

Review of City Bus Transportation under JNNURM: A Study of Lucknow City

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From traditional means of palanquins to modern means of transportation, the face of Indian transportation system has progressed at a rapid pace since the inception of economic liberalization of the 1990s. India's public transports systems which is rising by almost 10% a year are among the most heavily used in the world but the access to these modes of transport has not been uniform and are still riddled with problems due to poor or outdated infrastructure and lack of investment.

Ministry of Urban Development started project named JNNURM (Jawaharlal Nehru National Urban Renewal Mission) with an aim to encourage reforms and fast track planned development of identified cities. The focus of the project is on efficiency in urban infrastructure and service delivery mechanisms, community participation, and accountability of ULB's (Urban Local Bodies) / parastatal agencies towards citizens. One of the major thrust areas of this scheme is urban transport system under which UPSRTC (Uttar Pradesh State Road Transportation Corporation) has been providing city bus financially supported by JNNURM in various selected cities of India. The present paper provides an overview of city bus service in Lucknow city followed by attitude of passengers / commuters towards it.

Key Words: Transportation, JNNURM, UPSRTC, LCTSL, ULB, Passengers, Commuters

Introduction

Indian cities face a transport crisis characterized by levels of congestion, noise, pollution, traffic fatalities and injuries. India's transport crisis has been exacerbated by the extremely rapid growth of India's large number of cities in a context of low incomes, limited and outdated transport infrastructure, rampant suburban sprawl, sharply rising motor vehicle ownership and use, deteriorating bus services, a wide range of motorized and non-motorized transport modes sharing roadways, and inadequate as well as uncoordinated land use and transport planning. Public transportation plays a vital role in the transportation system of an area and it also helps to minimize traffic congestion and other traffic-related externalities. The urban public transport system operates in a very complex external environment, which needs to be clearly understood. The level and phase of development of public transport varies across Indian cities. There is not one consistent model of urban public transport system and improvement to this cannot be carried out in isolation.

The Government of India has proposed substantial assistance through the JNNURM over the seven-year period which starts from 2005-06 with an aim to encourage reforms and fast track planned development of identified cities. Focus is to be on efficient in urban

infrastructure and service delivery mechanisms, community participation. During this period, funds shall be provided for proposals that would meet the mission's requirements. Under JNNURM financial assistance will be available to the ULB's (Urban Local Bodies) / parastatal agencies that could deploy these funds for implementing the projects themselves or through the special purpose vehicles (SPVs) that may be expected to be set up. Assistance under JNNURM is additional central assistance, which provides 100 per cent central grant to the implementing agencies. Further, assistance from JNNURM is expected to facilitate further investment in the urban sector. To this end, the implementing agencies are expected to leverage the sanctioned funds under JNNURM to attract greater private sector investments through PPP (Public Private Partnership) that enables sharing of risks between the private and public sector. The total number of cities under the JNNURM is around 60 which is categorised as A, B and C based on the number of populations. Under category B, 28 cities has been selected from across the India having population of more than 1 million, out of that, 3 cities Lucknow, Kanpur and Allahabad has been selected in Uttar Pradesh for urban transportation under JNNURM to jointly work with UPSRTC with following highlights—

- Fastest service— Early destination
- Halt at stop only
- Time punctuality
- No overloading
- Less waiting time
- Concessional pass facility
- Unlimited travelling for the pass holders anywhere across the city within the day
- timings
- Direct special service for employees
- Pollution free high quality Euro-II buses

Passenger road services in the state of Uttar Pradesh were started in the year 1947 which rechristened to UPSRTC in fourth five year plan. UPSRTC being a public sector passenger road transport corporation providing services

in the state of Uttar Pradesh and other adjoining states in North India. Presently JNNURM-UPSRTC buses in Lucknow city, monitored by LCTSL (Lucknow City Transport Services Limited) are running through 25 major routes. Some of the major routes are shown in Figure 1, while the fare structure and concession rates (Ordinary / Non AC bus) are shown in Table 1 and Table 2 respectively. The major work of LCTSL is to run buses on the streets of Lucknow city and monitor Daily income / KM record, Daily ticket sold position, Daily collection record, Daily vehicle report, Daily ticket sale account as well as bag room account, through Vehicle Tracking system, Fleet Management system, Operation and Revenue Management. Apart from this LCTSL also invites tender for selection of an agency for sole advertisement rights on the buses (Internal / External panels) for a contract period of two years, extendable by one year at a time for a maximum period of 3 years.

