



Mobility in urban center

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ABSTRACT

Nowadays, movement is omnipresent, at the heart of our society. People travel for their hobbies, their work and the distances travelled are bigger today than yesterday. So a good management of the mobility is essential in cities like Lyon in France and Lisbon in Portugal.

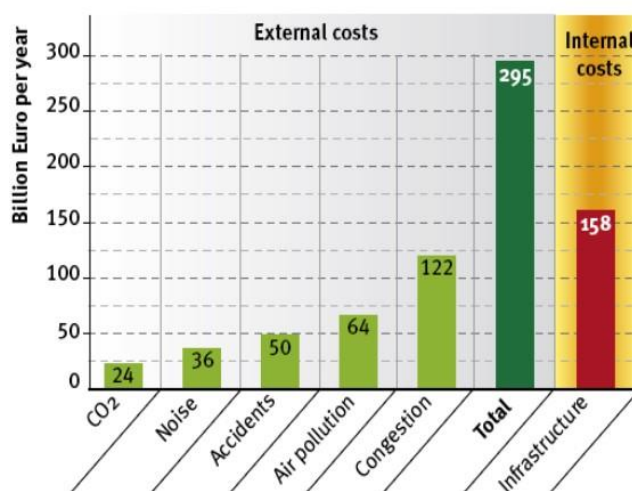
The variables are numerous and the stakes increasingly important, especially since the invention of the car in the 20th century. Indeed, the development of cars during the previous century led our cities to be congested, polluted and less and less pleasant to live in. Moreover, the invention of the car has led to the phenomena of urban sprawl.

The purpose of this work is to analyse Lyon and Lisbon, evaluate the quality of the mobility and explain why one of the both cities was more successful in organizing mobility than the other. By this explication and the advices formulated, we can define how to organize the mobility from the decisional sphere to the offer proposed and to answer the following question: How can we reduce the impact of the car in urban centers by other alternatives?

KEYWORDS : Urban mobility, Lisbon, Grand Lyon, automobile, alternative transport.

I- INTRODUCTION

Throughout the second half of the twentieth century, the number of cars has increased throughout planet, until becoming the main mode of transportation. But the increasing use of cars has led to air, visual and sound pollution in our cities. Despite the proven harmful aspects of the car, it is difficult to fight against this hegemony of the automobile.



Graph 1: Comparison between investments and indirect costs cause by the cars in Europe (2006) (Source : Nunes da Silva, 2010)

Nevertheless, aiming for a relative decrease in the use of individual car seems to be the best choice. To do this, it is necessary to propose an attractive alternative offer, develop a good information system in the cities, and search for the adhesion of all the people to the common project.

In this report, the alternative offers of Lyon and Lisbon were analyzed and the causes of the findings explained. This report goes beyond transport offers, and studies the emergence of the car in the 20th century in these both cities. The difference in the development of the car during the 20th century explains in part the poorer management of mobility in Lyon than in Lisbon.

The political organization of mobility management in both cities were analyzed as well, including the presentation of a central body in Lyon: the SYTRAL. It is largely the political organization that differentiates Lyon from Lisbon and is the main cause of the difference in efficiency between the two cities.

II- PRESENTATION OF THE FINDINGS

The study of mobility management in the cities of Lisbon and Lyon shows a number of findings. These observations can be summed up as follows: "Lyon has been more successful in controlling mobility than Lisbon" despite the common objective of reducing the rate of car users in the city. Effective mobility management is totally dependent on the establishment of an intermodal network on a wider territory than a single city, even if this city is a big city like Lisbon and Lyon.

In Lyon, mobility is studied on the territory of SYTRAL, a group of 293 municipalities, a territory larger than the Lyon metropolis. In Lisbon, the reflections are carried out on the scale of the city of Lisbon in large part and slightly on the whole of the metropolitan area. Moreover, the mobility actors, despite a smaller study area, are more numerous in Lyon than in Lisbon. Some transport companies belong to the state and others to the municipality. Furthermore, no grouping of actors exists in order to reflect mobility with an objective of intermodality in Lisbon, whereas this is the case in Lyon.

