

# Literature Review on Public Transport System and Its Impact on Mobility

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**Abstract** - The literatures reviewed also suggest that the presence of an efficient public transport system creates a safe, sustainable and equitable urban mobility. This study evaluates the extent to which the public transport in Vadodara has an impact on the urban mobility of the city. This paper henceforth will dwell upon shading some light into existing realities of public transport system of Vadodara with general objective of providing solutions and suggesting measure that should be taken it play a leading role towards maximizing urban mobility.

**Key Words:** urban transportation, equitable urban mobility, congestion

## 1. INTRODUCTION:

In most of the developing countries, there are several factors that contribute to the severity of transport problems. The rapid growth of the large cities due to the growth in population coupled with increase in urbanization has posed serious challenges in developing adequate infrastructure facilities. The major transportation problems are haphazard and unplanned development at the suburban fringe with little or no provision of transportation facilities, poor public transport facilities, inadequate parking, and increasing number of vehicle these all problems has a high impact on mobility. Mobility is defined as the access of transportation. It is important in travel demand models to determine choice available to the consumer. Urban mobility refers to the efficient movement of people and goods, through efficient, environmentally sound, safe and affordable transportation that contributes to improving social equality, public health resilience if cities and productivity. Transportation and mobility are recognized as central to sustainable development since they enhance economic growth, improve accessibility and achieve better integration of the economy while respecting the environment. Better transport promotes universal access to social service and therefore can make an important contribution to consolidating and achieving development gains in urban centers.

Mobility is the ability to move, to move from one place to another. The rapid and unplanned growth in urban centers, the growing private vehicle fleet and the lack of proper planning of transportation systems have led to increasing deterioration of mobility and entailed environmental problems. Mobility can be considered as an important social resource and articulator in society, since it is directly related

to the movement of people between different socio-spatial hierarchies. So, there are factors that directly affect mobility, such as income, employment, gender, age, local transport modal type, among others.

## 2. LITERATURE REVIEW:

A review of relevant literatures covering the issue of public transport and its Impact on mobility suggests that, a heavy reliance on this mode of transport increases the efficiency of urban mobility while at the same time easing the level of congestion.

### A. Akinyemi

A new concept of mobility was introduced. It was shown that the level of mobility of a group of people is dependent on four main characteristics which are;

1. Travelling time budget of people
2. Availability of transportation modes or services to the people
3. The average speed at which the people can convey from one location to another by available modes.
4. The person carrying capacity of network of facilities.

It has also shown in Akinyemi (1997) that sustainable mobility requires, among other things, acceptable levels of environment impacts and costs of development and operation of transportation system etc. three main inferences can be made from these ideas. The first inference is that sustainable mobility is significantly transportation supply dependent. The better and more sustainable the supply characteristics of a transportation system, higher will be the level of mobility of peoples. The second inference is that current levels of people mobility in many developing cities can be said to be low and unsustainable largely because of inadequate transportation supply characteristics. The inadequacy of transportation supply in many countries manifests mainly through inadequate public transportation services, low productivity and level of ride ability of facilities and high level of transportation related environmental impacts. For example, in many cities, it is difficult to move around by any mode of transportation wit out physically and/or mentally exhausted in the process. Thousands of people wait for hours at public transportation stops while public.

Transportation vehicles are unable to get to them because they are stuck in queues on the roads. In addition, walkways are often non-existent or in very poor condition. In places where there are walkways, pedestrians are often forced to walk on the streets due to market and trading activities occurring on the walk ways. Traffic delays are ubiquitous and rides by any vehicle are uncomfortable, unsafe and expensive because of inadequate Law enforcement and presence of large crevices on many roads. Furthermore, there is little or no classification of roads in general and inadequate distributor and access roads in particular in many cities. Also, based on the results of studies such as [TRRL 1998] the efficiencies of major roads in many cities seem to range between 5 to 25 percent.

