

**(UN)SUSTAINABLE URBAN DEVELOPMENT – THE NEED FOR A NEW
ORIENTATION (A CASE OF PUBLIC TRANSPORT)**

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ABSTRACT

Rapid urbanization gives rise to multiple issues, including primarily, transportation, congestion, housing, increase in slums, expansion of informal sector, inadequacy of basic amenities like safe drinking water, drainage, waste management, depletion of green coverage etc. The paper questions whether the current orientation towards the issues of urban planning and development can lead to sustainable outcomes in the true sense. The paper argues that ‘sustainable’ urban development is implausible because no matter what efforts are made by various stakeholders they would never be sufficient to overtake the pace of urbanization and the bulging of

cities at the peripheries. The paper articulates the case of public transport, particularly, the intra city transport to drive home the point. The paper questions the undiscerning application of disputable parameters to measure development, characterized by adoption of the so-called modern and advanced means of transportation. It throws open questions that remain conspicuously ignored and urges for a fresh orientation of the framework within which solutions are sought.

JEL Classification: O18, O20, Q01

Keywords—Urbanization, Public Transport, Sustainable development, Modes of transportation

INTRODUCTION

Like most developing countries caught amidst the urgency to develop quickly and a host of conflicting objectives to be achieved, India too finds itself in the same boat. Often such urgency results into seeking of solutions with fallacious orientation, ignoring simpler outlook. One of the issues that pose a great challenge, particularly for the developing countries is the rapid pace of urbanization which brings along with it a deluge of several other problems. India is no exception to it. As per the 2011 Census, the population of India was 1.21 billion which comprised 17.5 percent of the world population, second only to China. In contrast, India accounts for only 2.4 percent of the world land area. These facts need to be seen in light of other demographic features of the Indian population, viz., the rapid pace of urbanization and the age composition of the population. 50 percent of India's population is below 25 years of age and more than 65 percent is less than 35 years of age. These statistics are critical for their implications on the volume of economic activities and further urbanization given the link between the two and the resultant need for and pressure on urban amenities. Urban areas contribute approximately two-third of India's GDP.

As per the Census of 2011, 31.2 percent of the population of India lives in urban areas. According to World Bank data, nearly one-third of India's population lived in urban areas in the year 2015. The number of towns, urban agglomerations and out growths was recorded at 7935 as per Census 2011, which amounts to more

than 50 percent growth over the Census 2001 data. Further, cognizance needs to be taken of the fact that according to Census 2011, 43 percent of urban population resided in 53 odd urban agglomerations having one million or more population. There were 300 odd cities with a 100 thousand population during Census 2011. This reflects the concentration of urbanization in a few cities. This is further substantiated by the fact that successive censuses since 1951 onwards have recorded secular increase in the concentration of urbanization in the Class I cities. Further, as per the UN estimates, urbanization is expected to grow to 40 and 58 percent by 2030 and 2050, respectively,

Rapid urbanization gives rise to multiple issues, including primarily, transportation, congestion, housing, increase in slums, expansion of informal sectors, inadequacy of basic amenities like safe drinking water, drainage, waste management, depletion of green coverage etc. Apart from major government projects, various stakeholders such as NGOs and local government bodies working with various social groups are involved in doing their bit to make a difference. However, these efforts always lag behind and prove to be insufficient compared to the quantum of efforts actually required.

OBJECTIVES

Can the urban planning ever be sustainable in the true sense in the backdrop of continuous expansion of urban agglomerations with its associated issues? The paper argues that 'sustainable' urban development is implausible because no

matter what efforts are made by the government be it in the area of housing, provision of public utilities, transportation, etc., they would never be sufficient to overtake the pace of urbanization and the bulging of cities at the peripheries. The paper questions the undiscerning application of disputable parameters to measure progress, characterized by adoption of the so-called modern and advanced means. It throws open questions that remain conspicuously ignored and unaddressed to our own peril, bringing the situation to square one. The paper articulates the case of public transport, particularly, the intra city transport to drive home the point, even as the same thought process could be applied to many other issues raised by unbridled urbanization. The aim of this article is to bring home the realization of the futility of approaching the transportation problem invariably as a 'delayed' response to the compelling pressures of rapid urbanization. The attempt is to make stakeholders contemplate over whether a completely fresh line of thought could bring long lasting results. Accordingly, the objectives of the paper are as follows.

