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Analysis of the Transportation System of Trans Gomati in Lucknow

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ABSTRACT

The transport system is a very good policy which helps in moving any architectural or public from one place to another in any area. The transportation system works as a network, connecting towns, cities, states, and countries, in which the public has a very important contribution, and they can meet their needs and economic. Given the use of transport facilities. Transport systems or their different types of modes have a great contribution in increasing the economic development of India or other countries. Given because the increasing population in India, the government makes different plans to the arrangement of the transport system in the old city or village under the transport system, which still needs some improvement, which is explained by research Look at the private vehicles on the road, the government is providing them with a margin rate per public transport facility, but then due to some time, public transport and the economic growth of the country have a bad effect, this time is for the solution by the transport system of Trans Gomti Nagar area in Lucknow city has been analyzed.

Keywords : Land use infrastructure, Transport Policy, Traffic flow condition, Sustainable development

I. INTRODUCTION

Transportation is a system, by which the economy of any country survives, if even one day the transport and allied systems stop working, then the country's economywill collapse, transport or communication routes are a network of channels and vehicles. Whose Different People move from one place to another with different mediums and then big business takes place. Transport method or transport arrangement is such a remedy which is used in different ways in the country and other cities. In which pipelines are used for water and gas, a commodity is traded by importing and exporting, in which different means of transport are used. For development in any city, village it is very important to fix the transport system, which is done by some factors like economy, population, public demand, land use,forecast. Transportation systems analysis is a multidisciplinary field which draws on engineering,

economics, operations research, political science, psychology, management, and other disciplines. It has helped explain the techniques to examine the transport traffic changes affecting the price structure in the economy, such as the monetary consequences in each sector of the economy, their speculationprospects and, finally, the potential pace of growth. According to Professor Manheim, "The challenge of transportation systems analysis is to intervene, delicately and deliberately, in the complex fabric of a society to use transport effectively, in coordination with other public and private actions, to achieve the goals of that society." The public there use the modes of transportationaccording to your income and need. To know the speed of the transport system in any city or village, 4 points (Population, Household income, Model Split, Trip purpose) are taken into consideration which has been accomplished by research. And understood a transport system in the Trans Gomti Nagar area of Lucknow city.

Objective

- To promote their transportation facilities so that sustainability between public andtransportation is maintained.
- Its main objective is to promote the government's public transport system.
- To describe the current urban transport system and identify travel behavior of thepeople in the study area.
- To analyze the derived transport ecological footprint and visualize in spatially.

Background

The transport system in today's present time increases income growth in any urban area, so in some places where the public use their own vehicle or private vehicle to complete their journey, which leads to traffic congestion and fuel consumption, the existence of these problems has to do with not using the facilities given by the government or not having those facilities. In such a situation, by analyzing those areas in the transportation system, the problems there must be corrected, which have been explained by some good researchers.

II. LITERATURE REVIEW

Ashim Ratna Bajracharya (2008); the main objective of the research is to know the potential shift of commuters towards. The proposed BRTS from existing mode of transport and use of transport ecological footprint analysis to evaluate the pre- and post-BRTS scenarios from an environmental sustainability point of view. Thefindings support the promotion the BRTS as a footprint reduction measure some specific conclusions are-

- To identify the current urban transport system and behavior of the people in the study area.
- To variables assess the possible model shift to the proposed BRT system based on the calculated willingness of people to shift as per of predefined mode choice.
- To use transport ecological footprint as an indicator for judging the performance of the pre and post, BRT implementation scenarios with regards to sustainability.
- To analyse the derived transport ecological footprint and visualize it spatially.

Jian Yuan et al (2009); This study aims at specifying the applicability of BRT andrail transit, especially the light rail transit (LRT) A comparison work is done between the influence scope of BRT stops and that of light rail transit stations andthree level scope system established. It is concluded that the rail transit station hasa relatively larger influence scope than the BRT station. So, it is probably better to connect city centres with LRT due to its permanent investment and large influence. While for major transport corridors with a fully grown passenger flow BRT, might be more suitable.

