

Adaptability of Public Transport Models in Urban India

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Abstract

Public transports, especially buses not only form a medium of public mobility, but also acquire a significant place in building the economic infrastructure of cities. Urban transport segment in India has identified the criticality of participation of private operators in working city bus operations. Since 2005 the urban city bus benefits in India are shared by both public driven State Transport Undertakings and Private Bus Operators. This paper discusses about the patterns of vehicular development and accessibility of transport foundation in Indian urban regions. As opposed to covering each part of urban transportation, the paper principally stresses on the vital elements, and the two contractual models for example, Gross Cost Contract (GCC) and Net Cost Contract (NCC) that are being executed in different urban communities in India. Furthermore, this paper features a few deficiencies of NCC and GCC and suggests criterions that could make them increasingly beneficial in the upcoming period.

Keywords: Urban transport, Public-Private Partnership, Gross Cost Contract, Net Cost Contract, Private bus operator.

Introduction

The urban communities and towns establish a magisterial attribute in advancing monetary development and economic success. Albeit, not more than 33% of India's population lives in towns and urban

areas. Consistently, these regions create more than 2/3rd of the nation's financial profits and record for 90 percent of government income. Considering this, the urban population has arisen from 17 percent

in 1991 (112 million) to 31.8 percent in 2011 (377 million) and is believed to be increased up to 35 percent (500 million) round in next 10 years (i.e. year 2021). However, since the rural to urban relocation is continual, the Indian urban administration are facing various difficulties. Moreover, there is a current shortage in urban managements - concerning lodging and urban transportations regarding both amount and quality; and then again there is inward pressure of expansion and disposal of services to defy developing engagement from transmigrating public.

These unstable circumstances grew due to the fact that general public transportation, which should have assumed an exceptionally instrumental job in moving individuals in urban communities, was not existent in numerous urban areas or was unfit (both functionally and fiscally)[1]. Therefore, considering these circumstances, the National Urban Transport Policy was confined in 2006 with an accentuation on making urban areas most thriving and empowering them to wind up as "engines of economic growth". As a consequence of financial progression, the Indian government has urged an approach to advance private involvement in the arrangement of transport foundations.

As an outcome of this arrangement, private area involvement has additionally been advanced in improving the nature of urban foundation too. The advantages of a proficient urban transportation are self-evident (Figure 1). It eases spacious motion of individuals at less expenses and helps in decreasing the urban traffic burden as well as lessening pollution and crowd. Thus, it has a great deal of prospering benefits for the urban inhabitants[2].

Therefore, considering the requirement for effective methods to impart an urban transport policy to every part, the Indian government has decided to include private virtues and endeavor in arrangement of an assortment of public transport system to consistently expanding urban populace. Consequently, Public-Private Partnerships (PPPs) are progressively used to give urban transport administrations. In light of the facts that Urban Local Body (ULB) faces recurrent issues, for example, to regulate gainful inefficiencies, limit deficiencies, monetary constraints, etc. and consequently pursued the PPPs as a remedy for prospering issues of urban transport. Most of last two decades has observed numerous PPPs in Indian urban transport systems. Preferably, such public administration and arrangements are the result of government

duty. Nonetheless, because of limitation of resources and requirement for productivity, PPPs have risen as favored method of giving such open administrations in developing countries like India. Privatization results in perpetual exchange of responsibility to the private contractors prompting its imposing business model subsequently[3]. PPP is viewed as a

superior instrument as the proprietorship rights remain mutually with government and private players and task are controlled generously so the general public everywhere isn't presented to the issues that emerge out of damaging syndication in framework. PPPs in city transport are either in the Gross Cost Contract (GCC) or Net Cost Contract (NCC) shapes.



Figure 1PPP advantages

In India, greater part of the Urban Local Bodies (ULBs) favour NCC as it alleviates ULBs from any remuneration to the transport or bus authorities. Despite what might be expected, the administrators paid ULBs the yearly premium for the rights earned to run the transport tasks. Nonetheless, the supportability of NCCs began to be addressed when the benefits of the transport administrations was not attainable and took course changes and

administration quality was at risk. This introduced GCC, wherein the ULBs paid the transport administrator on per kilometre premise and consequently the urban authorities bearing the income risks[4].

Over 50 years (1950-2000) of the 20th century, one has experienced the voyage of private players in city bus services (CBS) in a recurring manner (Laghu and Gaurav kumar, 2011). Furthermore, from the earliest start of the 21st century, Public

Private Partnerships (PPPs) came into picture in Indian CBS[5]. PPPs in city transport administrations come to fruition either in Gross Cost Contract (GCC) or Net Cost Contract (NCC) and India has the nearness of both the PPP models. The endeavours to rope in private players were being done since decades however have not procured any considerable outcomes. In the second 50% of the twentieth century, it has been noticeable that post "nationalization" arrangement, the legislature permitted private interest out of impulse as the administration was coming up short on assets to take into account expanding traveler request through armada procurement. Consequently, the private support discovered its way in giving transport benefits through diversifying models (particularly the Net Cost Contract) wherein the income hazard and cost dangers were to be borne by the private players. Every one of the endeavors made in the enlistment of private segments, be it the NCC or GCC variations, couldn't continue[6].