Figure 1: Major Routes of City Bus Service in Lucknow City

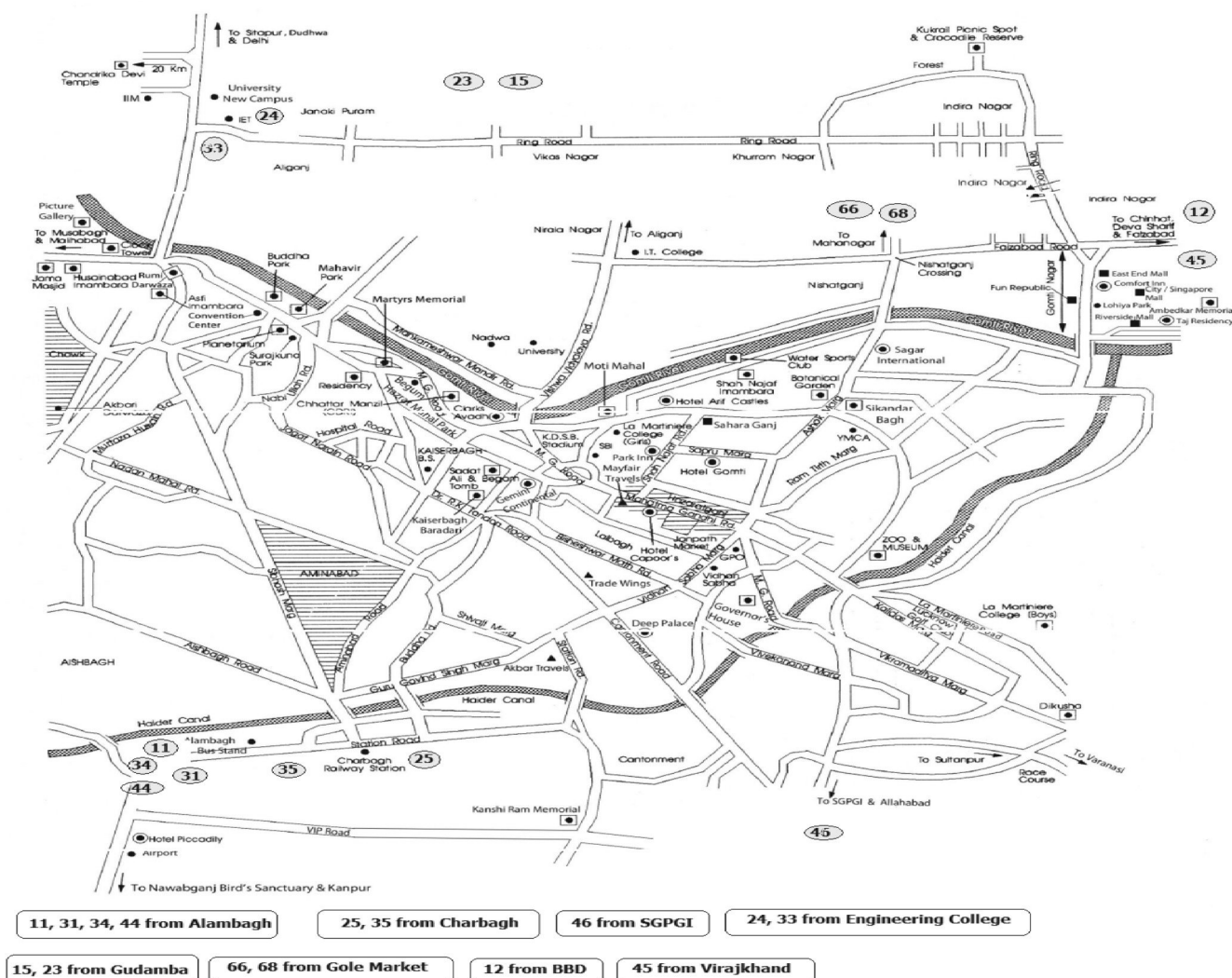


Table 1: Fare Structure

Distance	Ordinary Bus	Non AC Bus	AC Bus
Upto 3 Kms	Rs 4.00	Rs 6.00	Rs. 10.00
Between 3-5 Kms	Rs 6.00	Rs 6.00	Rs. 10.00
Between 5-10 Kms	Rs 10.00	Rs 10.00	Rs. 15.00
Between 10-15 Kms	Rs 12.00	Rs 12.00	Rs. 20.00
Between 15-20 Kms	Rs 15.00	Rs 15.00	Rs. 20.00
20 Kms and above	Rs 20.00	Rs 20.00	Rs. 25.00

Table 2: Pass Rates / Month

Distance	Students Up to 10 th Class	Students Up to 10 th Class / Below 21 Years	Senior Citizens	Other Adults
Up to 10 kms	Rs 150.00	Rs 100.00	Rs 265.00	Rs 290.00
11 – 15 Kms	Rs 180.00	Rs 210.00	Rs 340.00	Rs 360.00
Above 15 Kms	Rs 220.00	Rs 240.00	Rs 410.00	Rs 435.00
All routes	Rs 270.00	Rs 300.00	Rs 510.00	Rs 540.00

CONCESSION

Period	Concession (%)
Two Months	8%
Three Months	10%
Six Months	15%
One Year	20%

Objectives of the Study

The present study focuses on following research objectives:-

- 1) To study the awareness about the facilities provided or likely to be provided by the UPSRTC.
- 2) To study the attitude of passengers towards the city bus service in Lucknow.
- 3) To study the passengers preference towards available modes of transportation.
- 4) To study the problems faced by passengers/ commuters while travelling in city buses.

Research Methodology

To determine the above objectives, primary data has been collected with the help of questionnaire having dichotomous closed ended questions. The independent variable used in this study is overall satisfaction with JNNURM-UPSRTC service. Dependent variables is specific service quality attributes which consist of public bus transport departure frequency, travel time, punctuality, price, information, cleanliness, staff behaviour, bus comfort, seat availability, bus stop security, safe from accident, on board security, bus stop condition etc.

Research Design

Research type	: Conclusive (Descriptive) research
Research approach	: Survey method

Research instrument : Questionnaire
 Data collection method : Primary Sources
 Sampling method : Non probability
 (Convenience sampling)
 Sampling unit : Passengers / commuters
 Sample size : 200
 Sample area : Lucknow city

The distribution of sample for subject study can be seen in below Table 3 depicting demographic variables as well as percentage distribution of the respondents.

