

Research on problems and demands dynamics of Dakar's urban transport

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The Senegalese capital city, Dakar, faces a big and intractable transportation crisis. There is an increasingly growth of motor vehicle fleet in Dakar with growing rate of over 8% per year. The city's density is very high in comparison to other African cities and is one of the best suited to the middle-range mass transit options that bus rapid transit systems offer. There are also in the Metropolitan Area a combination of urban problems, informal settlement, traffic problem, flooding etc. Though only 10% of the population in Dakar owns a car, this group of wealthy people consumes the vast majority of the city's scarce road space while the 76% of the population that uses some form of mass transit faces worsening traffic congestion. Each year, hundreds of thousands of hours of economic productivity are lost and cases of severe respiratory illness increase steadily. But demand is still very high and faces to a big problem of management.

Key Words : Dakar, urban transport, demand dynamics, transportation problem, dynamics of change, Senegal

1. Introduction

Urban phenomenon becomes big issues in sub-Saharan Africa because there is no link between their population growth and the development of economic production's capacities.

Senegal's rate of urbanisation is one of the highest in Africa, 45% and it changes from one region to another. It supposed to be 56% in 2015. Senegalese urban structure is characterised by a macrocephalic capital which alone concentrates 54% of the urban population. The urban area of Dakar (3 million inhabitants) remains the economic lung of the country. Nowadays, one Senegalese out of two is a city dweller; one city dweller out of two is living in Dakar.

The Metropolitan Area of Dakar combines urban problems caused by the rapid growth of population, illegal housing, traffic problem, flooding etc. The population density in the city is too high and the capacity for accommodating its population is too

small to catch up to develop infrastructure and maintain environment. As a consequence, random urban sprawl and deterioration of environment in Dakar become serious social problems.

Our towns are developing under the combined effect of their own population growth and the drift from the hinterland of populations hoping to find a job. This induces a more acute regional imbalance between the region of Dakar (which has long been favoured by public and private investors) and the rest of the country.

Despite some outstanding progress in terms of urban development, organization and management of cities are becoming more difficult and the majority of city dwellers still living in informal settlements.

One major consequence of this rapid urbanization is the proliferation of informal

settlements which represent over 30% of total housing in Senegal. This kind of housing is even more obvious in the urban area of Dakar (about 45%).

The access level of the urban services in the city is intrinsically linked to the geographical mobility of the users. The spatial configuration of Dakar is such as if the residential areas are dispatched in diverse places, the big urban services, workplaces and the main part of the administration are concentrated in the down town.

Roads are overused; policymakers neglected and continue to ignore the water way in Dakar's peninsula. Almost all the urban movements are done by road transport; railway system is really limited in Dakar with a capacity of 1% of the global mobility of people in the metropolitan area.

In Dakar everyone takes the same roads and for the same directions, because all is concentrated in the down town. In that situation we add the old age of the means of transport, cars, and roads even if new roads are built with the extension of the highway network. Another major problem constitutes the nonexistence of car park in Dakar, whirling around the roads to find a hypothetical vacancy place, the motorists, especially in the downtown area, are constantly, confronted with the absence of parking bays.

Every public space is exploited to be used as informal car park or using by tradesmen with barricades or quite simply struck of a prohibition of parking ever respected, a behavior which contributes to the exacerbation of the problems of the parking.

(1) Objectives

The purpose of this paper is to propose a deep analysis of problem and transportation situation in Dakar through the modal structure reform and demand dynamics.

In view of these considerations, this study pursues the following objective:

- To identify the big problem of transport system, mobility, and accessibility cha-

racteristics in Dakar City and their outgoing changes possibilities;

- To analyze demand situation, key determinants and characteristics of new dynamics in change of demand;
- To analyze the current modal structure change and identify a sustainable structure of public transport in the future

(2) Methods

a) Review of papers

This study will be undertaken from a deep literature reviewed about transportation dynamics, modal shift and demand aspects.

Official documents about transportation situation and evolution in Dakar will be also analyzed with the industrial structure and individual aspect.

b) Assessment of transport solution from other experiences

To make analysis and document exploitation, a compilation review of Mass Transit will be done reference to situation in other experiences and especially in Metro Manilla's situation.