- Why Contracting
- Prerequisites for Contracting
- Single vs. Multiple Operators
- Alternative Contracting Schemes
- Choosing the Best Option

- Choosing the Best Option

Problem Statement

City proficiency to a great extent relies on the adequacy of its vehicle frameworks, that is, viability with which individuals and merchandise are moved all through the city. Poor transport frameworks smother monetary development and advancement, and the net impact might be lost intensity in both residential just as universal markets. Albeit, Indian urban communities have lower vehicle possession rate than their partners in created nations, they experience the ill effects of more terrible clog, postponement, contamination, and mishaps than the urban communities in the established nations[7].

The Indian metropolitan urban communities are confronting genuine ecological issues because of developing air contamination brought about by propellants utilized in vehicles. Barometrical contaminations usually connected with engine vehicles are suspended particulate matters (SPM), carbon monoxide, sulphur oxides, nitrogen oxides, and hydrocarbons. Contaminations from vehicular emanation have different unfriendly impacts on our health [8]. One of the fundamental contaminations, SPM especially fine PM, has genuine impacts on

the human health. The encompassing air contamination as far as SPM in numerous metropolitan urban areas in India surpasses the farthest point set by World Health Organization [9]. In this manner, pervasive traffic blockage in Indian urban areas especially amid pinnacle hour expands the postponement as well as builds the contamination level. It is sufficiently certain that among different methods of street-based transport mobility, the bus involves less street space and causes less contamination per km than customized modes. This additionally demonstrates the significance of bus in enhancing the air quality in urban territories[10].

All classes of passengers' face issues in commuting. Basic issues confronted are long waits, time and travel uncertainties, troublesome journeying, absence of safe and deterrent routes. Additionally, moderate moving traffic causing jams at traffic signs and street intersections, makes anxiety prompting street rage, rash driving and mishaps. The nothing new (BAU) situation gives some disturbing insights for the urban transport area. The BAU situation anticipated from 2007 to 2030 would prompt (a) offer of public travels will move southward from 5-46% to 2-26%, (b) increment in per capita excursion rate for all

modes from 0.8-1.5 to 1-2, and (c) expected normal travel velocities on significant passages in future will commence down from 26-17 km/h to 8-6 km/h. Such unstable circumstance has been on the grounds that the general transport, which in a perfect world ought to have assumed exceptionally instrumental job in moving individuals in urban communities, was not existing in numerous urban areas or was in a bad way (both functionally and economically). In light of these circumstances, the National Urban Transport Policy was established in 2006 with an accentuation on making urban communities most liveable on the planet and empowers them to end up as "engines of economic growth".

Transportation Initiative in India

The transport innovation started in India formerly a few years ago. Because the demand of travel is high, since, we have a huge migrant population which belongs to rural areas, now residing in cities. Unless these two fields-Transport and land development-are seen in tandem, we cannot have a synchronous development like what has been happening till now.

Few of the Indian Government's undertaking under MoUD are:

1. JnNURM- Jawaharlal Nehru National Urban Renewal Mission- Sector Reforms Linked Investments – Bus, Rail and Related Infrastructures
2. Human Resources and Capacity Enhancements
3. National Urban Transport Policies
4. World bank – UNDP – GEF Sustainable Urban transport Project (SUTP)

The Govt. of India has started schemes such as FAME (Faster Adoption and Manufacturing of (Hybrid and) Electric Vehicles in India (2015-2018) - which has been extended till March 2019. The GoI is encouraging use and production of Electric Vehicles to reduce pollution in metropolitan cities which is reaching staggering limits[11]. It is thought provoking that 14 out of world's 15 most polluted cities are in India in the WHO's list, whilst 4 other cities are from Uttar Pradesh, Kanpur tops the list. So, India really need to look into this issue of pollution in its cities, which are brimming with population as well. The Electric buses are a good initiative in this direction[12].

JnNURM (Jawaharlal Nehru National Urban Renewal Mission) is a substantial scaled, urban-improvement plan propelled by the Indian Government, under the Ministry of Urban Development (MoUD). JnNURM gave financing to urban restoration policies, including subsidizing for transport. Before JnNURM, most STUs possessed and worked as a maturing armada without considering the PPP models. Post JnNURM, in various city-extents, Special Purpose Vehicles (SPVs) were framed and since then an expanding number of urban areas have received PPP modes.

In all types of vehicles in the country, there is a growth of 22% every year and for that we need one National Highway every year. The point is that public transport system in India has not been given a serious thought while it is most needed due to high migrant population in Indian cities travelling to and from home to workplace. Since 22% population in India is below poverty line and 50% of that is in urban areas, it need a low-cost public transport for Indian cities[13].