Table 3: Sample / Respondents profile

Demographic Variables	Percentage Distribution	
Gender	Male 50%	Female 50%
Absolute Number	100	100
Age	Below 25 years	35%
	Between 26-40 Years	25%
	Between 41-55 Years	25%
	Above 50 Years	15%
Area	Urban 90%	Rural 10%

Data Analysis

The analysis of the workable questionnaire reveals the following trends:-

1. Frequency of travelling in city bus

Table 4

Showing frequency of travelling in city bus

Frequency of Travel	No. of Respondents	% age
Daily	58	29
3-4 times a week	120	60
Once or twice a week	22	11
Total	200	100

Chart 1 Showing frequency of travelling in city bus

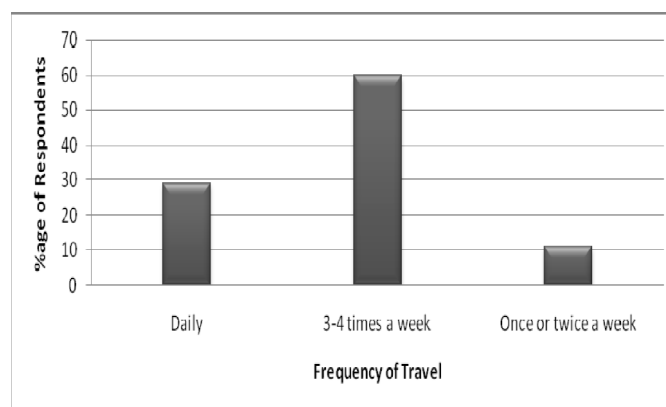


Table 4 and its associated bar chart 1 revealed that majority of passengers (60%) agree that they travel 3-4 times a week, while 29% agrees to travel daily while 11% use to travel only once or twice a week. The majority of passenger are frequent commuters, they travels in city bus because they have direct service from their location to their work place and they are also availing the MST (Monthly Season Ticket) facility offered by city bus transportation.

2. Preferred reason for using city bus service

Table 5

Showing preferred reason for using city bus service

Reason for using City Bus	No. of Respondents	% age
Economic	124	62
Less Time Taking	8	4
Convenience	56	28
Safety	12	6
Total	200	100

Chart 2

Showing preferred reason for using city bus service

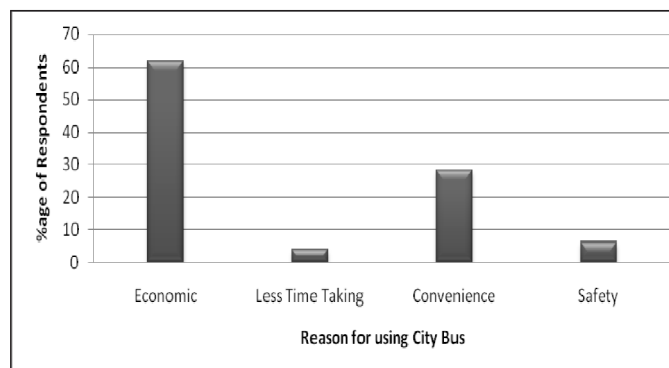


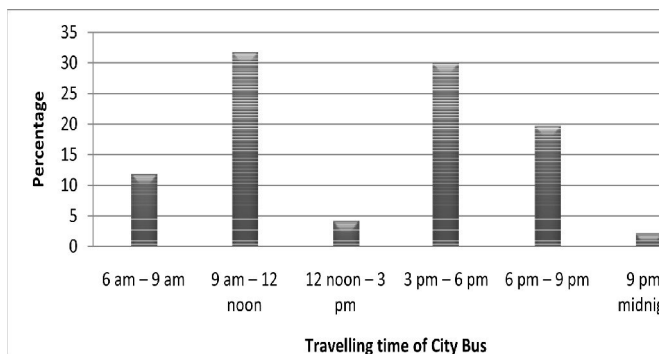
Table 5 and its associated bar chart 2 revealed that 62% of the passengers have given priority to the bus fare as the most preferred option for using city bus service followed by convenience (28%), where as safety and time have no such importance for them. It seems that economy of journey is prime factor for the commuters due to hike in fuel and increasing distances in the city.

3. Travelling time of city bus

Table 6
Showing travelling time of city bus

Travelling Time of City Bus	No. of Respondents	% age
6 am – 9 am	24	12
9 am – 12 noon	64	32
12 noon – 3 pm	8	4
3 pm – 6 pm	60	30
6 pm – 9 pm	40	20
9 pm - midnight	4	2
Total	200	100

Chart 3 Showing travelling time of city bus



It is revealed from Table 6 and its associated bar chart 3 that 32% of the passengers use the city bus service during between 9-12 noon while 30% use the service in the evening from 3-6 pm as this is the time where one has to reach the office or their work site and return back from the office or work site. For 6-9 am and 6-9 pm the commuters shift to other modes preferably three wheeler to avoid rush of the peak time. From 12-3 pm, the traffic is less and from 9 pm to midnight there would be few passengers on the road to aboard the bus as during this time the bus frequency is reduced and the

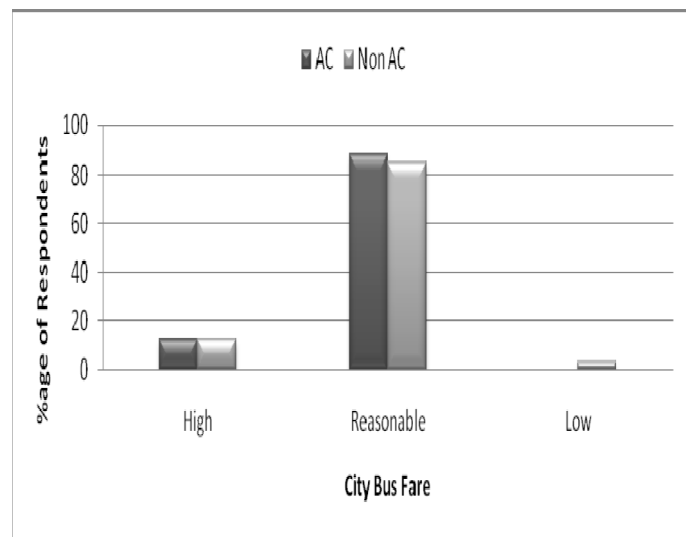
passenger go for another option (three wheelers) instead of bus as he has to reach his house in time.