- To review the problems and solutions that are discussed in the literature on urban public transport
- To bring in focus and perspective the dilemma of urban public transport by reflecting upon the orientation with which the solutions are approached.
- To bring home the idea of the need for innovative thinking and out-of-the-box approach to development so as to achieve greater sustainability.

The following section undertakes the review of literature on public transportation followed by some reflections on the same. The subsequent section highlights the problems and challenges of urban transportation that calls for a revisit to the orientation with which solutions are sought.

REVIEW OF LITERATURE:

The literature on issues of urban transportation is replete with several studies across countries that offer alternative solutions to the worsening transportation problems. The common highlight of most studies is that urban transportation poses grave problem and is not easily amenable to solutions that are sustainable. While the alternative solutions are suggested by researchers, most of these have limited applicability and at best remain piecemeal approaches.

Pucher and Korattyswaroopam (2004) highlight the overburdened public transport system in India, in view of the rapid pace of urbanization. While they underline the urgency of the need to improve urban transportation, they sight lack of financial resources as the major limiting factor for the required investments in maintaining, leave alone upgrading existing transport facilities. They suggest private funding as the alternative solution. Dev and Yedla (2015) also consider private bus services as good alternative with the required level of regulation. According to the authors PPP mode would provide the necessary link to synergize financial resources with manpower and administration.

Goldman and Gorham (2006) highlight the policy inadequacies in advancing the notion of sustainable development to the urban transport system and suggest incorporating systems of human settlement and economic production in the effort to achieve the goal. A pertinent point made by the researchers is the absence of guarantee of success of major capital projects of transport and instead advocates low cost and incremental innovations. They suggest car sharing, auto free housing, transport intelligence systems, automated traffic enforcement system and the like, and the idea of livability to prevent “hyper-motorization that erodes the social and economic vitality of a city.”

Agarwal et al. (2010) suggest the Bus Rapid Transit System (BRTS) as the appropriate solution to the multidimensional problem of urban transport. While the authors present the salient features of BRTS they fail to address the issue of suitability and replicability of the system in most Indian cities. Chaudhari and Hajiani (2014) for instance, point out the wastage of precious urban transportation space on account of underutilization of the special transit routes created for the BRTS. They point out the increased congestion on the off special transit routes which accentuate the traffic hassles for the commuters, and suggest allowing other buses and cars to use the rapid transit route. However, this negates the very purpose for which the route is allocated to BRTS. It is ironical that such problems are not envisaged by policy makers before they embark upon systems like BRTS. Pojani (2011) cites lack of political will rather than technical

and financial reasons why the transport problems are not addressed at the sufficient level.

The UN Global Report on Human Settlements (2013), incorporating Planning and Design for Sustainable Urban Mobility makes an important point when it states that mobility in order to be sustainable needs to look beyond technicalities of increasing speed and also include demand oriented measures such as promoting walking and cycling. The report laments ‘the preoccupation with the means of mobility rather than its end – the realization of accessibility.’ It calls for a “paradigm shift in transport policy in terms of giving prominence to the aspect of accessibility, beyond transport and mobility.” Accessibility essentially involves aspects such as proximity, convenience, inclusiveness and affordability. Similar alternatives are suggested by Lee et. al. (2015) who state that the transportation problem can be addressed by adopting the principles of circular economy and by sourcing locally as far as possible in order to economize on the transportation costs. They consider that sustainable transportation rests on three pillars, namely, economic, social and environmental.