A review of existing policy and regulatory frameworks in Metro Manilla will be carried out, along with a review of the status of access to different modes of public transport in the city.

An analysis of transport dynamics and count-measures undertaken for transport reform and sustainable solution will be also done.

c) Survey

In this part, we intend to do some survey in Dakar's urban transport to retrace demand dynamics and some change of Senegalese modal share, evolution of modal shift and management of demand. It will help us to better understand the link between the big problem of demand and the modal structure change in Dakar.

2. Public transport structure and organization

In Senegal, local governments are not usually involved in urban transport as this is considered to be the task of the national government; the law on decentralization excludes urban transport.

In 2007, Dakar counts 23.693 cars, which mean 80% of the national car fleet which counts 29.725. Regional service of the surface transports registration number on average 65 vehicles per day. The vehicles of the private individuals are 66.49% of the car fleet in Dakar.

In the metropolitan area, the urban transport is ensured by the buses (“Dakar Dem Dikk”), the minibuses (urban “AFTU”, “Car rapides”, “Ndiaga Ndiaye”) and the urban taxis.

Conventional bus services are currently operated by Dakar Dem Dikk (DDD), a company created in 2000 by Senegalese national government and private local interests with a fleet of second hand vehicles, with the intention to purchase additional new buses.

But the situation deteriorated in 2003 and 2004 so that very few vehicles were operated daily — officially 45 vehicles for public transport and 15 vehicles for specialized transport. In 2007, the urban bus company “Dakar Dem Dikk” counts a park of 408 vehicles divided into 17 lines. The network of cover counts 987 stops.

There are around 2,500 to 4,000 smaller buses, known as *cars rapid*, with between 25 and 40 seats. The *cars rapid* are not managed by their owners. The driver, who pays the owner a fixed sum of money daily, is responsible for the operation of the vehicle, which can be allocated to a route and a terminal managed by the drivers’ unions.

Terminal controllers may suggest to the drivers what is the best route depending to the state of the demand and the period in the day, and thus play a key role in the management of the system. The political power of unions is very strong so that it can be difficult sometimes to make reform.

2.077 urban taxis are repertoires in the region of Dakar. The interurban taxis are 64. The interurban autocar are 356, which mean 1.5% of the car fleet. As for the urban minibuses “Ndiaga Ndiaye”, they are 234, or 0.98% of the park.

3. Perceived problems

The public transport service is really bad and is deteriorating from year-to-year. To go to work place every morning, it is necessary either to get up early, or to have a patient of hell; it is difficult to move in Dakar by public or private transport because of the congestion encountered on the main roads, especially in the central city area.

Cars used to be blocked in road spaces and create monsters congestions at every hour of the day. 7:00 to 21:00, the Dakar roads never empty. The congestions we can find every hour (and even until the evening) on the road while leaving or coming back home are a real torture.

Most of cars rapides and Ndiaga Ndiaye are concentrated on the routes from suburbs area to the center of Dakar, and the supply is insufficient on the other routes. Supply is also judged insufficient in off-peak periods.

The capacity provided by the formal bus company is very low (about 3%), so that the frequencies of buses are very low and irregular.

According to many observers, the quality of service is really bad. In particular, the service provided by cars rapid and Niaga Ndiaye is characterized by old vehicles, bad maintenance, polluting vehicles, poor safety standards, drivers stopping anywhere on the street to pick up passengers, intimidation by controllers, the practice of cutting routes, obliging users to pay two or three times the fare for one trip, poor route information, long waiting times, vehicles turning short of their stated destinations, and risk of robbery inside the vehicles.

In this statement, appear two big problems: the management of public transport, the demand dynamics and the change of current modal structure towards sustainable way.

4. Expected results

With this study, we expect to know about the modal shift situation and the evolution of modal structure change started in Dakar. This will help us to know about the management of this change from the big problem of demand side. It will appear also after this study the difficult transition from traditional aspect of many operators and the industrial structure of intermediate or few operators.

After all, we will be able to determine how to manage the transportation problem through demand side for the future and how to bring existing modal structure towards sustainable structure of public transport in the future.