4. City bus fare

Table 7 Showing city bus fares

City Bus Fares	No. of Respondents		% age	
	AC	Non AC	AC	Non AC
High	24	24	12	12
Reasonable	176	170	88	85
Low	0	6	0	3
Total	200	200	100	100

Chart 4 Showing city bus fares

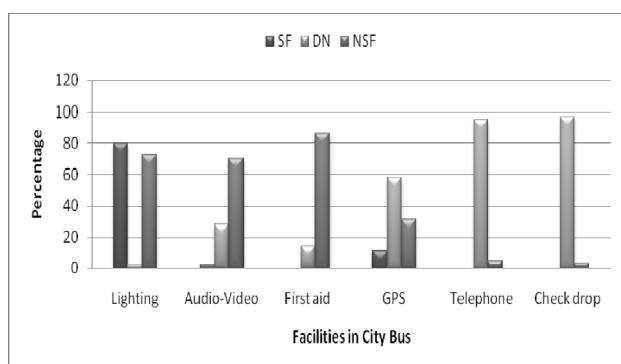


As far as the opinion for bus fare (AC and non AC both) is concerned, Table 7 and its associated bar chart 4 revealed that a substantially great majority of passengers (88% for AC bus and 85% for Non AC bus) agreed that the present fare structure of city bus service is reasonable except the minimum fare charge, which is Rs 4 in ordinary small buses while for the same distance the big bus charge Rs 6, which is 33% more than the ordinary bus fare. While discussing this matter with one of the bus conductor the researcher came to a conclusion that the big bus cost more so the city bus corporation charge Rs 2 more for the same initial distance to cover those expenses. Secondly only 12% of the passengers opined that the present fare structure of both the buses are high, while there is only a meager section of passengers who said that the present fare is high.

5. Various facilities in city bus service

Facilities in City Bus	No. of Respondents				% age			
	SF	DN	NSF	Total	SF	DN	NSF	Total
Lighting	160	4	36	200	80	2	72	100
Audio-Video	4	56	140	200	2	28	70	100
First aid	0	28	172	200	0	14	86	100
GPS	22	116	62	200	11	58	31	100
Telephone	0	190	10	200	0	95	5	100
Check drop	0	194	6	200	0	97	3	100

Chart 5 Showing facilities in city bus service



SF: Satisfactory DN: Don't Know NSF: Not Satisfactory

It is revealed from Table 8 and its associated bar chart 5 that majority of the passenger (97% for check drop, 95% for Telephone, 58% for GPS) have no idea about the facilities providing by the local city transportation or the facilities provided by city transportation in other mega cities like Delhi, and Mumbai. For lighting the response of the passengers is alright, but for entertainment (audio-video aids like FM radio/TV) or first aid box, their response is not satisfactory and they said that that entertainment during travelling is not so important but there must be first aid box with all the bus crew so that in the case of minor accident they can use it.

As far as the GPS (Global positioning system) is concerned, 58% of the passengers have no idea, except the passengers who are using the service of route no. 12, 33 or 23 that provide this facility. They even do not know about the pay and call facility of telephone or cheque drop facility offered by private sector banks in other mega cities of India. In this one can drop his cheque in the box provided and the same will be collected by the bank employee at the end of the day.

6. Availability of bus stoppage

Table 9 showing availability of bus stoppage

Availability of Bus Stoppage	No. of Respondents	% age
Available	64	32
Not available	136	68
Total	200	100

Chart 6 Showing availability of bus stoppage

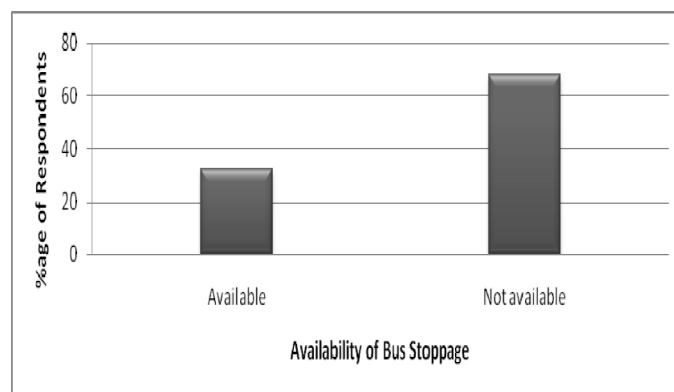


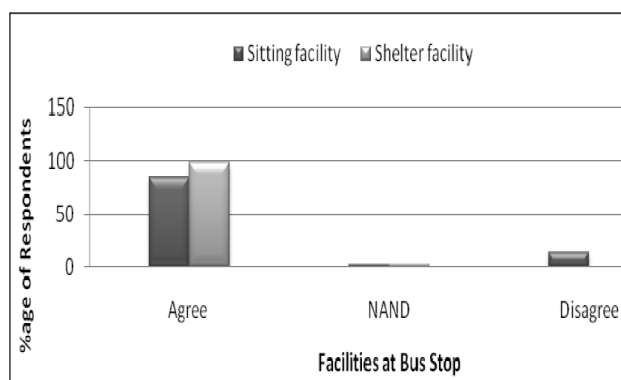
Table 9 and its associated bar chart 6 revealed that 68% of the passenger claims that there is no proper bus stop facility near their location and the driver stop the bus only when there is large number of people to aboard. Apart from this, no bus stop is having the bus route display board and also in the absence of queue facility, it is very difficult for the old persons and ladies to board in the bus. Contrary to this 32% passengers agreed that there is a bus stop available near their location.