Vasudevan (2015) also underlines the significance of public buses as indispensable mode of transport in Indian cities. The author highlights that the advantage of bus transport lies in its flexibility to changes with lower investment and greater efficiency. She also advocates customer oriented innovative

responses to the challenges faced by bus transport system.

Hashem et. al. (2016) also highlight the problem of urban transportation on account of poor public transport facilities leading to greater dependence on private transport with the resultant problems of congestion, pollution, traffic jams, and longer time required to cover shorter distances too. The authors suggest that urban transport should be seen not in the context of sustainable urban development but rather in the context of sustainable environmental development. The paper highlights important aspects of public transport namely, accessibility, mobility, productivity, punctuality, and comfort of public transit. An important point made by the authors is that government needs to sacrifice on occupancy ratio and instead place greater stress on timeliness of services in order to create positive experience and reinforcement of inclination towards using public transport.

Thynell (2016) brings in another element of urgency of improving public transport lent by increased participation of women in the labour market and in the field of education. This is bound to add to the ownership of private vehicles in absence of sufficient public transport facilities. Bjorkelund, Degerud and Bere (2016) provide an interesting dimension of transportation that is, the significance of cycling and brisk-walking to work as “an opportunity to incorporate sustainable transport related moderate- to- vigorous physical activity (MVPA) into daily routine among adults, and thus, may make an important contribution to health.” This

facet is useful in the context of use of public transport which essentially involves walking up to the point of accessibility. This entails improving the facilities of walking or cycling up to the access points of public transport. This would create positive externalities. A holistic approach to solving of the transport problem would be to incorporate the idea of quality of life for the general public.

Krawiec et. al. (2016) while emphasizing on sustainable public transport system in the transport policy of the European Union advocate gradual replacement of conventional vehicles by electric buses along with addressing the technological, economic, organizational and ecological issues involved. In this context it may be said that underdeveloped countries which are quickly urbanizing can divert efforts in this direction, that is, employ electric buses so as to achieve several objectives simultaneously. Needless to say, such solutions have potentially wider benefits which supersede the limited benefits of other alternatives like bullet trains.

Ircham et. al. (2016) talk about the regulation of the Ministry of Transportation of Indonesia that states that the type of public transport, particularly the urban mass transit, should be linked with the size of the population. This is a highly flawed approach for the fact that the size of population is highly dynamic and would not serve the purpose of criteria to decide the type of public transport that suits the best. While the authors have identified several factors that determine the choice of rail-based mass transit for a city, it is a very static approach to solve the

problem of public transport and addresses the issue only to a limited extent.

Kumar et.al. (2016) discuss the informal public transport systems in Indian cities. They assert that the utilities of these modes of transport include frequency, convenience, flexibility and affordability, which can be examined in relation to the government provision of formal public transportation. This is important in the context of understanding the services that consumers look for in a mode of transportation.

Walker and Marchau (2017) while highlighting the typical problems of urban mobility and congestion, focus on automated taxis as a solution to one aspect of the problem of transportation, namely, accidents due to congestion and errant drivers. They propose an adaptive approach towards implementation of the new system, viz., automated taxis which entails taking some immediate actions and at the same time creating an outline for actions to be taken in the future. While automated taxis may not provide formidable solution to the transportation problem particularly in the populated developing countries, the adaptive approach suggested has useful implications for the kind of approach required for creating sustainable urban transport.

The 2017 Report of Urban Development & Urban Housing Department of the Government of Gujarat on the BRTS of four cities of Gujarat, namely, Ahmedabad, Surat, Rajkot and Vadodara clearly brings out the slow progress in the system leading to gross ineffectiveness in

solving the problem of inter-city public transport.

REFLECTIONS ON THE LITERATURE

The transport sector is a particularly difficult area to comprehensively incorporate the goals of Sustainable Development. This is substantiated by the fact that even in the most transport efficient cities in the world increasing rate of motorization continues to exist (Goldman and Gorham, 2006). The research work in the area of public transport is largely in the context of growing size of cities due to population, urbanization and economic growth. This reflects a mindset of approaching the urban transportation issue only as a response to a problem which ironically is difficult to solve in a truly sustainable manner. Issues are addressed only after they have become glaringly difficult, leaving little scope for solutions to truly permeate the systems, practices and norms. Even as the research works analyse the public transportation problems and solutions, they are highly limited in their application or in the context of the particular aspect or mode of transportation that is examined.

