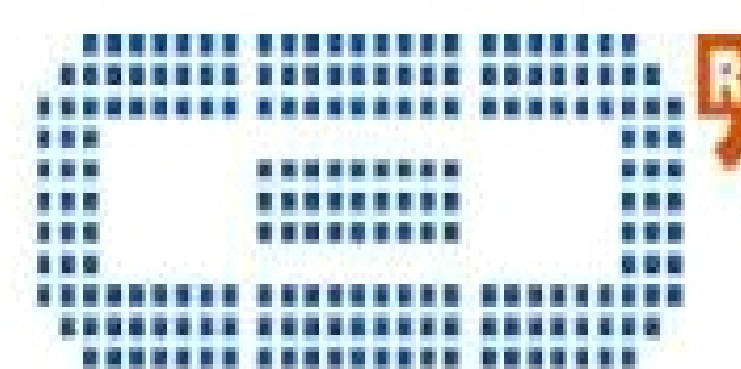




# PATTERN ANALYSIS OF TRAFFIC MORTALITY IN TWO CONTEXTS: DIFFERENCES BETWEEN BRAZIL AND SPAIN

Ana Carolina Soares Bertho - Universidade Estadual de Campinas (Unicamp);  
Juan Ant3nio M3denes - Universitat Aut3noma de Barcelona (UAB);  
Tirza Aidar - Universidade Estadual de Campinas (Unicamp)



Centre d'Estudis Demogr3fics

## INTRODUCTION

The concern about traffic fatalities is present in the whole world, because those deaths could be avoided. The continuous increase in motorization as well as traffic mortality in emerging countries suggests that emergency measures should be taken in order to increase traffic safety. In higher income countries, traffic fatalities are stagnant or even decreasing, even though motorization (number of vehicles per persons) is still increasing.