7. Facilities at bus stop

Table 10 Showing facilities at bus stop

Facilities at Bus Stoppage	No. of Respondents		% age	
	Sitting facility	Shelter facility	Sitting facility	Shelter facility
Agree	168	196	84	98
Neither Agree Nor Disagree	4	4	2	2
Disagree	28	0	14	0
Total	200	200	100	100

Chart 7 Showing facilities at bus stop



NAND: Neither Agree nor Disagree

As far as the shelter and sitting facilities is concerned, Table 10 and its associated bar chart 7 revealed that 84% and 98% of the passengers have agreed that there must be proper sitting and shelter facilities respectively at each bus stop so that people can take rest and covered themselves from rain and scorching heat, while waiting for the bus.

8. Payment of money from conductor

Table 11
Showing payment of money from conductor

Payment of Money from Conductor	No. of Respondents	% age
Always give actual balance	16	8
Sometimes give actual balance	166	83
Never give balance amount	18	9
Total	200	100

Chart 8
Showing payment of money from conductor

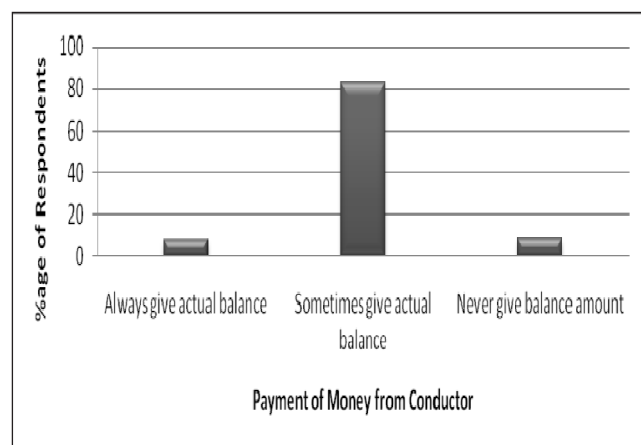
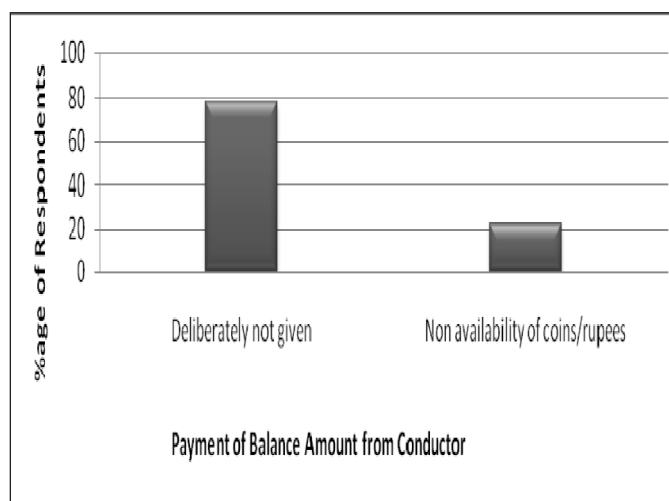


Table 12 Showing payment of balance amount from conductor

Payment of Balance Amount from Conductor	No. of Respondents	% age
Deliberately not given	176	78
Non availability of coins / rupees	44	22
Total	200	100

Chart 9
Showing payment of balance amount from conductor



It is revealed from Table 11 and 12 and its associated bar chart 8 and 9, that while travelling, most of the passengers (83%) faced the problem of actual change, as sometimes the conductor of the bus does not provide actual change to the passenger and write down the balance amount on the back side of the ticket and tell them to collect it later. While in reality, in most of the cases (78%) opined that despite having change he deliberately does not give the actual balance amount to the passengers as during rush hour mostly passengers forgets to collect balance amount or it is difficult to trace the conductor, hence that money directly goes into the pocket of the conductor.

9. Duties of conductor

Table 13 Showing duties of conductor

Duties of Conductor	No. of Respondents		% age	
	Next Stoppage	Boarding/ Alighting	Next Stoppage	Boarding/ Alighting
Never	174	146	87	73
Sometimes	24	44	12	22
Always	2	10	1	5
Total	200	200	100	100

