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## URBAN TRANSPORT IN NOIDA CITY, UTTAR PRADESH

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### ABSTRACT

Urban population in India is increasing rapidly resulting into higher level of urbanization. Urbanization is positive and a must for faster economic development of country and to solve the major problems of unemployment, poverty and poor quality of living. For attaining higher economic growth the cities must perform efficiently which largely depends upon an effective urban transportation system. Urban transportation in Indian cities is generally inadequate affecting adversely the functioning of cities and posing survival questions of these urban settlements. This paper examines urban transport system in Noida city in Uttar Pradesh. It was found that private transport dominates in the study area as the city lacks a credible intra-city public transport system. Although Noida is a planned city but like other Indian cities hardly any attention has been paid by the city planners to the needs and safety of pedestrians and cyclists.

**KEYWORDS:** Urbanization, Urban Transport System, Public Transport, Non-motorized Transport, Sustainable Cities.

### INTRODUCTION

Urban population in India is increasing rapidly at an average rate of around 3 % annually. The level of urbanization increased from 17.29 % in 1951 to 31.16 % in 2011. Total urban population during this period saw an almost six-fold increase from 62.44 million to 377 million persons. It is expected that by 2031 about 600 million people would be living in Indian cities. Cities have emerged as engine of economic growth and urbanization is generally regarded as beneficial to society and economy. It plays a vital role in promoting economic growth and prosperity. Although only 31.16 % population lives in urban settlements, these settlements generate over two-third of the country's income and account for 90 % of government revenues (Singh, 2012). However, this economic growth can be sustained only if cities function efficiently. The efficiency of city largely depends upon effective and sustainable urban transport system. The urban transport system in Indian cities are grossly inadequate affecting the efficient functioning of cities as well as their sustainability. Indian cities are suffering from severe and worsening transport problems such as air pollution, noise, congestion, energy use, parking shortages, road safety and a lack of mobility for the poor. City planning in general have given priority to private transport and neglected public transport. Non-motorized transport which contribute about 30 % to 50 % of total commuting has almost been neglected as planning has paid hardly any attention to the needs and safety of pedestrians and cyclists. For cities to function efficiently and for sustainability the city planning must focus on promoting public and non-motorized transport.

The present study aims to study the urban transport system in Noida city in Uttar Pradesh and suggest measures to achieve efficient transport system which will go a long way in sustainable development of city.



## REVIEW OF LITERATURE

A large number of studies has pointed out the importance of urban transportation in promoting higher economic growth and prosperity (Singh, 2005, 2012; Baidur, 2015). For cities to perform and act as engines of growth, an efficient urban transportation system is a must. Singh (2012) has observed that poor transport systems stifle economic growth and development. It has been found in a number of studies that urban transport system in India and other developing countries are far from satisfactory and suffers with a number of major problems (Baidur, 2015). Pucher et al. (2017) have found that cities in China and India are suffering from severe and worsening transport problems: air pollution, noise, traffic injuries and fatalities, congestion, parking shortage, energy use, and a lack of mobility for the poor. Urban planning in developing countries focus on the needs of private transport and have neglected the development of public transport. Consequently, share of public transport is much lower than desired (Singh, 2005 and World Bank, 2014). One of the major problems of urban transport has been almost complete neglect of the needs of pedestrians, cyclists and poor who constitute a significant portion of commuters (Singh, 2005 and Baidur, 2015)

## DATABASE AND METHODOLOGY

The study is based upon both primary and secondary sources of data. Secondary sources include Census of India, Noida Master Plan and other published sources. Primary data was collected through questionnaire survey, key informants interviews and direct observation in Noida to understand the urban transport system in Noida. Questionnaire survey was carried out in eight selected localities of Noida and in each locality 30 houses were surveyed. Thus, a total of 240 households were surveyed. Stratified random sampling technique was used to select localities and households (Sinha, 2017). The selected eight localities included one slum area (Sector 10), two urban villages (Mamura and Chalera), one high density middle class (Sector 12), one medium density middle class (Sector 26), and three medium density high class residences (Sector 44, 52 and 105).