Table 1. Pollution rate of private and public vehicles

Type of vehicle	Average passenger per vehicle	Pollution load in gm/pass.-km	Congestion effect in PCU/Pass.
Two-stroke two-wheeler petrol engine	2	7.13	0.375
Four-stroke two-wheeler petrol engine	2	4.76	0.375
Car with catalytic converter petrol engine	4	0.93	0.25
Bus with diesel engine	40	1.00	0.075

Source: Singh (2008).

Note: PCU = Passenger Car Unit where 1 car = 1 PCU, 1 bus = 2.5 PCU, 1 scooter = 0.75 PCU, etc.

In total privatization of public transport, the ownership of assets is permanently transferred to private sector while in GCC or NCC mode of Public Private Partnership (PPP) Models, it is jointly owned by the Govt. and private partner (Chaudhary, 2015). The PPP models prevent abuse of monopoly by private players and the public is not exposed to perils of that monopoly while better efficiency of private sector is utilised in providing better services. Within a GCC framework, the governmental experts expect the income perils and gives a settled premium to the private authority at times for their services, while in the NCC mode, the government contributes for the foundation and the private administrator holds activities, upkeeps and income accumulation efforts, holds enactment box income, and bears the income threats in catering the transportation assistance[14].

Though, a couple of years back, transport administrations were accessible for the most part in the urban communities situated in

southern and western areas of India, however they are currently accessible in the greater part of the metropolitan urban communities, on account of the Indian Government's JnNURM mission. Administrations are generally operated by the publicly acclaimed Municipal Transport Undertakings (MTUs) or State Transport Undertakings (STUs). The vast majority of the traveler transports utilize the standard truck motor and skeleton and thus are not efficient for city use. There are not many transports in India explicitly intended for urban conditions. Subjectively, the accessible urban mass transport administrations are stuffed, questionable, and include long holding up periods. Congestion in people in general transport framework is increasingly articulated in extensive urban areas where transports that are intended to convey 40-50 travelers, convey two-fold the limit amid pinnacle time periods. Therefore, there is a huge move towards customized transport,

specifically bikes and expansion of different sorts of transport modes, for example, taxicabs, rickshaws and autos[15].

UP State Road Transport Corporation

UP State Road Transport Corporation (UPSRTC) is a public division of roadways transport organization, giving active services in the Uttar Pradesh territory and other neighbouring states of North India. Recruited size of more than 11833 fleets,

the transportation system that work over 655.8 Million kilometers taking into account the mobility needs of 500 Million plus individuals and gaining over Rs. 79.2 Million regularly. Arranging satisfactory, effective, well-coordinated, agreeable and affordable administrations to the travelers, while procuring enough for self-support and developments. Where, Uttar Pradesh has the 2nd largest road network in the country after Maharashtra (figure 2).

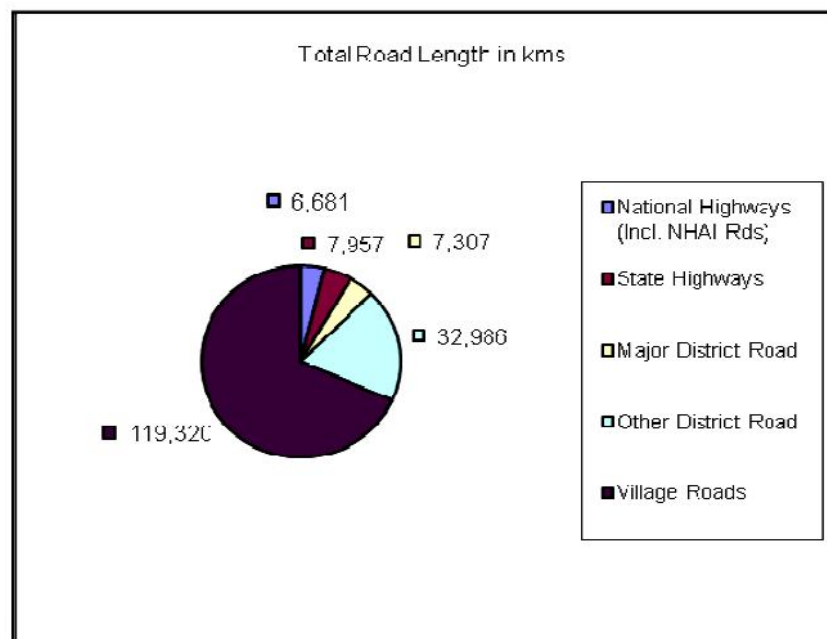


Figure 2.State road length

Criterion to enhance the urban transport in India

Encouraging local economies and consolidated town-ships

It hailed for a demand to encourage not just local economies so that it decreases the

requirement for distant travels, yet, in addition capable independent smaller townships that would lessen the requirement for short travels inside the city limits. The advancement of local economies ought to be supplemented by making smaller settlement structures with the arrangement of shopping

complex, administrations and recreational offices and work openings closer to the individual residencies, so the outing travel distances can be kept short. As such, wherever conceivable, "towns of short distances" ought to be advanced (Singh, 2006). There are numerous advantages of the minimized township over urban spreads, which incorporate less vehicle and bike reliance in this way lower emanations, diminished power utilization, better open transport administrations, better openness, less car crashes, and better personal satisfaction.

