also taken care of.

Mo Bus Model is a self-sustainable which can be easily implemented and augmented in upcoming and developing cities .It can be emulated to ensure faster implementation of services across multiple regions.

Fringes of the capital Region which used to lack direct connection to the City Centre are now connected at affordable rates and are bringing a lot of ease to the commuter's woes.

Congestion in roads, Air and Sound Pollution reduction and more fresh air is clearly noticed as the busses have eased the traffic problems and snarls.

Many innovative social welfare schemes are being implemented seamlessly through the available infrastructure.

Sustainability is one of the primary areas where Mo Bus has been instrumental in bringing in a change. With daily ridership reaching 1 lakh plus in 2019 and average ridership being 85 thousand people per day, Mo Bus has been able to woo people to use public transport effectively and efficiently. Because of this, traffic jams have reduced and less vehicles are on roads. Carbon levels are less and this makes the city more livable. With CNG powered busses and Electric busses being added in the fleet, net emissions are going to be further reduce and in turn create a much better environment for residents.

Global Standards are in place in Mo bus as it has been created for Bhubaneswar Smart City in collaboration with German Bodies and Agencies who are pioneers of smart mobility solutions. Dedicated Modern Amenities and systems, GPS enabled real time location in app, CCTV for security in busses and best of facilities around Bus que Shelters are at par with global benchmarks and standards. Because of these facilities, the commuters are having the services of very high quality at lower process. Wi-Fi, best of seating arrangements, cashless transactions and Public Information Systems bring comfort to people.

Mo Bus is one of those IT enabled systems whose service map is heavily dependent on data that's being recorded through apps and commuter movements across the capital region. With usage of artificial intelligence, better route and sitting arrangement planning can be done. GPS enabled app which shows real time location of busses is a boon for people. CCTV in routes and Busses helps in security and monitoring purposes. Creation of more unified infrastructure is continuous because of this service map and this will help in delivering more services of highest standards to citizens.

Gender Equality and Woman Empowerment are key areas that show whether appropriate systems in place are serving their purpose or not. Mo Bus has made sure that these parameters are taken care off. With 30 % reservation for woman in posts of conductors and drivers, the environment inside the busses will be more conducive for girls and woman. Toll free numbers to report any instances of nuisance are present and sufficient training to improve soft skills are imparted to bring a holistic change for the woman employees. Also, people of the third gender are given opportunities to work for the organization and contribute meaningfully. Lower rungs of society are given incentives to use these services and elderly and disabled passengers are given special seats to ensure their comfortable travel.

Vocal for Local and Atmanirbhar Bharat Slogans for indigenous production and utility was also clearly seen in CRUT. Along with its superior services, Mo Bus acts as a promoter of Tourism as it reflects the soul of people in Odisha. Because of the calm and friendly nature of employees, visitors have a good impression for Odisha and its citizens and spread a good word about this. Public Information Systems can be used to describe about places of interest in the vicinity of the routes through which busses are plying. Propagation of more information of Odisha and its rich history of culture and heritage can be done. Bus Que Shelters and the App of Mo Bus should also promote places of importance having tourist potential to capitalize and capture tourist's attention. Social Media Propagation and Awareness programs can be done to get the most out of this. Local cuisines and ways can be preached and reenacted to give the commuters and tourists a feel of the rich Odia Culture.

Profitability-

Even though Mo Bus had a ridership of more than 1 lakh commuters a day, still there were losses which were because of a different set of reasons. There has been reduction in congestion, accidents, pollution and a number of other disadvantages. These have a cost too and this gets balanced by the losses pegged by Mo bus on a daily basis. Using a telescopic fare system with caps on upper limit of fare and using dynamic methods to reduce dead kms and saving fuel through efficient ways are techniques which can make this profitable. Advertising on the busses and designated areas of bus shelters can generate revenue for CRUT too.