## URBAN TRANSPORT IN NOIDA CITY

Transport is the life line of any city. An inefficient transport system is the root cause of degradation of quality of life in the city. Cities just can't function or deliver without an efficient multi-model transport system. Public transport plays a key role in evolution of an efficient city transport system. There is a greater realization today across the world that sustainable urban development is possible only with an efficient public transport system which is used by over whelming majority of its citizens. An efficient public transport system has many advantages such as savings on fuel consumption, lesser requirement of land for transport land use, lesser problem of traffic congestion and parking, besides being economically more efficient. Studies on urban sprawl have stressed that one of the important characteristics of sprawl is its dependence on automobiles i.e. passenger trips dominated by use of private cars. The sprawling city may also be not having a good and efficient public transport system. Poor development of public transport forces many people to use private transport who otherwise may prefer public transport.

## INTER-CITY TRANSPORT SYSTEM

There is a lot of functional interdependence between Noida and its neighboring urban settlements. A very large volume of daily traffic exists between Noida and Delhi both ways. A large number of people have built their houses in Noida due to cheap land price but their workplace is in Delhi. On the other hand, due to emergence of Noida as an economic and educational hub, large number of people (including students) commute daily to Noida from neighboring towns. The daily commuting is maximum between Noida and Delhi both ways. Since River Yamuna makes the boundary between Delhi and Noida (also Faridabad) the entry point into Noida are few. This results into heavy traffic jams on arterial routes connecting Delhi and Noida. Introduction of Dwarka-Noida City Center route of Delhi Metro Rail Corporation about a decade back is a milestone in the evolution of public transport system between Noida and Delhi. More recently Noida has been connected by another metro route-Botanical Garden to Janakpuri West,

making commuting between Noida and south and south-west Delhi convenient. Although a large volume of private vehicle journey got shifted to metro, yet the share of private vehicle even today is very large. Ease of commuting, affordability and lack of credible intra-city public transport system are major reasons for use of private vehicle by a large number of commuters. To reduce the share of private vehicles in inter-city commuting it is imperative that both inter as well as intra city efficient public transport system is developed.

### INTRA-CITY TRANSPORT SYSTEM

In this sub-section state of public transport, number of people using private and public transport, traffic congestion and parking problem has been analyzed based upon survey result.

(a) Mode of Transport: Respondents were asked to report their daily commuting mode of transport. A total of 172 (71.67 %) respondents were commuting by private transport in comparison to only 68 respondents (28.33 %) travelling by public transport. Commuters of private transport were divided into two categories: those using motorized vehicle (2 and 4 wheelers) and those using non-motorized vehicle (bicycle, walking etc.). A total of 43 respondents (17.92 %) belonging to the slum and urban villages reported non-motorized mode. Table 1 reveals that Private Commuting dominates in Noida. Almost all respondent in high income Sectors (44, 52 and 105) were using private mode of transport (four wheelers). Not even one third of the respondents were commuting by public transport. The popular mode of public transport is shared auto for travelling within Noida and metro for inter-city transportation. There is near absence of credible intra-city bus service in Noida.

**Table 1: Mode of transport (in %)**

Localities	Public	Private	
		Motorised	Non-Motorised
Mamura	36.67	23.33	40
Sector 10	23.33	20	56.67
Sector 12	63.33	36.67	0
Sector 26	53.33	46.67	0
Sector 44	10	90	0
Sector 52	0	100	0
Chalera	40	13.33	46.67
Sector 105	0	100	0
Total	28.33	53.75	17.92

The respondents were asked to rate the public transport system in Noida and all the respondents were unanimous that public transport system in Noida is poor and felt the need for their improvement. The need for bicycle and pedestrian friendly transport system was also stressed. It is ironical that urban transport planning in India has neglected the needs of environment friendly non-motorized sector.

The survey also tried to ascertain the reason for use of private transport from respondents who were using private mode of transport. In high income localities (44, 56 and 105) ease of commuting was the most important reason with poor state of public transport also contributing to it (Table 2). In rest of the localities, poor state of public transport system was the important reason for using private mode of transport. 36 respondents, all using non-motorized mode of transport from slum and two urban villages reported that they do not need public transport as their place of work was located nearby (within 5 kms.) which they can negotiate either walking or on bicycle. It was found that a large number of respondents are willing to shift from private mode to public mode provided the public transport system improves in the city. In fact, a number of respondent complained that they are forced to travel in unwanted/unfriendly shared auto as there is hardly any alternative to it for travelling within Noida.