Focusing on public transport particularly bus transport

The traveler journeys in India urban areas depends vigorously on the streets and roads. The Government's discretion and control have exacerbated the poor operational and monetary execution of public possessed urban transport agencies, which are the primary supplier of transport benefits in urban areas of India . As expense of activity rises, transport framework goes under budgetary strain to raise admissions, yet lawmakers are feeling the squeeze to keep charges at existing dimensions. Except if the framework is financed, it needs to take out a portion of its less productive or misfortune making administrations. In majority rule

government, legislators will undoubtedly respect weight from those whose administrations are undermined and to demand keeping up cash losing activities. Because of this, vehicle traders think that it's hard to raise their income sufficiently adequate to meet the expense of activity. With couple of exemptions, freely claimed urban transport agencies in India work at higher unit costs than practically identical transport tasks constrained by the private divisions.

Need of the Hour, Public-Private Collaborations

With the economical advances, the Indian Government has conceived a strategy to advance involvement of private authorities in arrangement of transport framework. As a result of this approach, private segment cooperation has been promoted likewise in enhancing nature of urban foundations. The advantages of a productive private indulgence in urban transport are self-evident. Additionally, it encourages helpful development of individuals at low expenses and renders urban areas with reduced pollution and traffic congestions. Henceforth, it offers a great deal of welfare benefits for the denizen. Figure 3 shows the growth of private participation in the public transport sector.

In spite of fare similarities, private administrators have possessed the capacity to succeed monetarily with no endowments. Their prosperity is credited to abnormal state of efficiency, which is reflected in low-staff proportions to accessibility of higher fleets. Private transport administrators, capturing around 2/3rd of the total transport industry, presume a noteworthy job in satisfying the needs and consequently generously decreasing the money related thresholds on the governments. Moreover, the government possessed urban transport

regularities do not have the adaptability of association, the capacity to contract and fire staff, or the money related prudence expected to adjust to evolving conditions. In such conditions, an approach which involves private co-operation in the arrangement of transport administrations ought to be invited. One should take note of that there is a critical requirement for rebuilding of open transport framework in Indian urban communities to upgrade both amounts just as nature of administrations.

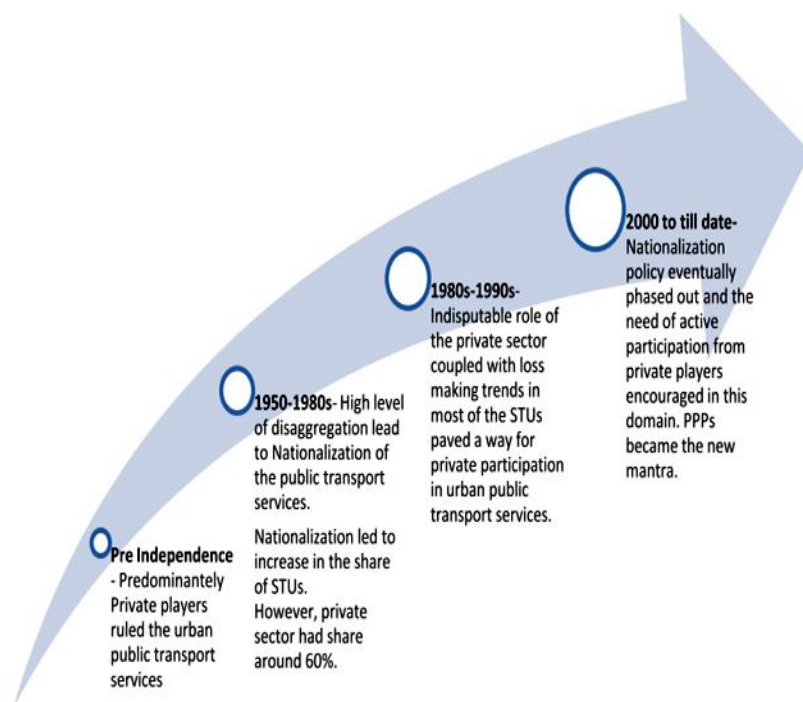


Figure 3. Growth of Private Sector in Passenger Transport Services

However, from the beginning of the 21st century Public-Private Partnerships (PPPs) came into picture in Indian city bus services.

PPPs in city bus services take shape either in Net Cost Contract (NCC) or Gross Cost

Contract (GCC) and India has the presence of both the PPP models.

Public Private Partnerships (PPP)

Post 1992, that means after implementation of liberalization policy, private companies have been encouraged to participate with the government endeavors. This resulted into Public private partnership. One can find the example in the transport services where the model have been successfully implemented wherein the risk related to revenue and cost became the matter of the private players [16].