None of the studies address the transportation issue in its totality or with a proactive approach that can provide a conclusive outcome. This is evident also from the fact that while most research works acknowledge the problems, they are specific to the mode examined so that the solutions offered remain confined to those that are conceivable only from a static view of the entire situation at hand. Most

problems of public transport are seen in isolation and this betrays the tendency to look right through issues because they are difficult to sort out. For instance, studies do recognize that demand for low cost public transport is bound to be high in underdeveloped countries (Pucher and Korattyswaroopam, 2004) and yet they do not go beyond the usual suggestion of private funding as a solution. While Goldman and Gorham (2006) make a pertinent point that major capital projects of transport do not guarantee success and they do advocate low cost and incremental innovations like car sharing, auto free housing, transport intelligence systems, automated traffic enforcement system, etc., these are difficult to implement in practice once the public is largely accustomed to using private transportation, and at best create limited impact.

While studies analyse the significance of modern capital based high speed transport means, none address the question of lack of replicability of such projects. Studies also cite the unsuitability of advanced technologies of the developed countries but do not offer any alternative for the same. A trace of appropriate outlook is found in the assertion that government needs to sacrifice on occupancy ratio of buses and instead place greater stress on timeliness of services in order to create positive experience (Hashem et. al., 2016). However the researchers stop short of suggesting any conclusive action in this regard or how it would work out in practice. This betrays the lack of conviction in what is being asserted. Interestingly, one study emphasises on 'adaptive approach' towards successfully

creating sustainable urban transport, although in context of use of automated taxis (Walker and Marchau, 2017). This is particularly relevant in the context of what the present paper purports to put forth – an adaptive approach towards using public transport in lieu of private transport. Adaptivity is what will work in encouraging and reinforcing the inclination towards using public transport.

The common undercurrent left unmistakably plain in the literature is the irony that sustainable urban development, particularly in the context of public transport, is a difficult task to accomplish, especially, given the pace, concentration and haphazard nature of urbanization. Even more glaring is the lack of conviction for any comprehensive solution as is evident in that the solutions offered are disconnected and incoherent with common practices long instituted in the habits of the public. The paper attempts to bring this dilemma in focus and perspective in the following discussion.

CHALLENGES OF PUBLIC TRANSPORT

Urbanization is posing a grave problem for all stakeholders. Several discussions, discourses, efforts and resources are dedicated to seek solutions to the problems, especially with the so-called stress on sustainability. However, the paradox is that with the constant morphological changes that are cities undergo, urban public transport development can hardly be sustainable. Piecemeal solutions only extend the problems across generations rather than

make any attempt to break the vicious cycle.

Policymakers appear to consider high speed transport systems among the formidable solutions to the urban public transport. However, advanced technologies available in developed countries are most often unaffordable (Pucher and Korattyswaroopam, 2004) or at best afford replication only in select metropolitan cities with typical delays in completion and cost overruns. Modernization of public transport like underground metro trains, or systems like bus rapid transit systems only accentuate the spatial scarcity in overcrowded cities as they compete for special transit corridors and routes. They bring along the associated issues of land acquisition and therefore relocation of displaced habitats and business. It leads to displacement of those living in squatter settlements and forces them to re-locate at the peripheries. It also entails long pending issues of litigations and rehabilitation. Since the population settled in squatter settlements typically provide a source of cheap labour for most of the informal sector, it leaves the transport need unresolved for the poor masses as they are required to travel even greater distances for jobs.