**Chart 10
Showing duties of conductor**

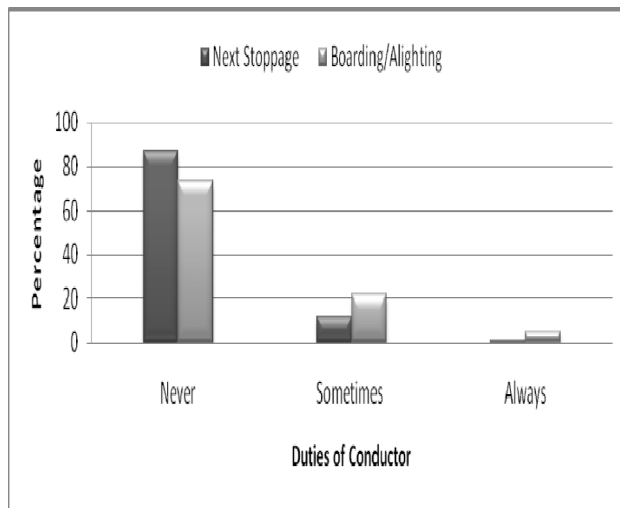


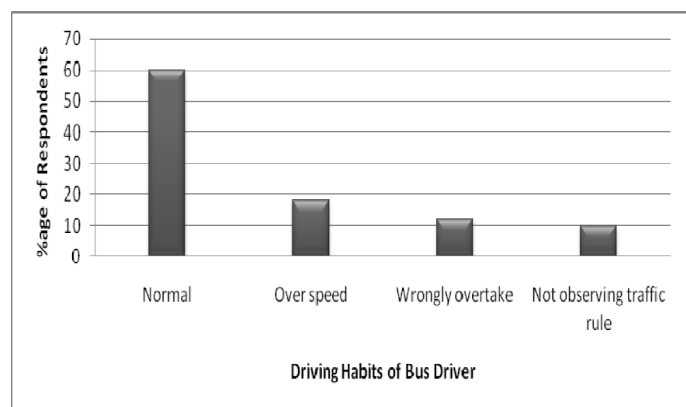
Table 13 and its associated bar chart 10 revealed that majority of the passenger's i.e. 87% complaint that the conductor of the bus never informs them about the next coming stoppage, while 73% opined that when the bus stops at the concerned stoppage, the outside passengers start entering from the front door, which is meant for getting down and the conductor never checks them not to do so. As a result it leads to mishap at the door ending up into quarrelsome argument among the passengers.

10. Driving habit of city bus drivers

Table 14 Showing habit of city bus drivers

Driving Habits of Bus Drivers	No. of Respondents	% age
Normal	120	60
Over speed	36	18
Wrongly overtake	24	12
Not observing traffic rule	20	10
Total	200	100

Chart 11 Showing habit of city bus drivers



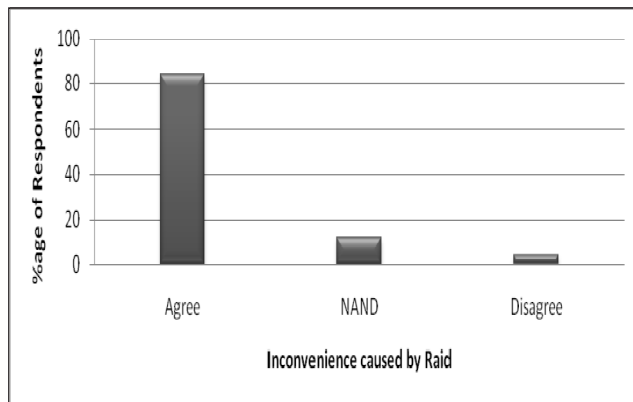
As far as the driving of bus driver is concerned, Table 14 and its associated bar chart 11 revealed that majority of the passenger (60%) agreed that there driving is normal except in few cases where the driver does not follow the traffic rules and wrongly overtake to catch the passengers.

11. Inconvenience caused by raid during travel

**Table 15
Showing inconvenience caused by
raid during travel**

Inconvenience Caused by Raid	No. of Respondents	% age
Agree	168	84
Neither Agree Nor Disagree	24	12
Disagree	8	4
Total	200	100

Chart 12 Showing inconvenience caused by raid during travel



NAND: Neither Agree nor Disagree

It is a common practice that the government traffic vigilance staff stops the buses anywhere and starts checking passengers as well as bus crew members. This process may take a time of 10-15 minutes, the practice is painful for those who are running out of time and have some important work to do. In big cities, this procedure is quite different, where vigilance staffs do not stop the buses but get aboard in the bus and do their routine work. Once the inspection gets finished, they get down from the bus and catch another bus for their destinations. Table 15 and its associated bar chart 12 revealed that 84% of the passengers agree that this process causes inconvenience while only 4% disagree with the statement.

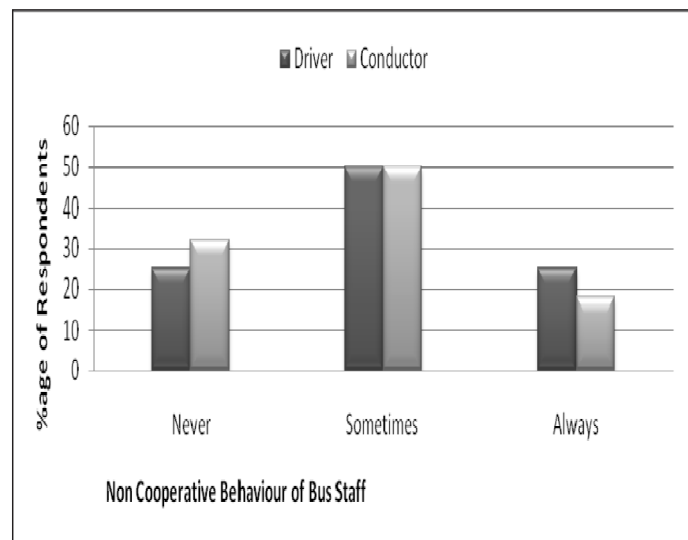
12. Non cooperative behaviour of bus staff

Table 16 Showing non cooperative behaviour of bus staff

Non Cooperative Behaviour of Bus Staff	No. of Respondents		% age	
	Driver	Conductor	Driver	Conductor
Never	50	64	25	32
Sometimes	100	100	50	50
Always	50	36	25	18
Total	200	200	100	100