PPP is “a long-term contract between a private party and a government agency for

providing a public asset or service, in which the private party bears significant risk and management responsibility”[17]. Figure 4 represents a simplified PPP model.

The success of PPPs relies on its fulfilment of both the ‘welfare’ and ‘profit maximization’ objectives of both the parties and if any one of them suffers the PPPs could not be sustainable [18]. In total privatization of public transport, the ownership of assets is permanently transferred to private sector while in GCC or NCC mode of Public Private Partnership Models, it is jointly owned by the govt and private partner[19].

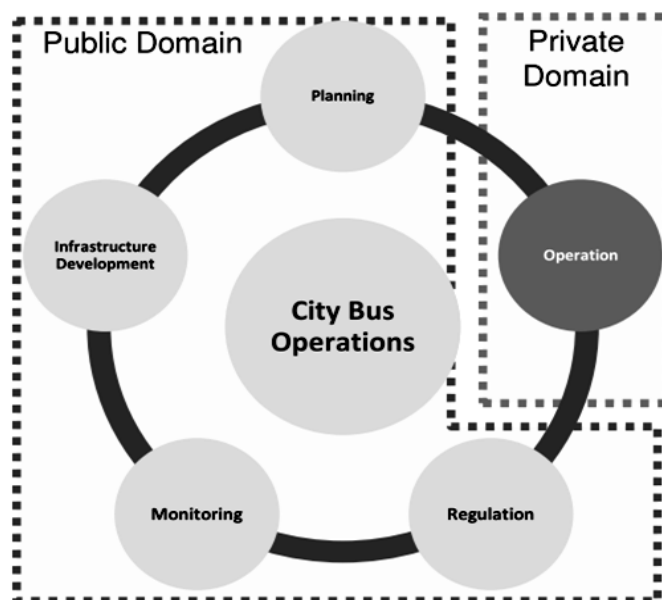


Figure 4.PPP model

Gross Cost Contract in City Bus Services

The PPP’s contract based binding structure wherein the city transport tasks and upkeep

are completed by the private segment (private bus administrator) and the defrayals are made as per transport kilometres, per bus, per operational hour or blend of each or any two. In such a model, the income perils (for example money accumulation and maintenance) lies with the ULB/SPV (for example government or the organization set up to run city transport administrations). Contrary, the dispatch and booking are additionally the obligation of the ULB/SPV and the administrator is obliged to run the transports according to the rules given by the SPVs. By and large received by huge urban communities (metropolitan urban areas or city enterprises) who either has sound monetary wellbeing or has the ability to raise funds from the market.

Urban communities like Ahmedabad (BRTS and AMTS transport administrations), Delhi (DIMTS transport administrations), Surat (BRTS transport administrations), and so forth keep running on GCC premise. In Surat and Ahmedabad, the defrayments to bus administrator is based on kilometers covered by the bus. While, in the event of DIMTS transport benefits in Delhi, the defrayments made to the private bus administrator is on the bases of blend of kilometers covered by the bus, quantity of buses and count of operational hours. Although, in every one of the cases the income danger is vested on the office outsourcing the contract venture and not on the private bus operators[20].