Finally, the rate of use of private cars decreased significantly in the metropolitan area of Lyon between 2006 and 2015, from 49.2% to 42%, whereas an increase is noticed during this same period in Lisbon.

	2006	2015
Individual car	49,2	42
Public transportation	16,1	19
Soft modes	32,5	36
Others	2,2	3

Table 1: Modal comparison between 2006 and 2015 in Lyon (Source : SYTRAL,2016)

	2001	2011
Total travelers	283400	267722
Individual car	35%	45%
Public transportation	40%	35%
Soft modes	23%	19%
Others	2%	1%

Table 2: Modal evolution of internal travelers in Lisbon between 2001 and 2011 (Source : Madalena Sottomayor Machado Costa e Silva, 2015)

	2001	2011
Total travelers	382030	364523
Individual car	42,00%	46,00%
Public transportation	54,00%	53,00%
Soft modes	0,47%	0,69%
Others	3,53%	0,31%

Table 3: Modal evolution of incoming travelers in Lisbon between 2001 and 2011 (Source : Madalena Sottomayor Machado Costa e Silva, 2015)

	2001	2011
Total travelers	35326	38719
Individual car	65,00%	74,00%
Public transportation	32,00%	24,00%
Soft modes	1,57%	1,03%
Others	1,43%	0,97%

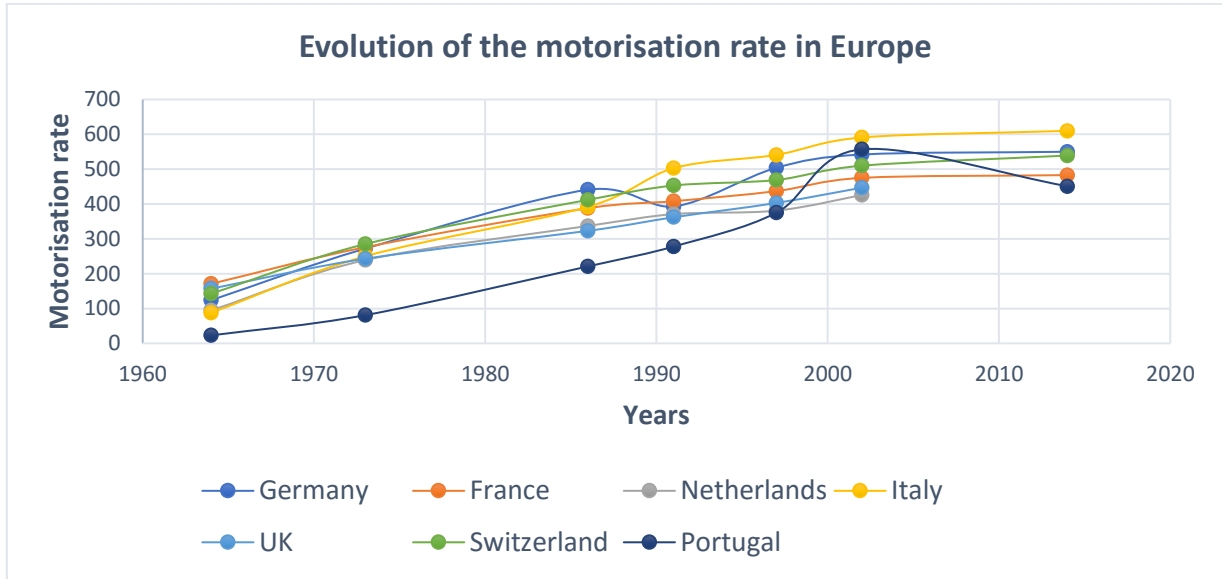
Table 4: Modal evolution of outbound travelers in Lisbon between 2001 and 2011 (Source : Madalena Sottomayor Machado Costa e Silva, 2015)

III- CAUSES ANALYSIS

1) A development of the car delayed in Lisbon compare to Lyon

Historically the car developed earlier in Lyon than in Lisbon. Lyon throughout the 20th century had time to experiment with the limits of the development of the automobile in town. Thus the management of the car was spread out over a century, while in Lisbon the development of the car was a rapid phenomenon spreading over less than half a century. Thus, like any rapid phenomenon, management was more difficult.