Harold Soh et al (2010); this paper reveals, the structure and properties of public transportation networks have great implications for urban planning, public policies, and infectious disease control. In this paper, we have analysed the travel routes of the rail (RTS) and bus (BUS) public transportation system in Singapore from a complex weighted networks perspective. The analysis shows that the dynamical properties of a network may differ significantly from its topological properties. Although the paper has restricted our study to the transportation domain. Such analysis would provide richer information for complex network modelling and simulation, which is essential in a variety of researcher.

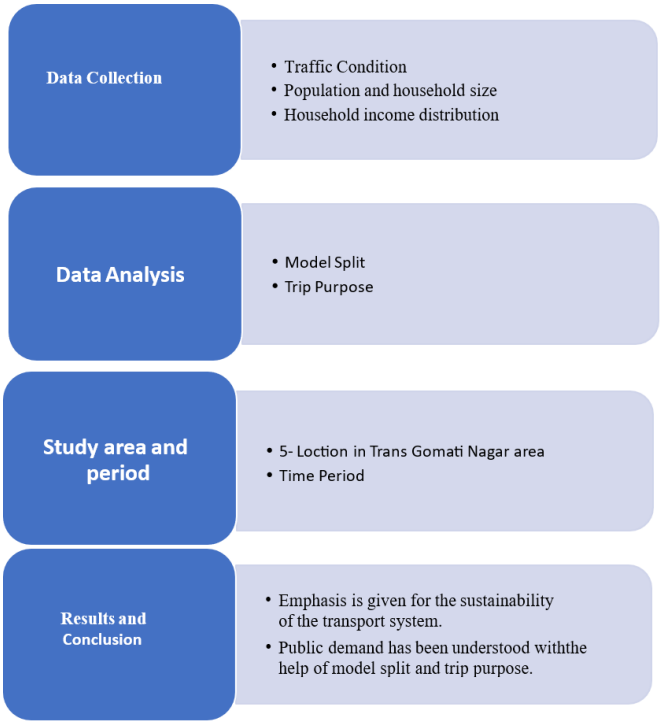
WenXin Lin et al (2012); in this paper, we analysed the difference and relation between mobility and accessibility and their urban transportation system effect. This analysis shows mobility, accessibility and empirical examples that can illustrate the spatial operational status of an urban traffic system. The terms of urban spatial layout, the central area gathers, the greatest concentration of economic factors and social activities. Play an essential role in promoting social progress and preserving the normal operation of economic system for the whole area. This will lead to excessive development intensity degradation of accessibility in some parts and a waste of space resources. We should keep the city centre's energy and ensure the rational development of the outlying areas. This approach offers solutions to problems like traffic congestion and waste of resources and helps realize sustainable development of urban area.

Zhong WANG et al (2014); as the fundamental problem in traditional LOS is auto centric but new transportation era the argent need of new LOS evolution gives anew mode of development. Which can calculate mode developed and analysed driver and passenger utility? The threshold of MMLOS and illustrated its application in a real-world scenario shows significant improvements.

ZHANG Yu et.al (2018), introducedefficiency and service effectiveness of publictransit in China the operating efficiency and service effectiveness of urban public transit in Chinese from 2010 to 2013 analysed. And the main conclusions are as follows 1st consideringthe factors that affect in efficiency. 2nd a downturn in the average operatingefficiency of public transit in central cities in China occurred from 2010 to 2013 but service effectiveness increased from 0.615 in 2010 to 0.625 in 2013. The key to improve service effectiveness with limited resources.

III. METHODOLOGY

General - To complete the research, the help of correct method has been taken, in which four parts are data collection, data analysis, study area, and location and conclusion. The research methodology consisted of four integratedtasks -These tasks are described in more detail below:



Data Collection

Traffic Condition- In this section, the traffic conditions of the transport modes of all the locations have been understood by the research according to the priority, which is shown in percentage. And it

states that the area which has a high percentage of means of transport needs to be developed further in the future.