### B. Tatenda Mbara

Whether or not cities, which are hubs connecting markets such as those on labour, investment, education, commerce, recreation and health care, etc., can prosper depends, among others, on the accessibility of these markets. The accessibility, in turn, is influenced by the availability of an efficient and effective transport system. What is an effective and efficient urban transport system? It is one that can satisfy the numerous and diverse requirements of the metropolitan mobility, including minimizing travelling time between various locations, while at the same time internalises externalities to positively affect the well-being and the quality of life of the citizens of that area. Among the most apparent externalities are traffic congestion, traffic accidents and environmental pollution including climate change. The larger the metropolitan area, the greater is its complexity and the potential for transport externalities and therefore for transport disruptions. Introducing and sustaining an effective and efficient transport system is therefore not an easy but possible task. This requires that the appropriate authorities transform the available land and financial resources, both limited capital inputs, into relevant transport infrastructure and networks to provide, what is considered, the right combination between the various motorized individual or collective/public and non-motorized transport modes, as well as easy transfers between them to meet the mobility demand. In this paper they discussed about high quality service for public transport such as

- (a) Good accessibility
- (b) High reliability
- (c) Appropriate comfort, safety and aesthetics

Some of the findings in this paper are:

- ✓ Relation-ship between urban transport and road safety.
- ✓ Urban transport and environmental pollution.
- ✓ Sustainable urban mobility

### C. Mega Kumar, Seema Singh, Akshima T Ghante, Sarbojit pal, Sangeetha ann Wilson

Mega Kumar, Seema Singh, Akshima T Ghante, Sarbojit pal, Sangeetha n Wilson they have studied the existing literature to develop a robust research framework for the study and then selected five target city/city regions: Amritsar, Jaipur, Noida, Ahmedabad, Gandhi-nagar, and Sanand-Viramgam. The informal public transport modes in the five selected regions included high-capacity mini buses, medium-capacity Tata Magics, Mahindra Gios and other similar vehicles, low-capacity, three-wheeled, motorized auto-rickshaws, pedal-powered non-motorized cycle rickshaws, and other locally manufactured modes like Chakras and Kadukas.

The following key components of this informal public transport were studied.

- i. Roles and contributions of informal public transport systems
- ii. Vehicle characteristics (design and manufacture, etc.)
- iii. Ownership patterns
- iv. Operational characteristic
- v. Regulations governing the operations of the modes
- vi. Area/zone of operation
- vii. Routes and scheduling
- viii. Fare structure
- ix. Business model and profitability
- x. Concern related to safety and environmental performance
- xi. Mini bus: small bus with seating capacity of 20 people.

### 3. PROBLEM DEFINITION

Today, Vadodara is faced with huge challenges emanating from years of poor coordination between its existing *urban systems*. *Transport*, one of these components of the urban system, which is responsible for bridging the gap between areas of production and consumption, as well as creating a medium for spatial interaction, continues to be in the thick of these challenges. The lack of properly planned urban transport in Vadodara is manifested through the low degree of efficiency of urban mobility that is now observed in almost all of the city's centre, sub-centres and other major traffic corridors. Urban mobility, which is increasingly becoming inefficient in Vadodara and resulting in congestion, can be viewed as a function of various components of the urban transport system. These elements are Transport system, Traffic Management, and Transport Infrastructure.

#### 4. AIM OF STUDY

To investigate possible strategies and approaches to improve the public transportation system to play major role in creating safe, sustainable and equitable urban mobility in context of Vadodara.

#### 5. SPECIFIC OBJECTIVES

- Assess the existing transport system with special emphasis on mass transport.
- Study the problems of the system.
- Study the relationship with other supporting systems such as the existing road network, the local development plans, traffic management, and the like.
- Examine the relevance of the public transportation system in alleviating the imbalance between our transportation systems as a whole and the ever-growing urban population in the city of Vadodara.
- Come up with meaningful suggestions or solutions that can help make the public transportation system better and more efficient.

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