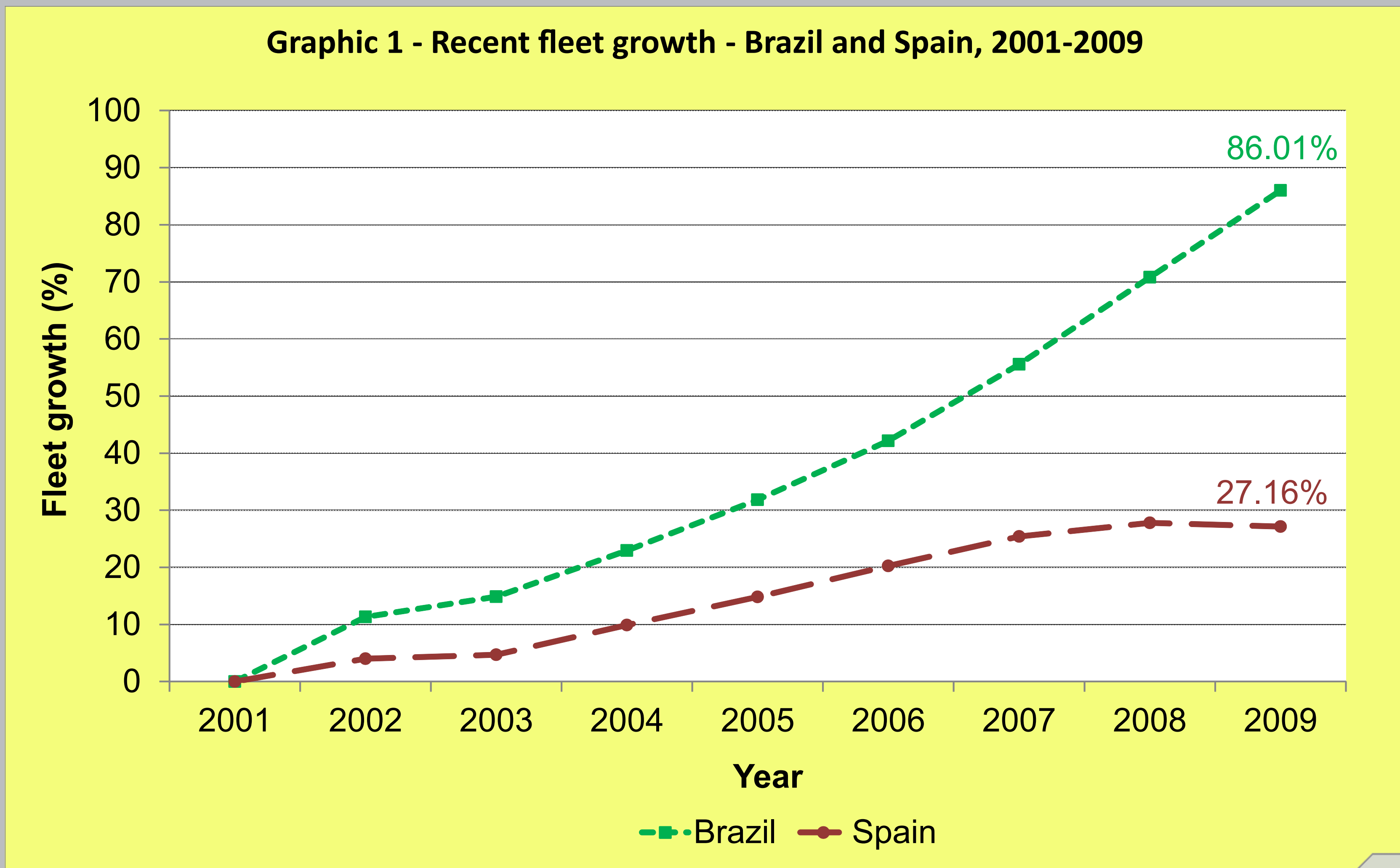
## OBJECTIVE

To analyze the temporal dynamics of traffic fatalities in Brazil in comparison with Spain. These countries were chosen to evaluate the contrast in the profile, and its change in time, of the victims of traffic accidents in a developed country and other developing, with different approaches in their public policies investments