Mahanagar

SL No.	Category-A	Category-B	Mode Priority
1	Walking	• Bi- Cycle • Tricycle	19%
2	Passenger Car	• Car • Taxi • Jeep	16%
3	Private Buses	• School Bus • Ambulance • Staff Bus	8%
4	Rickshaw	• Auto Rickshaw • Van • E-Rickshaw • Motorcycles	27%
5	Truck	• Truck-3-Axle • Tank Lorry • Tanker	12%
6	Gov. Public Transports	• Buses • Metro	18%

➢ **Vikasnagar**

SL No.	Category-A	Category-B	Mode Priority
1	Walking	• Bi- Cycle • Tricycle	14%
2	Passenger Car	• Car • Taxi • Jeep	12%
3	Private Buses	• School Bus • Ambulance • Staff Bus	11%

4	Rickshaw	• Auto Rickshaw • Van • E-Rickshaw • Motorcycles	36%
5	Truck	• Truck-3-Axle • Tank Lorry • Tanker	09%
6	Gov. Public Transports	• Buses • Metro	18%

Niralanagar

SL No.	Category-A	Category-B	Mode Priority
1	Walking	• Bi- Cycle • Tricycle	11%
2	Passenger Car	• Car • Taxi • Jeep	16%
3	Private Buses	• School Bus • Ambulance • Staff Bus	08%
4	Rickshaw	• Auto Rickshaw • Van • E-Rickshaw • Motorcycles	34%
5	Truck	• Truck-3-Axle • Tank Lorry • Tanker	18%
6	Gov .Public Transports	• Buses • Metro	13%

Aliganj

SL No.	Category-A	Category-B	Mode Priority
1	Walking	• Bi- Cycle • Tricycle	09%
2	Passenger Car	• Car • Taxi • Jeep	11%

3	Private Buses	• School Bus • Ambulance • Staff Bus	05%
4	Rickshaw	• Auto Rickshaw • Van • E-Rickshaw • Motorcycles	46%
5	Truck	• Truck-3-Axle • Tank Lorry • Tanker	13%
6	Gov. Public Transports	• Buses • Metro	16%

Jankipuram

SL No.	Category-A	Category-B	Mode Priority
1	Walking	• Bi- Cycle • Tricycle	12%
2	Passenger Car	• Car • Taxi • Jeep	06%
3	Private Buses	• School Bus • Ambulance • Staff Bus	08%
4	Rickshaw	• Auto Rickshaw • Van • E-Rickshaw • Motorcycles	36%
5	Truck	• Truck-3-Axle • Tank Lorry • Tanker	11%
6	Gov. Public Transports	• Buses • Metro	27%

Population and household size- In this section, data has been collected in all the five areas under the population and household of which is addressed by reference from the Municipalities. This data shows that there is a need to promote transportation facilities in that area.

Area	Total Population		Total Households	
	Count:	**(%)**	**Count:**	**(%)**

Mahanagar	42507	56.44	6,755	37.53
Vikasnagar	54970	46.36	8,546	28.89
Niralanagar	23290	64.84	4,623	44.62
Aliganj	74502	72.33	5,462	55.56
Jankipuram	89023	68.54	10,456	43.69

Household Income Distribution- Through this table it has been shown that the number of households with income from Rs 15000 to Rs 25000 is more inthose places, People who cannot take the help of private vehicles for daily travel, in this situation, there is a need to provide more and more government public transport facilities in those areas.

Area	Monthly Household Income (Rupees)			
	< 15000	15001-25000	25001-50000	>50000
Mahanagar	23 %	43 %	19 %	15 %
Vikasnagar	18 %	26 %	38 %	18 %
Niralanagar	21 %	36 %	31 %	12 %
Aliganj	28 %	41 %	17 %	14 %
Jankipuram	16 %	25 %	32 %	27 %

Data Analysis

In this, according to the data analysis, the purpose of traveling by the people in those five areas and the data of the model split of transportation is understood through percentage. Due to which this data will have a very important role in improving the transportation facilities in the futureand this will also understand the public demand in those areas.

Mahanagar

Model Split

Modes	Modes Split
Walking	12%
Passenger Car	25%
Private Buses	12%
Rickshaw	34%
Gov. Public Transports	17%
Metro	----

Trip Purpose.