Chart 13

Showing non cooperative behaviour of bus staff



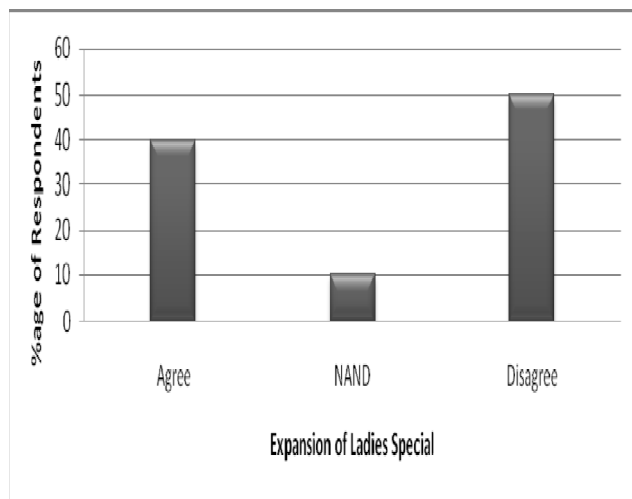
As far as the behavior of the bus staff is concerned that they are cooperative, Table 16 and its associated bar chart 13 revealed that exactly 50% of the respondents agree that the behavior of the crew members are sometimes cooperative, while 25% (in case of driver) and 32% (in case of conductor) disregard the statement by saying that they never cooperate. Usually the commuters try to be diplomatic as they did not expect much from the driver as he follows the instructions of the bus conductor.

13. Expansion of ladies special bus service

Table 17 Showing expansion of ladies special bus service

Expansion of Ladies Special	No. of Responses	% age
Agree	80	40
Neither Agree Nor Disagree	20	10
Disagree	100	50
Total	200	100

Chart 14 Showing expansion of ladies special bus service



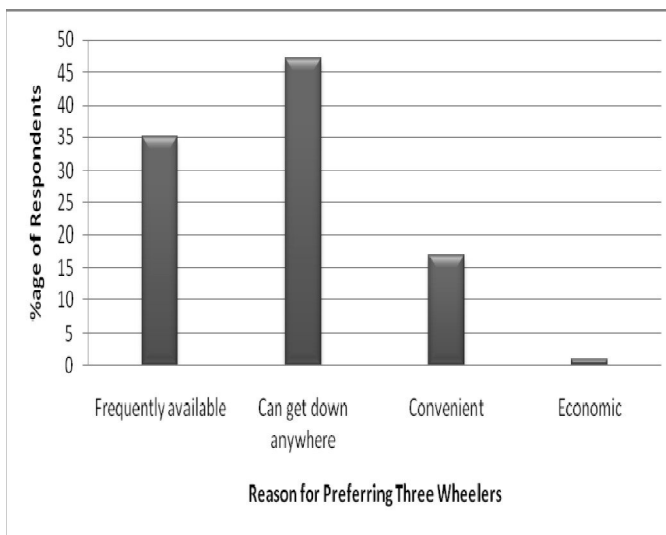
Presently there are only few ladies special buses (Sakhi) running on the roads of Lucknow. Table 17 and its associated bar chart 14 revealed that 40% of the passengers (mostly ladies) give green signal to start more such buses to facilitate lady commuters, 50% of the male passenger strongly oppose the initiative as they are in favour of general bus services. However in the first week of May 2012 (Times of India, Lucknow edition), government announce to launch 1000 buses to facilitate the public of UPSRTC.

14. Reasons for preferring three wheelers to city bus

Table 18 Showing reasons for preferring three wheelers to city bus

Reason for Preferring Three Wheelers	No. of Respondents	% age
Frequently available	70	35
Can get down anywhere	94	47
Convenient	34	17
Economic	2	1
Total	200	100

Chart 15 Showing reasons for preferring three wheelers to city bus



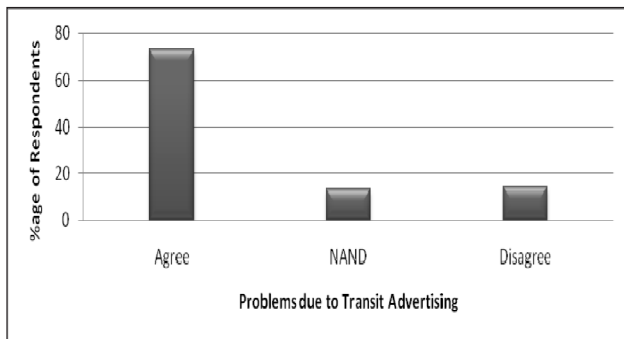
Despite having good city bus service, Table 18 and its associated bar chart 15 revealed that 35% of the passengers still preferred three wheelers because it is frequently available while 47% said that the good thing about three wheelers is and that one can easily get down at the place of their choice. The major use of three wheelers is in those areas where bus service is not possible and people have no other option available rather than to opt three wheelers without bothering about its fare.

15. Problems due to transit advertising through bus: -

Table 19 Showing problems due to transit advertising through bus

Problems Due to Transit Advertising	No. of Respondents	% age
Agree	146	73
Neither Agree Nor Disagree	26	13
Disagree	28	14
Total	200	100

Chart 16 Showing problems due to transit advertising through bus



NAND: Neither Agree nor Disagree

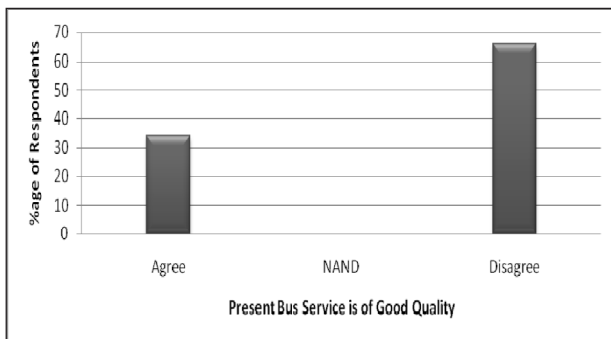
Now a days it is a common practice to use the whole bus body as an advertisement base for advertising and generate revenue. Table 19 and its associated bar chart 16 revealed that 73% of the respondents agree that this may cause problem in viewing the electronic route display indicator and strongly oppose for it by saying that due to this there is a chance that the passenger may miss the bus.