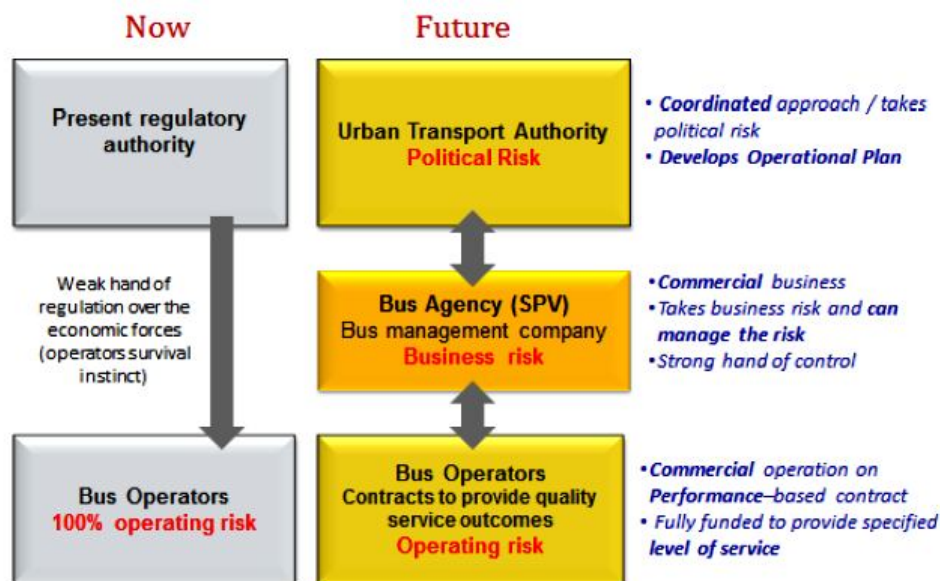


Figure 5. Risk assignment in shared model

To the extent Surat and Delhi are concerned, these urban communities prior had NCC frameworks. Nonetheless, NCC establishment ended up being a disappointment because of the issue of money related concerns and thus, deterioration of operation and quality. This constrained the city specialists to take the GCC courses. To the extent GCC is concerned, in spite of the fact that the SPVs make money related losses, the framework still runs proficiently, reliably and with unwavering qualities. For example, despite the fact that the Ahmedabad Janmarg Limited (Ahmedabad BRTS) enlisted a working loss of Rs. 1.34 crore as on 31st March 2012 it very well may be seen that the framework is developing significantly as far as its ability in sub-urbanites conveyed by the BRTS[21]. The payments to bus administrator aren't bound with the benefits of the business, below the table and administrative catch by administrator isn't noticeable and the framework keeps running according to the desire of the public authorities. Subsequently, the welfare-benefit goals are met and the framework by all means has sustainably accounted over a period of time.

This type of contract is in practice in Ahmedabad, Indore, NCR and some foreign

countries like Bogota (Colombia) and Australia.

Net Cost Contract in City Bus Services

In the NCC model (figure 6), the bus administrator has the danger of gathering and withstanding income perils. Consequently, the administrator pays an yearly or month to month premium per bus or per route to the SPVs or may request reasonability gap subsidizing (in case of lossy operations) for the rights benefited to run the city transport benefits on indicated routes. In any case, directing, planning and admission setting and toll modification powers are vested with the SPVs.

NCC at first occurrence is by all accounts worthwhile for the administration as they spare a great deal on forthright capital speculations, labor costs and furthermore the income chance is on the shoulders of the private transport administrator (concessioner). In any case, close perception provides some insight that legislature/SPV isn't shielded from hazard and just the dangers or misfortunes that must be borne by SPV are conceded in time. For the most part received by urban areas which are, littler in size, fiscally stressed, and have limited limitations to raise funds from the business industry.

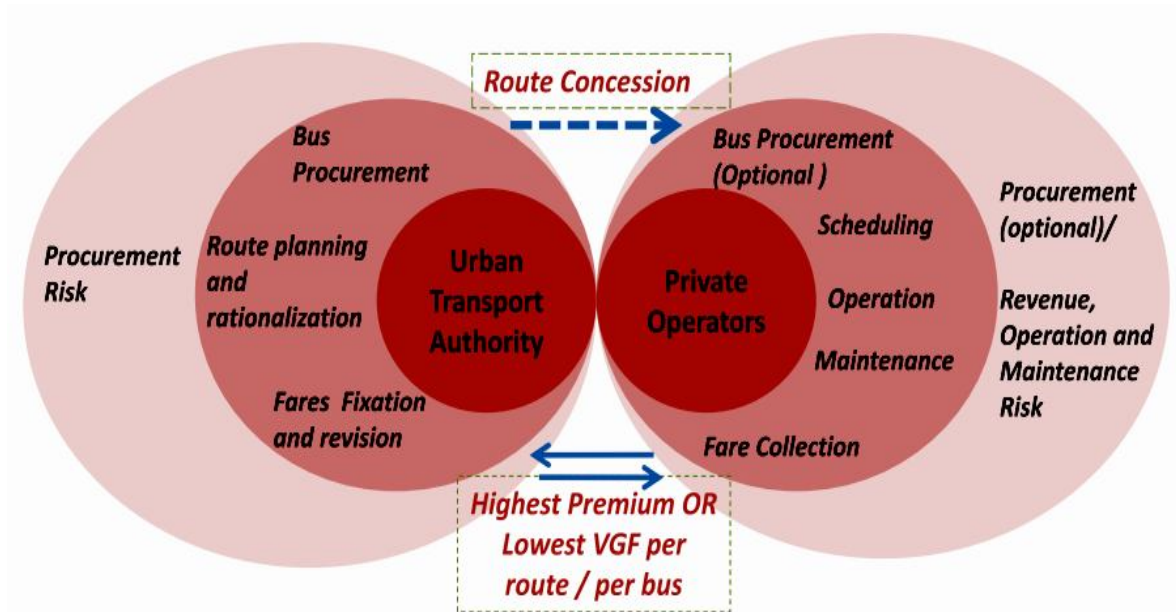


Figure 6. Transaction mode of an NCC model

- The major query is which mode of transport is beneficial, private or public, and in what terms one can be adopted?

Consequently, an inclination towards GCC has risen throughout the world, basically because of high dangers on the private administrators involving the NCC scheme without anticipated rate of returns which are generally low. Universally, a blend of GCC and NCC model has been enforced, and varieties of these models have additionally been tried with different other plans. The city of Quito works its city transport benefits through the NCC model. While Adelaide and London have executed GCC (with monthly fixed defrayments) vice-versa. Santiago has a managed to sign the road contract among NCC and GCC, were

the specialists and the administrator share the additional promotional income (70/30) and fare box income (50/50). It is contracted for 10 years and the agreement can be protracted if the administrator meets prerequisites with respect to improvements sought after (km/passenger), and improvement in records and quality. Every city has experienced a time of change, and has embraced the model most appropriate according to the needs.