**Table 2: Reason for use of private transport (in %)**

Localities	Ease of commuting	Poor state of public transport	Ease of commuting+ Poor state of public transport	Others
Mamura	0	36.84	10.53	52.63
Sector 10	0	21.74	17.39	60.87
Sector 12	18.18	72.73	9.091	0
Sector 26	28.57	64.29	7.143	0
Sector 44	59.26	0	40.74	0
Sector 52	80	0	20	0
Chalera	5.556	22.22	5.556	66.67
Sector 105	73.33	0	26.67	0
Total	40.12	19.19	19.77	20.93

(b)Traffic congestion: All respondents reported that traffic congestion is a major problem in the city. This situation becomes bad during peak hours in morning and evening. Arterial routes connecting Noida and Delhi are worst. Also, all respondents stated that the problem of traffic congestion is getting worst with time. Increase in travel time in commuting to place of work was used as a proxy to assess the problem of traffic congestion. 53 respondents (22.08 %) reported that their travel time between 2005 and 2015 has increased by less than 25 % (Table 3). The place of work of these respondents was located at shorter distances. Most of these respondents belonged to slum and two villages and were using non-motorized mode of transport. Number of respondents reporting increase in travel time by more than 50 % was 120 (50 %). These respondents were commuting in motorized mode of either private or public transport for longer distances (more than 10 kms.). Since increase in travel time by 50 to 100 % is the modal class and also by looking at Table 3 in totality, it can be concluded that travel time in Noida has increased by 50 to 100 % since 2005. During survey it was observed that traffic congestion is more in northern Noida and roads connecting Delhi. The road network of northern Noida was planned only for a city population of 5.5 lakhs with a city size of 3800 hectares (Noida Master Plan - 2001). Since population of Noida has become much higher than 5.5 lakhs, the roads have become inadequate to meet the traffic needs of the larger population and area. It was also observed during survey that traffic signals (road crossing) are located at closer distances (about 1 km) which further aggravates the problem of traffic congestion and increases travel time. Noida Master Plan – 2031 has projected that population of Noida would be 25 lakhs by 2031. Unless an efficient multi-modal transport system with focus on public transport is developed in Noida, the transport system will collapse and city will become almost non-livable. Northern Noida which was developed first in the city would be the worst sufferer.

**Table 3: Increase in travel time between 2005-15 (in %)**

Localities	0-25	25-50	50-100	more than 100
Mamura	40	23.33	30	6.667
Sector 10	56.67	36.67	6.667	0
Sector 12	10	26.67	60	3.333
Sector 26	16.67	23.33	60	0
Sector 44	0	36.67	53.33	10
Sector 52	0	20	66.67	13.33
Chalera	53.33	16.67	30	0

Sector 105	0	40	60	0
Total	22.08	27.92	45.83	4.167

### (c) Level of satisfaction with PublicTransport

All 240 respondents reported that they were not satisfied with public transport system in Noida indicating the poor state of public transport. The degree of dissatisfaction was found to be low among most of the respondents using non-motorized means of transport as neither they were using public transport nor needed it for their daily commuting (Table 4). Respondents reporting degree of dissatisfaction to be very high was not much. However, high degree of dissatisfaction was reported by maximum respondents (108). The main reason for this wide spread dissatisfaction was lack of intra-city public transport system leading to higher percentage of people using private mode of transport which causes traffic congestion and parking problems.

**Table 4: Degree of Dissatisfaction (in %)**

Localities	Degree of Dissatisfaction			
	Low	Moderate	High	Very High
Mamura	26.67	43.33	23.33	6.67
Sector 10	60	26.67	13.33	0
Sector 12	0	20	63.33	16.67
Sector 26	0	36.67	53.33	10
Sector 44	0	23.33	76.67	0
Sector 52	0	36.67	56.67	6.67
Chalera	40	46.67	13.33	0
Sector 105	0	30	60	10
Total	15.83	32.91	45	6.25

### CONCLUSION

Urban Transport System is inadequate and unsustainable in Noida. Although there is marked improvement in inter-city transport in recent times, intra-city transport is poor. Credible intra-city transport is lacking which is clearly reflected in the result of survey. The city suffers with the problem of air pollution, noise, energy use, congestion, parking shortages, road safety and lack of mobility for poor. The city planning has neglected the development of non-motorized transport. Pedestrians, cyclists and poor are the worst sufferers. The existing transport system is not conducive to efficient functioning of the city. Development of multimodal transport system focusing on public and non-motorized transport is needed for efficient functioning and sustainable development of city.

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