16. Good quality of present city bus service

Table 20 Showing good quality of present city bus service

Present Bus Service is of Good Quality	No. of Respondents	% age
Agree	68	34
Neither Agree Nor Disagree	0	0
Disagree	132	66
Total	200	100

Chart 17 showing good quality of present city bus service



NAND: Neither Agree nor Disagree

It is revealed from Table 20 and its associated bar chart 17 that 66% of the respondents do not agree to the good quality of the bus service while 34% are satisfied with the service given to the passengers. This means that still there is a room for improvement in city bus services.

17. Suggestions to improve city bus service

Table 21 Showing suggestions to improve city bus service

Suggestions for Improvement	No. of Responses	% age
Improve maintenance	8	4
Punctuality	10	5
Increase frequency	96	48
Good behavior of crew members	4	2
Avoid overcrowding	72	36
Safe driving	10	5
Total	200	100

Chart 18 Showing suggestions to improve city bus service

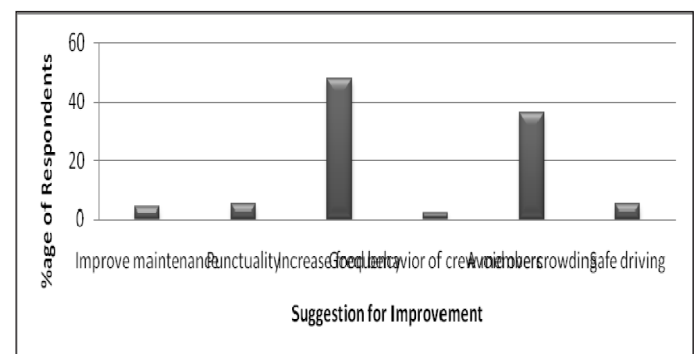


Table 21 and its associated bar chart 18 revealed that as regards to the submission of suggestions, 48% of respondents have shown the priority in favour of increased frequency of availability of buses on a specific route, while 36% seek to have the measures to reduce overcrowding in the buses.

Conclusion and Policy Implications

Cities play a vital role in promoting economic growth and prosperity. The development of cities largely depends upon their physical, social, and institutional infrastructure. Transport systems are among the various factors affecting the quality of life and safe movement in a city. India is only 30% urbanized at present, however, is expected to double its urban population in the next twenty years. Since urban transport and urbanization are closely interlinked, therefore planning for urban transport starts at understanding the urbanization process which affects the quality of life and safety in city.

The JNNURM has been projected to enhance the quality of bus services with passenger's friendly ambience inside and supportive move outside. On the basis of this analytical study it is suggested to have the following measures.

1. Due to more and more workforce coming to the urban area from remote places; it is advisable to have proportionally higher number of buses to make it convenient for the natives especially during peak hours to avoid overcrowding.
2. There should be uniformity in the frequency of buses adherence to strict timings is required to maintain service quality.
3. Proper maintenance of buses and bus stands are required to retain the existing passengers and attracting the new ones. It is very necessary for the survival of public sector transport in the times to come.
4. Bus drivers should stop the bus close to the bus stop and not in the middle of the road causing hindrance to public.
5. All buses can have light radio/ music system or provision for video to be played so that the passengers don't feel the stressed and they may enjoy their trip.
6. Covered bus stop should be built up to adjust the climatic extreme conditions.
7. There should be proper first aid facility provided in every bus to meet any emergency.
8. Conductor should carry more coins to avoid the in returning the balance amount of fare.
9. Conductors and drivers need to be given proper behavioral trainings as to how to deal with the passengers and make them satisfied.
10. GPS (Global Positioning System) and DLF (Data Logger Facilities) to be installed over the buses which would record latitude, longitude, fuel consumption data, with time stamp so as to be able to facilitate computation of stoppage data, speed data, distance covered, route deviation, stoppage deviation, skipping of scheduled stoppages, and provide passenger information like next bus queue shelter, expected time to arrive at next bus queue shelter, etc.,
11. LED (Light Emitting Diode) display in vehicles capable of providing information of current location of bus and the next stop and having a visibility of about 10 meters with naked eye.
12. Automated announcement facilities on the bus to inform the current position of the bus, next stoppage and time left to reach next stoppage.
13. There must be arrival and departure times at each bus stop.
14. The conductor and driver must wear dresses having their names and employee number mentioned on it.
15. There is a need to introduce special city bus to provide special service for female passenger.

Conclusively, we can deduce that majority of the respondents are not satisfied with the service quality of the present city bus. Moreover it is also found that passengers / commuters are not aware of the mandatory services to be given by the city buses. The researcher has tried to touch upon the minimum expectations of the commuting class. The suggestions are made on the basis of the interactive discussions with commuters; which could be incorporated into policy decisions of JNNURM-UPSRTC management.

The successful implementation and sustenance could be reached through following measures having inclusive approach.

- i. Formation of joint monitoring committee having the representatives from public and private both.
- ii. Awareness generation programme involving NGO

(Non Government Organization), CBO's (Community Based Organisation's).

iii. Advertising campaign for image building

Ultimately, all the stake holders have to share the responsibility of making the transport system efficient and effective.

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