Advantages and Disadvantages

Net Cost Contract Model

In this type of contractual model, the operators provide particular services for a limited period of time and keeps all the generated revenue. If the service is

profitable then the authority pays the operator a royalty while if it is unprofitable then the authority pays the operator a subsidy. However, the private administrator has to make a forecasting of his profits and charges.

An NCC model will be suitable if:

- The govt /authority wishes to increase revenue and ridership through incentives
- A small proportion of revenue is generated from non-ticket-sale revenue like advertising, which can be shared conveniently between the two parties.
- The govt/authority wants to give a fixed amount of subsidy

Some of the major disadvantages of Net Cost Contract model can be listed as below:

- Financial burden may actually be higher on the authority in NCC model than in the GCC model
- Operator may not willingly change schedules as per wishes of the authority if that affects his revenues
- More operators opt for GCC model as compared to NCC model
- This contract is prevalent in some Indian cities such as Bhopal and Indore and also in Singapore.
- Indore has in fact four models working inside the city bus service-GCC, NCC,

Hybrid GCC and Hybrid NCC modes in different sectors.

Gross Cost Contract Model

This type of contract is done when the govt./ authority hands over business activity of a single route or different routes to a private entity. In this contract the operator is paid a fixed fee for providing particular services, with maintained quality for aforementioned period. The fee is decided by a competitive bidding process.

A GCC contract is suitable if:

- It is for a specified time period
- The authority wishes to keep full control over quality of services
- The authority wishes to control fare fixation
- The authority wants to give small operators a chance
- Wishes to maintain route frequency on different routes as per demand of public
- Wants to collect high non-ticket sale revenue

The major drawbacks of a GCC model are:

- As this option places the greatest demands on the authority, it requires the highest numbers of staff

- Penalties must be in place both for passengers who do not have tickets and staff who fail to issue tickets
- Operator is not concerned with the efficient operations on the route
- The operator is not directly entitled to incentives to ensure revenue collections
- The authorities ensure that all revenues are being collected and handed over, requiring continual attention and inspections
- All the services, enhancements and maintenance are initiated by the authority which might result in a very conservative approach.

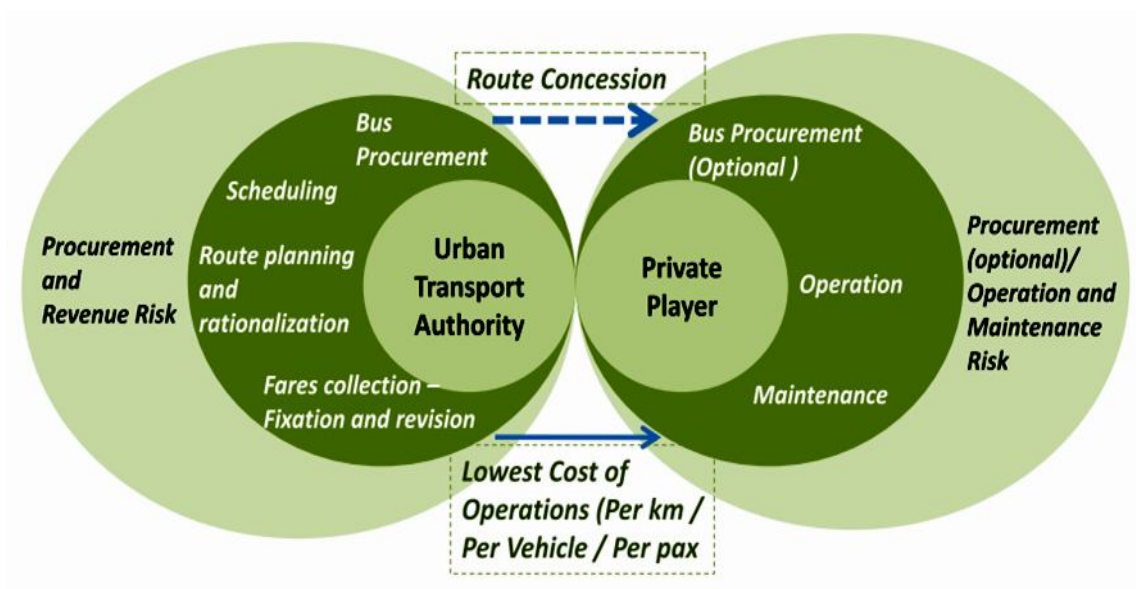


Figure 7.Mode of a GCC model

In hybrid form of GCC model (figure 7), an incentive to increase rider-ship is included and this model is in practice in Germany

and Sweden. GCC model is also in practice in some Indian cities such as Delhi, Ahmedabad and Ludhiana.