Pandemic-

The world witnessed a major pandemic in the form of COVID-19 in the end of 2019 and this has been continuing till date. In these tough times, CRUT had stopped its services on the operationalized routes. After months of closure, CRUT started operations on selected routes and the financial burden was evident. However, CRUT made sure that best of services to meet expectations of people were taken care of and measures were in place.

There was compulsory sanitization of all busses at the end of every trip and in emergency situations, Mo Bus was also used for catering to patients calling on the number 104. Rules are mandated that without proper masking, commuters won't be allowed inside the Bus. Social Distancing measures were introduced and regular checking on the health of the fleet personnel was carried out.

References:

<http://urbanmobilityindia.in/Upload/Conference/2571dca6-610f-4778-a980-25041f17fd3f.pdf>
<https://www.capitalregiontransport.in/about/company-profile>
https://www.urban-industrial.in/hrdpmp/igep-uid/content/e15/e1536/e5085/e5146/e5147/CRUT_1.pdf
https://www.urban-industrial.in/hrdpmp/igep-uid/content/e15/e1536/e5085/e5146/e5149/CRUT_3.pdf
<https://odishabytes.com/know-mo-bus-schedule-in-bhubaneswar/amp/>
<https://www.capitalregiontransport.in/transit-services/mo-bus>
<https://ommcomnews.com/odisha-news/lockdown-extended-crut-suspends-mo-bus-service>
<https://orissadiary.com/mo-bus-city-bus-service-launched-bhubaneswar-odisha-cm-naveen-patnaik-goes-assembly-mo-bus/amp/>
<https://www.capitalregiontransport.in/news-updates-details/59>
<https://odishatv.in/news/miscellaneous/-mo-bus-comes-out-with-innovation-to-beat-lockdown-blues-47497>
<https://urbantransportnews.com/news/crut-celebrates-second-anniversary-of-mobus-unveils-bus-pathsala-and-mobus-card>

<https://indianexpress.com/article/india/mo-bus-how-a-city-bus-project-is-reducing-congestion-pollution-6135222/>
<https://ommcomnews.com/odisha-news/odisha-mobus-to-ply-on-eight-routes-in-bhubaneswar-from-sep-1>
<https://odishabytes.com/mo-bus-expensive-or-affordable/amp/>
<https://www.telegraphindia.com/odisha/mo-bus-service-links-bhubaneswar-fringes/cid/1675557>
<https://www.newindianexpress.com/states/odisha/2018/nov/05/mo-bus-service-to-cover-9-routes-in-first-phase-1894475.html>
https://www.urban-industrial.in/hrdpmp/igep-uid/content/e15/e1536/e5085/e5146/e5149/CRUT_3.pdf
https://www.urban-industrial.in/hrdpmp/igep-uid/content/e15/e1536/e5085/e5146/e5147/CRUT_1.pdf
urbanmobilityindia.in/Upload/Conference/c41f0c7b-c680-4b85-a34e-a3b5e1d307dc.pdf
urbanmobilityindia.in/Upload/Conference/2571dca6-610f-4778-a980-25041f17fd3f.pdf
<https://orissadiary.com/mo-bus-model-should-be-emulated-throughout-the-state-pratap-jena/amp/>
<https://www.capitalregiontransport.in/>
<https://www.mordorintelligence.com/industry-reports/analysis-of-transportation-industry-in-india>
<https://www.oecd.org/derec/adb/39066399.pdf>
<https://newcities.org/perspective-glimpses-into-the-indian-transport-industry/>
<https://www.intelligenttransport.com/transport-articles/21458/city-public-transportation-india/>
<https://www.itdp.in/what-we-do/public-transport/>
<https://www.champak.in/facts/general-knowledge-for-kids-public-transportation-india>
<https://www.orfonline.org/expert-speak/have-indian-cities-bid-farewell-bus-rapid-transit-system/>
https://www.technoarete.org/common_abstract/special_pdf/special_09458.pdf

eISSN:2997-2817