BTRS, metro rails and High Speed Rail (HSR) projects take several years to complete and fail to solve the problem effectively, leave alone sustainability. In fact, it accentuates the concentration of urban population in such areas, driven by increase in economic activities around the area as businesses seek to capitalize on the improved connectivity. To bring the issue

in perspective one may consider the projected cost of the Ahmedabad-Mumbai high speed rail project of India which is estimated to be INR1,100,000 millions, almost equal to total capital outlay of Indian railways in 2017, for a route which is less than 500 kilometres. Add to that the issue of break even volume of passenger traffic required. It does not serve the purpose of transport facility that is 'affordable for all.' It does not address the need for intra-city public transportation required to provide easy and quick access to the public to use the HSR. The Ahmedabad BRTS which aimed at constructing 150 km of special transit route at the cost of INR 5000 millions had a gestation period of four years. Till 2015 it could achieve a system length of only 89 km, notwithstanding that it requires widening of the existing roads and removal of encroachments and resettlement. Compared to the monetary and real costs involved in modern means of public transportation, the cost of bus manufacturing ranges anything between INR 3 to 30 million depending on the seating capacity and technologies used.

Underground transport systems bring along the baggage of environmental harm as it disrupts the topography of the area. It is common knowledge that indiscreet construction of highways, with high value on the economics of growth-effects rather than environmental sustainability are among the major causes of flooding and harm to agrarian land due to land disturbing actions, notwithstanding feasibility studies and environmental clearances. Increased vehicular congestion is sought to be resolved by construction of

more and more fly-overs and road widening. This entails lowering of the green coverage in cities with the consequent problems of further environmental degradation. While the measures seek to accelerate the rates of economic growth in the medium term they tend to cause sustainability issues in the long run sense, defeating the very purpose of development.

THE NEED FOR A FRESH ORIENTATION

The focus on the contemporaneity of the means to achieve the ends rather than on the wisdom that lies in conventional but effective means is perhaps the greatest curse of modern development. Policy makers need to rise above the urge to modernize for sake of modernity. Solutions for the sake of visibility of the measures adopted are uncalled for. The misconception that progress can be achieved by adoption of methodologies of the developed nations betrays the lack of understanding on part of policy makers, or at worst, wilful disregard of the ill effects for quicker visible impacts. Developing countries should refrain from following the path of modernity which advanced countries achieved by leaving the maximum carbon footprints. Development should not be meant to be competitive. It should rather suit local conditions.

This paper contends the enormous volume of funds that are allocated to undertake modern means of improving urban public transport system while neglecting the possibilities of improving the condition of existing services which are already in

place. Researchers and policy makers need to reorient themselves so as to ideate out-of-the-box solutions to the public transport issues. If governments can allocate huge sums of money for projects like metro rails and bullet trains, which are difficult to replicate in all metro-cities, why can not the intra-city public transport systems be revived by allocation of sufficient funds. Should not the government adopt solutions that lie at arm's length rather than focussing on costly advanced means of transportation? Wouldn't it bring better and more far reaching localized benefits to revive intra city public transport system by spending the same or even lesser volume of funds?

Benefits of efficient public transport system include lowering of urban congestion, smooth flow of traffic, lowering of noise and air pollution, saving of time and money, improvement in liveability, and so on. Keeping these in mind, sustainability in the true sense of the word necessitates that simple solutions are analysed on parameters beyond economic viability such operational costs, revenue generation, poor market share vis-a-vis alternative means of transport, and the like. Comparing the disadvantageous position of public transport with the low operating costs of private bus services is tantamount to ignoring the base realities, leading to seeking solutions in the wrong directions.

The distrust on public transport stems from poor services which include insufficient frequency of buses on various routes, insufficient fleet of buses, irregularity of time schedules to name a few. It would take huge leap of concerted efforts by the

means of simultaneous and substantial improvement on all these counts to convince the general public to shift to public transport. A multipronged approach adopted in a pro-active manner is the only solution. The challenge is divert commuters to public modes of transport. Only when the bus services improve, encompassing all dimensions of requirements, will the general public find economic rationale in shifting from private transportation.