Few Cities	Status	Possible Reasons
Cities of Madhya Pradesh 1. Ujjain 2. Indore 3. Bhopal Cities of Rajasthan 1. Kota 2. Jodhpur 3. Jaipur Cities of Gujarat 1. Rajkot 2. Vadodara 3. Surat Cities of Punjab 1. Jalandhar 2. Ludhiana 3. Amritsar	• Most of the cities had Single bidder hence competitive selection was not possible • Cities like Ludhiana and Amritsar didn't receive any proposal in the first attempt. Ludhiana moved to GCC while Amritsar got only two proposals in second attempt after many relaxations in RFP. • Many of the NCC projects are either closed or early terminated OR • The systems are not expanded since start of commercial operation	• Non viability of the operation due to low fares and in adequate fare revision • Lack of effective monitoring therefore schedules and routes were not followed properly • The unviable routes were surrendered hence urban transportation was not available in developing and peripheral areas • Owing to low operational viability systems were not expanded nor buses were maintained led to poor passenger demand

Figure 8. Status of the PPP models in few locations

It is worth mentioning that in Indian cities, we started with Net Cost Contract models but over the period of time we are shifting to Gross Cost Contract model due to a variety of reasons. The foremost feature is that in NCC model, the authority loses control over the fare charged by the operator because over a certain period of time the latter starts making excuses for profitability issues and insists on increasing the fare. The service quality also declines because the private operator curtails services on less profitable routes and operates more on high profitability routes. Also the operator starts demanding subsidy or grant for losses that he supposedly is suffering on some routes (figure 8). The main concern of the

authority is to maintain service quality keeping in mind the welfare of the public irrespective of the fact that it is incurring losses or profits because after-all we are a welfare state. At the same time the authority is bound to retain control on operations as well as the fare structure in the interest of the masses. Hence after all these experiences, the GCC model is being preferred in Indian cities and wherever NCC is being used there also slow transfer to GCC mode is occurring.

Built practice of Private-Public Participation expertise that successfully serve certain Indian cities:

➤ Ahmedabad

- Indore
- Mumbai
- Bangalore

Conclusions

From GCC and NCC models contemplated and talked about here above it is seen that the difficulties examined above are neither location completely by execution of GCC or NCC. Be that as it may, GCC system is in a superior position to deal with the difficulties contrasted with its partner NCC. Bangalore, Delhi, Ahmedabad and Indore are examples that successfully implemented the GCC models. The welfare-benefit objective is better achieved in GCC since the income hazard isn't on the shoulders of the concessionaire. There can't be panacea for all ills and consequently the significance of both the models should be valued. For example, in little urban communities and towns, which are fiscally compelled, it is fitting to run transport tasks on NCC premise.

However, one needs to bear in mind that GCC too faces a couple of problems. To start with, most of the cities face financial constraints to fund the urban transport projects and its operations and maintenance. ULBs do not have a very healthy tax base to fund such projects on a continuous basis. As

a result of this, the payments for rolling stocks are delayed or the purchases are deferred.

Since India has urban communities which are very much experienced in city transport administrations with or without budgetary limitations and urban areas which are new to city transport administrations and with budgetary imperatives, we need both GCC and NCC models. So as to make GCC and NCC additionally engaging after estimated could be taken.

- Bus admissions ought to mirror the genuine expense of running the administrations and toll modification system ought to be on spot. The administration/ULB/SPV which needs to have concession goes for travelers may settle on it, however should pay the transport administrator (in the event of NCC) for equalization sum so the installment gotten by the administrator mirrors the genuine expense of administrations.
- Operators will approach the notice incomes on transports and transport stations in fractional or deficient when NCC is received. In spite of the fact that the ad income is small despite everything it enhances budgetary suitability insignificantly. Additionally,

the alternative of practicality hole financing in NCC should be given a genuine idea. This might be an aid for a private player where the traveler requests are on the lower side.

- There ought to be a component set up to adjust the social courses and business courses. In the event that the administration feels that the social courses are huge because of some political or social weight, they may in any case select to run it. Be that as it may, if there should arise an occurrence of NCC structure, to some limits public traffic should be worked out and if the normal passenger traffic lies beneath the edge public traffic level, the administration/ULB/SPV will remunerate the administrator for the administrations rendered.
- This will maintain a strategic distance from the issue of administrative catch and regular course changes which is unwanted for the framework over the long run. If there should be an occurrence of GCC as well, there ought to be the benchmark which naturally ends the course in the event that it doesn't work as per anticipated benchmarks. This will keep impedance from political masses under control.

- Although, rivalry is proficient and successful in the majority of the business sectors, it could have disastrous outcomes whenever polished out in the open transport.
- The historical backdrop of 'penny-war' in Bogota city transport and the issues related with open transport in Melbourne or train and cable car trick in Australia, due to multi administrators are where the challenge has boomeranged very gravely. Consequently, multi administrator NCC model ought to be embraced with extraordinary consideration. In any case, in GCC the multi administrators will have no negative effect as observed in NCC as the defrayals are not founded on traveler trips.

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