Trip Purpose	%
Work	46%
Education	28%
Other	26%
Total	100%

Vikasnagar

Model Split

Modes	Modes Split
Walking	12%
Passenger Car	18%
Private Buses	21%
Rickshaw	34%
Gov. Public Transports	15%
Metro	----

Trip Purpose

Trip Purpose	%
Work	39%
Education	18%
Other	43%
Total	100%

Niralanagar

Model Split

Modes	Modes Split
Walking	14%
Passenger Car	21%
Private Buses	11%
Rickshaw	41%
Gov. Public Transports	13%
Metro	----

Trip Purpose

Trip Purpose	%
Work	28%
Education	16%
Other	56%
Total	100%

Aliganj

Model Split

Modes	Modes Split
Walking	21%
Passenger Car	16%
Private Buses	18%
Rickshaw	28%
Gov. Public Transports	17%
Metro	----

Trip Purpose

Trip Purpose	%
Work	36%
Education	14%
Other	50%
Total	100%

Jankipuram

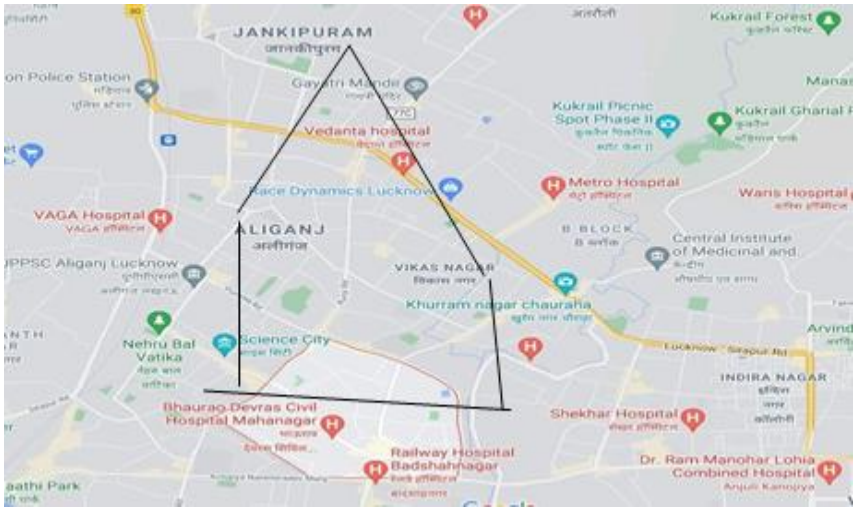
Model Split

Modes	Modes Split
Walking	19%
Passenger Car	23%
Private Buses	14%
Rickshaw	34%
Gov. Public Transports	10%
Metro	----

Trip Purpose

Trip Purpose	%
Work	46%
Education	19%
Other	35%
Total	100%

Study area and location



Lucknow, a large city in northern India, is the capital of the region of Uttar Pradesh. Whose current population is above 35 lakhs. In the middle of it is the Rumi Darwaza, which is the Mughal entrance. Nearby, the altar of the Bara Imambara of the eighteenth century has a large, angled lobby. Above, the maze is a maze of confined passageways overlooking the city from its upper galleries. Nearby, the magnificent Victorian Hussainabad Clock Tower was served as a victory block in 1881.

To understand and analyse this research, Trans Five such area of Gomti Nagar of Lucknow city was taken. This will be help convert in Lucknow City into Smart City in the future which is as follows.

- Mahanagar
- Vikasnagar
- Niralanagar
- Aliganj
- Jankipuram

Fig- 1 Site Location -1

Some methods to analyse the transportation system of these places, such as questionnaires, videography, and photos have been taken with the help of which they took one month to complete.

Fig- 2 Site Location -2

IV. RESULT AND CONCLUSION

It has been confirmed by research that there are no metro facilities in those five areas of Trans Gomti Nagar of Lucknow city. And in the traffic condition of those places, Lucknow City is thicker than other worlds, but there are public transport facilities, due to which people make their income and travel by private sector vehicles, in this public one fix near data analysis. Going metro service, Lucknow City Bus Service (JNNURM) wants to adopt rated transportation system, which facilities are given by the UPRTC. In this, transportation facilities planning will be well executed in the accounting future of the population, income, supply model and trip purpose, which will do the work of sustainability to the public environment there.

V. FUTURE SCOPE AND NEEDS

Overall, a reduction in public vehicular route can increase its sharing rate over a short time frame, although as time goes on, its similar effect will steadily decrease. During the long haul, a reduction in the public vehicle route doesn't really improve its sharing rate. Any land use will attract visits Lucknow city dwellers, and this applies when changing usage travels are also evolving. Accessibility plays an important role in changing the design of use area and higher. The level of availability indicates a high value of the land. And in the last, there will be expansion of public transport in all the areas of Trans Gomti Nagar of Lucknow City in a big way.

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