

RECENT TENDENCIES OF THE GROUND MOBILITY IN MEXICO AND ITS EFFECTS IN THE SUSTAINABLE DEVELOPMENT

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This paper evaluates the recent evolution of the ground mobility of travellers in Mexico. There are many factors that condition the mentioned evolution: the demographic and economic development, the ratios of motorization, the improvement of the accessibility, etc.

Then, in the first place, we insist on a series of factors that have stimulated mobility in the last years. These factors we have synthesized them in physicists and humans. However, we must emphasize that, generally, a factor isn't single the one that is constituted like conditioner of a certain model of mobility, but the conjunction of all of them, although can prevail some.

This way, the different territorial units in which the country is conferred, have come making difficult the construction —and later conservation—, of transport infrastructures and, although these have been possible with the advance of the technique, specially in the construction of tunnels and bridges, the budgetary injections to overcome these adversities, have been very great. Once constructed the infrastructure, the unevennesses in broad strokes persist and it is pronounced in a remarkable increase of the transports, translated in power costs, of amortization of the vehicles, etc., affecting completely to the competitiveness of the Mexican economy. It is agravated because a great part of its population is located in the center of the country, to than 2,000 meters of altitude, affecting as we say, a remarkable power cost (economic and environmental) for the transport more.

On the other hand, also we do reference in this paper to the rich social and demographic evolution of Mexico in the last years, although it is very difficult to synthesize it in few lines. As it is evident, these parameters have repelled in the mobility of people and merchandise. However, in the article we approached the main parameters that have affected this state of the question: development and demographic structure, the concentration — dispersion of the population and the economic activity, the distribution of the income by federal organizations and, among others, the remarkable increase of the accessibility and the indices of motorization.

This way, it is detected that the Mexican population has been increased in 100 % in 29 years, is to say between 1970 and 1999, and all it in a context of strong emigration. Also it is truth that the increase rate has been contained in relative terms —and until in absolute numbers—, despite the superior potential of the population to reproduce whichever greater volume presents. This way, between years 2000 and 2005 —and in absolute numbers—, the population has grown to a rate of 1,2 million people every year, as opposed to 1,6 million of the previous decade with smaller population. Therefore, in 2003, the Mexican population surpassed for the first time the 100 million inhabitants. However, more than 1/3 of the Mexican population, one was based in the 2005 in single 5 % of the territory (denominated one: Metropolitan zone of the Valley of Mexico). Is deduced then the demographic HD, of economic activities and in infrastructure general of all type, that entails the high concentration of the ground mobility of the country in this small portion of space located in the center of the country.

Another factor in that we make special reference is the one of the high youth of the population, whereas stimulating of mobility, because still in 2000, more than 1/3 of the population it less had than 14 years, and single 5 % more than 65 years (in front of some countries developed with more of ¼ of the population aged and therefore with smaller mobility in these ages).

On the other hand, the economic indicators of the GIP, employment and income, corroborate the thesis of which to the greater contingent of population located in the center and main axis Center-North of the *Free Trade Agreement of North America: Mexico-Monterrey-Nuevo Laredo*, correspond higher economic parameters to him. This fact is urging that the population of this territory more and more moves in terms to per capita. It's then in the great regional runners, but mainly in the mentioned ones, where it is concentrated around 60 % of the ground mobility of the country.

Another very important indicator of the high recent mobility in Mexico, is the one of the motorization index. In effect, this one has known a very important rise in the last years. In fact, in 12 years (1990-2002), this one has increased 120 % to national level, arriving at almost the 250 vehicles by 1,000 inhabitants.

Therefore, in this context —and in broad strokes—, the ground mobility of travellers in Mexico has known a fort raises years in the last. Thus, between 2004 and 2005, mobility increased 5 % almost, whereas the single population did it in little more of a 1 %. This is, between 1995 and 2004, mobility increases considerable 45 %. Nevertheless, the use for example of the public transport in Mexico D.F., descends almost as much as the previous number.

The causes of this model are multiple, but mainly it would be possible to insist on the progressive facility to buy a vehicle, in addition to the territorial arrangement with the creation of great commercial surfaces in the periphery of the main agglomerations, without forgetting the distant residential planning the center loss or, even, very low density. In this context, the implantation of a public service of transports with a minimum yield is practically impossible. But the problem, mainly in the cities, to respond to this increase of mobility where everything begins to be remote —and, therefore, to expenses completely of captive ways of transport of the fossil energies with all its consequences—, is that the routes are

practically impossible to extend, unless is chosen to superpose them since it has happened in some runners of Mexico D.F., although with an evident economic and environmental cost.

The alternative towards one more a more sustainable mobility in compatibility with the socioeconomic development of the country, must be conditional then of these three key points:

1. Tending performances to avoid the indiscriminate construction of new infrastructure for the mobility of vehicles of low occupation, being applied studies of environmental impact when it doesn't exist alternative to a saturated route.
2. Performances in transport, fomenting mainly the public transport, in the sense to provide one better accessibility to him (at least physical and economic); introduction of programs of shared private vehicles; implantation of tracks for vehicles with high occupation; construction of great parkings in the outskirts in coordination with shuttles towards the main districts; consideration of the railway way of discharge — or moderate speed between the main populations of the country; efficient application of the intelligent systems of transport; promotion of the intermodality, mainly for the merchandise, thus to increase the short sea shipping, and thus to avoid the transport of these by highway with all its consequences (power consumption, deterioration of the pavement and risk of accidents among others), etc.
3. Performances in territorial planning with object to approach the distances that the *diffuse city* has moved away. This performance is even more important that the previous ones, because in her is great part of the increase of present mobility in the Mexican cities, with implications of elevated power consumption, dense traffic, etc.

Really, the socioeconomic development that has experienced Mexico in the last years and of which we must be to cheer, has entailed a heavy load from the perspective of mobility. However, its ground mobility is a challenge more sustainable Mexico doing, non single by environmental questions, but also economic, since the progressive increase of the fossil energies and the exhaustion of the own reserves, are going to seriously condition the development of the mobility of the citizens in the future, as well as its foreign trade, one of the main bastions of the Mexican economy in the last years.