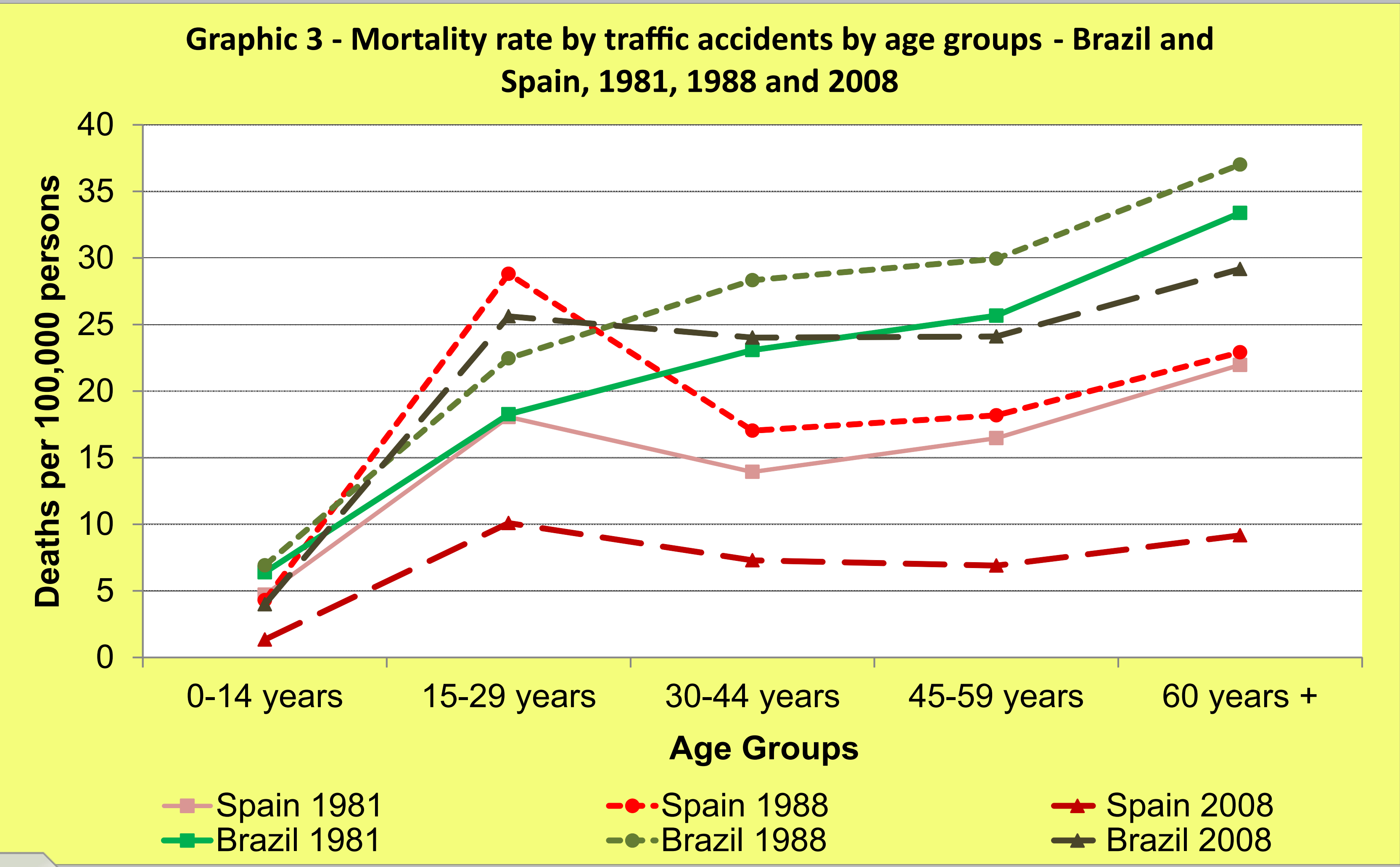
## MATERIALS AND METHODS

- Data from deaths by traffic accidents occurred in Brazil and in Spain from 1980 until 2009.
- Between 1987 and 1995: selected deaths were those with the code E471 from ICD-9.
- Between 1996 and 2009: selected deaths were those classified as V01 to V89 according with the ICD-10, excluding the codes V05, V81, V82 and V88.
- For Brazil, mortality data was obtained from SIM/DATASUS and population data was from IBGE. For Spain, both data were obtained from INE.
- For each year, a three-year average data was used to calculate the rates. As a result, the analysis ends in 2008 - although data was collected until 2009.
- Data was standardized by the Spanish population in 1981.