In general, the car was developed earlier in some European countries like France or Germany than in others like Portugal or Italy



Graph 2: Evolution of the motorisation rate in Europe (Source : valeurs avant 1986 : Fernando Nunes da Silva, 1990) (Source : valeurs après 1986 : Eurostat, 2017)

2) A unique administrative decision-making organization in Lyon

The management of mobility is complicated because it presupposes the definition of a territory of reflection. Thinking on the scale of a city or a commune was possible before the invention of the car because the cities were dense and less spread out on the territory. However, the automobile has led to a dedication and sprawl of cities and the installation of homes on the outskirts of cities. Lyon understood this need to reflect on the scale of a "mobility basin" and to create the SYTRAL in 1985. The SYTRAL is the organizing authority of the transports grouping 293 municipalities of the Lyon region.

	Belongs to SYTRAL	Doe not to SYTRAL
Underground	X	
Bus et Trolleybus	X	
Tramway	X	
Peripherals bus	X	
Regional trains		X
River shuttle		X

Table 5: Responsibilities of the SYTRAL

In Lisbon, a temporary experiment on the occasion of the creation of the "Transport of Lisbon" brand, supposed to regroup the subway management company, that of the buses and trams, as well as that of the river shuttles. However, this grouping was arrested there a little, and witnessed the failure of an initiative very important.

It is essential in regions such as Lisbon and Lyon that the objective is to reduce the part of the car in the modal relationship, to create a single decision-making body for the whole territory so that mobility can be organized according to a vision of " inter-modality.

In Lisbon, the number of mobility actors is too large for the policies to be effective, furthermore too much of the modes of transport are still under the responsibility of the state and the possibility of being municipal.

	State	Municipality
Metropolitano de Lisboa	X	
Carris		X
CP	X	
Vimeca	X	
TST	X	
Transtejo & Soflusa	X	

Table 6: Entities of transport of Lisbon

IV- CONCLUSION

In the process of development of the automobile, we can distinguish several phases. The period prior to the First World War corresponded to the discovery of a new mode of transport. Then, the period between the wars for Lyon is marked by the confrontation of the automobile system with the rest of the urban activity. The result is an automotive regulation, a mode of transport that has entered into habits and a consolidation of automobile mobility in our societies. The years 1960-1970 corresponded to the development of mass car traffic in Lyon until the crises of the 1970s, at the time in Lisbon on the emergence of this new means of transport, following the democratization of the country in 1974 and the subsequent accession to the EEC in 1986. The investments are mainly in the service of the automobile at that time. Then in the years 1980-1990 in Lyon and 2000 in Lisbon, a

collective consciousness begins to emerge with a more sustained development of urban mobility and a reorientation towards equity of investments for all means of transport.

Lyon created the SYTRAL in order to centralize the objectives and organize mobility on a larger territory. In Lisbon, priority should be given to the creation of an intermunicipal decision-making organization such as SYTRAL, in order to reflect mobility throughout the metropolitan area of Lisbon. A posteriori, it is necessary that only the train be nationalized, while the subway becomes a civil liability, as it had been envisaged. It is only on the basis of the reality that Lisbon gets more effective in terms of the political orientations it will choose.

Nowadays, the renewal of the generations is in line with this awareness of the need to respect the environment in its uses, and especially in the context of urban travel. Unlike previous generations, for those who own a car was a signal of independence and social success, young people today are much less inclined to own their own car, taking into account their costs of use and 'interview. Younger generations are more likely to move towards carpooling, renting a self-service car, or making the best choice using mobility advice sites.

Thus, the mentalities of the new generations are conducive to the development of "soft" mobility and politicians have also had this awareness.

The implementation of an efficient and equitable mobility will therefore be easier with time, provided that the legal framework essential to this success is implemented, following the example of the Lyonnais model, in cities and regions of the " Scale of the White City.

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