The shift to public transport can be brought about by suitable policies that discourage use of private vehicles. Delhi experimented with the application of the scheme of odd-even numbered vehicles on different days with the aim of reducing congestion and pollution. Rules on similar lines can be envisaged to divert public choice towards use of public transport. For instance, use of private vehicle can be curbed in the inner city areas which are highly congested and routes be demarcated solely for city buses. A day in a week or a fortnight can be earmarked when selective ban (with relevant exceptions) on personal vehicles can be imposed, with appropriate penalties. Implementation of such rules and scaling them up gradually can initiate the shift towards public transport. This is where the adaptive approach plays the role. The odd-even like road rationing schemes have been experimented at various cities around the world such as Athens (1982), Santiago, Chile (1986 and extended 2001), Mexico City (1989), Manila (1995), Sao Paulo (1997), La Paz, Bolivia (2003), San Jose, Costa Rica (2005), Honduras (2008), and Quito, Ecuador (2010).

A case in point is the decision of the Land Transport Authority of Singapore to disallow any growth in its car population effective from February 2018. This drastic decision is taken in the context of the spatial scarcity of its cities and the huge amount of investments made in the planned public transport, including \$4 billion in subsidies to bus contracting over the next five years.

Before implementation of such schemes it is of utmost importance to put economic viability at the back burner in the initial stages while ensuring sufficient fleet of buses on all routes to infuse public conviction for the use of public transport. This can be achieved through redesigning and scaling up of the networks and routes of buses, integrating technology for better passenger information systems and facilitating e-payments. The buses should be made with improved style and elements of comfort so that even those with higher incomes take pride in commuting through public transport. Cognizance should be taken of the fact that the true mark of progress of a country lies in an efficient and vibrant public transport system and not in the number of private vehicles owned by its population. An element of competition among private bus operators may be introduced so as to incentivize them to provide competitive services. Improved bus service is the only option to tackle the issues of urban congestion and more importantly to make use of public transport the norm rather than the last choice. In absence of such concerted efforts on all fronts it is nearly impossible to bring such a huge change in public preference.

Adoption of modern means of transportation should factor in the reality of Indian sensibilities even as efforts for change in attitude should continue. For instance, pathways for pedestrians and cyclists will not achieve much with the kind of quality of Indian roads, encroachment on roads by hawkers, nuisance of stray cattle, the general lack of civic sense and non-adherence to traffic rules. A glaring analogy can be drawn to the fact that placement of garbage containers at strategic places to discourage people from littering has met with limited success due to the menace of stray cattle and dogs. Concerted efforts are then required to educate the general public and imbibe the culture of valuing public property along with strict vigilance and penalties for violation. There is evidence of the public adhering to rules when the office bearers are visionary and adopt a no-nonsense attitude in the implementation of rules.

Innovative approach is the only alternative for long term solutions. The orientation to the problem needs to be one of adopting the concept of Sustainable Development not as an end to itself but rather as a pathway that incorporates sustainability in all aspects of public life (Goldman and Gorham, 2006). With this aim in view, the paper questions the very framework within which solutions are sought. Since urban planning is unable to keep up with the influx of population from rural areas and the urban growth, we need to ask if urbanization should be encouraged. Why can't the focus be shifted to smaller cities and semi-urban areas? Why can't a futurist approach be adopted in the smaller cities

so that planned development with the correct orientation can be realized sans the displacement costs involved in highly urbanized areas? Smaller towns can be modelled into planned cities as they afford greater scope to address the 'urban issues' in a more systematic and holistic manner, showing the way to bigger cities. The primary purpose is to introduce the use of public transport from the early stages of development so that it becomes the norm rather than an exception. Through policy intervention government can channelize productive activities for employment generation to smaller cities developing public transport in tandem to make them economically viable. Selected towns in each state can be adopted to implement this kind of approach which can then be extended to other towns as outcomes become visible. Such an orientation to the public transport may bring better and long standing solutions in a holistic manner.

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