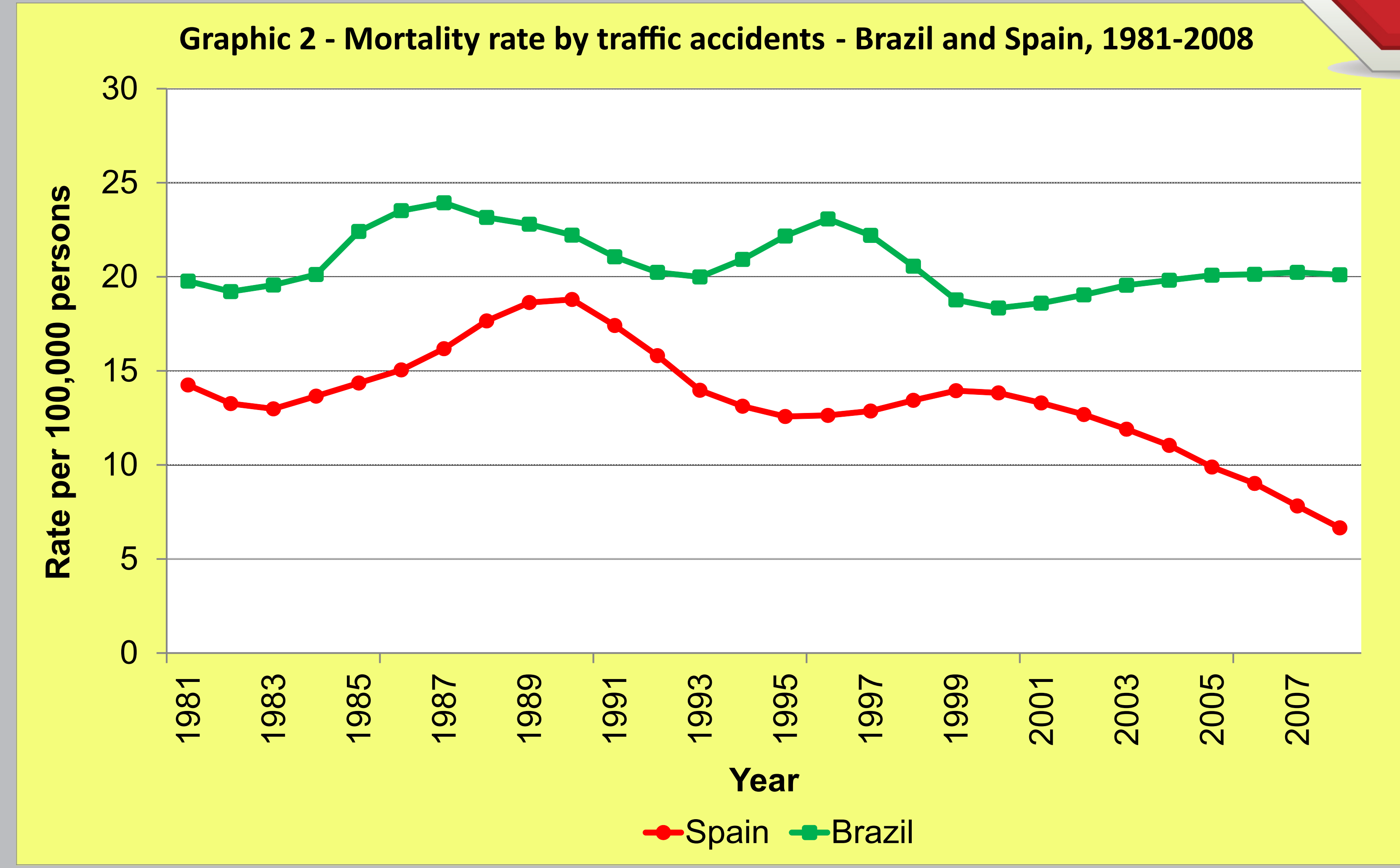
## ANALYSIS



Source: SIM/DATASUS; IBGE; INE. Prepared by authors.



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Source: SIM/DATASUS; IBGE; INE. Prepared by authors. Rates standardized by Spanish population in 1980.



**Traffic mortality rate by road user and age groups - Brazil and Spain, 2008**

	Pedestrians		Motorcyclist		Other victims	
Age groups	Brazil	Spain	Brazil	Spain	Brazil	Spain
0-14 years	1.68	0.43	0.05	0.01	3.99	1.33
15-29 years	3.05	0.57	9.59	2.53	25.62	10.09
30-44 years	4.73	0.79	5.48	1.42	24.01	7.29
45-59 years	7.20	0.98	2.79	0.65	24.11	6.90
60 years +	14.07	3.21	1.28	0.36	29.16	9.17

Source: SIM/DATASUS; IBGE; INE. Prepared by authors.

## DISCUSSION

The profile of victims by age groups shows that in Spain the age group 15-29 years old stands out, and in 1988 the Spanish rate was even higher than the Brazilian one (Graphic 3). But since then, the traffic fatality is falling down at all age groups. This shows changes in the behavior of the whole society.

Some authors (1) defend that three factors contributed this decrease: the creation of penalty point system; the intensification of surveillance measures and penalties; and the publicity given to issues related to road safety given in the means of communication. It's also important to consider the increase of the highway network: from 1980 to 2008 the extension of Spanish motorways and toll ways rose from 1,933 km to 14,554 km (3). Those highways, widely used for metropolitan and long distance travels, are safer than conventional roads.

In Brazil, there is a demand of over 90 billion dollars in road infrastructure (2). The new Traffic Code presented good results in the first years, but in the beginning of 2000's the mortality by traffic accidents increased again. In 2008 was created the "Dry Law", which became stiffer in 2013. In 2011, the Brazilian government created the National Pact for Reduction of Road Traffic Accidents – Pact for Life, with the aim of halving the number of deaths per year until 2020.

## CONCLUSIONS

The Spanish experience in reducing mortality by traffic accidents shows that it is possible to impact all age groups with investments and changes in law. Brazil did changes in Traffic Code, but the results were limited and there is an important deficit in infrastructure. Recently were created new laws and campaigns to increase road safety. The results of this and other traffic security policies adopted in this country may be evaluated in a few years.

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