

## The main causes of road accidents in Algeria Les causes principales des accidents de la route en Algérie

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### Abstract:

Algeria, like other Arab and African countries, suffers from the problem of road insecurity which causes physical and material damage, resulting in tens of thousands of incidents (43,777 accidents in 2004), resulting in thousands of deaths and tens of thousands of injuries each year (about 15 dead and 200 injured per day). In addition, it is estimated the material losses à more than 75 billion Algerian dinars per year, according to the Ministry of Transport estimated for the year 2009. The causes of traffic accidents are related to humans, transport and the environment. Generally, The human being is often blamed for being the main cause of accidents with speeding, dangerous driving and failure to respect the safety distance.

**Keywords:** Traffic crash, death, number of injured, causes of the accident, the transport direction.

### Résumé :

L'Algérie, comme les autres pays arabes et africains, souffre du problème de l'insécurité routière qui cause des dégâts physiques et matériels, entraînant des dizaines de milliers d'incidents (43 777 accidents en 2004), entraînant des milliers de morts et des dizaines de milliers de blessés chaque année (environ 15 morts et 200 blessés par jour). En outre, il est estimé que les pertes matérielles à plus de 75 milliards de dinars algériens par an, selon le ministère des Transports estimé pour l'année 2009. Les causes des accidents de la circulation dues aux : facteur humain, au moyen de transport et au facteur environnemental. Généralement, le facteur humain est toujours le déterminant principal de l'accident par l'excès de vitesse, la conduite dangereuse et le non respect de la distance de sécurité.

**Mots-clés:** Accident de la circulation, décès, nombre de blessés, les causes de l'accident, direction des transports.

### I. Introduction:

The World Health Organization (WHO) estimates that road traffic crashes cause over 1.2 million deaths and probably more than 25 million severe injuries per year.

Moreover, the WHO's Global Status Report on Road Safety states that over 90% of the world's fatalities on the roads occur in low and middle income countries, although these countries only have about 48% of the world's registered vehicles.

The WHO anticipates, unless immediate action is taken, that over the next 15 years, the number of people dying annually in road traffic crashes may rise to 2.4 million. The increase will probably entirely occur in low and middle income countries and road traffic injuries will become there one of the three major causes of death. Globally, road traffic injuries are already today among the three major causes of death for the age group 5 to 44 years (WHO, 2009).

The main causes of crashes are: speed, dangerous driving and failure to respect the safety distance.

The aim of this present article is the study of the main causes of accidents in Algeria, We will present some important studies with the research problem and the hypotheses, then we will identify the different sources of data, as well as the methods of data analysis, then follow the final analysis of the data obtained, and the conclusions.

## **I.1 Some previous studies & research problem:**

### **I.1.1 "Macro-geographical aspects of road accidents: Quebec-Belgium comparison test"<sup>1</sup>**

The purpose of the study is to demonstrate, by comparison, that the spatial structure of road accidents is independent of the country in which the phenomenon is measured and that only the scale factor is a difference. The spatial entities chosen for this demonstration are Quebec and Belgium. The spatial structure of road accidents is modeled and compared on the basis of three variables to be explained and four potentially explanatory variables, defining 52 Belgian districts and 97 regional committee municipalities (RCMs) and urban communities in Quebec. The results show some similarities in the spatial structure of crash density, accident rates and mortality rates and a difference in the spatial structure of the engine. In Quebec as in Belgium The population density is a good predictor of crash density and mortality rates.

### **I.1.2. Geographic variations in the severity of road accidents in the RCMs of Quebec, 1985-1987.<sup>2</sup>**

The description of the accident and accident rates made it possible to highlight the spatial variation in the phenomenon of road accidents in rural areas and small towns in Quebec. Thus, the number of victims per vehicle involved is higher in rural RCMs. Accidents measured in proportion to the population and vehicles in circulation, their number is high in the peripheral MRCs but also in the MRCs characterized by a major urban center, however remote from the large urban communities.

In addition, accidents reported along the length of the road network are more numerous in both remote RCMs and in more urbanized RCMs and / or located on the direct periphery of urban communities.

The factor analysis made it possible to synthesize the six accident rates and ratios into two factors, respectively reflecting the importance of the victims, thus isolating the Montcalm RCMs,

The Magdalen Islands, Pontiac, Mirabel and Matane and the rarity of accidents associated with Etchemins MRC. However, the advantage of this last factor lies in the fact that, interpreted in the other direction, it makes it possible to identify RCMs characterized by a large number of accidents, namely the Mirabel RCMs, the Pays-d'en- Haut, The Laurentians, Vallée-de-l'Or and Pontiac.

In the final analysis, regionalization bases these two factors into a single component defining the severity of accidents. Just over one-third of all RCMs (39) are associated with a high or very high accident severity. Some of these are scattered throughout Quebec; others, on the other hand, literally form blocks in which accidents are frequent and the victims numerous.

The RCMs associated with a very strong or very serious accident share in common their low percentage of population living in urban areas and therefore their rural character. In fact, in all cases, this percentage is lower than the average of 93 RCMs in Quebec, which is 65.93%. In contrast, RCMs associated with very low or low severity of accidents are distinguished by their distinctly urban character: most have a proportion of the population living in urban areas at the same level or higher than the average RCM.

The inversely proportional link established between the severity of the accidents and the proportion of population living in urban areas and consequently the density of population constitutes a track in this direction; in fact, the higher the proportion of people living in rural areas, the lower the population density and the looser human habitat, the higher the speed and road speed. Studies have shown that speed is a factor that increases the severity of accidents. Another element of response can be provided by the very nature of the environment studied, ie the rural environment characterized by the presence of small and medium-sized cities. In this type of environment, there is a wide variety of population densities, ranging from very low in the countryside to relatively high in the center of small and medium villages and towns.

These varying densities are therefore matched by a wide variety of allowable and practiced speeds ranging from 50 km / h and below to 90 km / h and higher. However, it is shown that the difference between the speeds practiced more than the speed itself is at the origin of accidents and more particularly accidents involving more than one vehicle.

### **I.1.3. Detailed report on traffic accidents recorded in 2010 by the National Center for Prevention and Safety of Roads.<sup>3</sup>**

The national center for prevention and safety across the roads collected all the data on traffic accidents according to a spatiotemporal distribution followed by graphical and analytical presentations.

**I.2. Research problem:** Road accidents involving deaths and injuries, serious or light, have for some decades been a social problem whose costs are estimated annually by billions of dinars. According to the report of the World Health Organization (WHO) for the year 2009 on the state of road safety in the world, it was recorded more than 1.2 million dead and 50 million injured during of the year 2007, as also reported in the report that almost 90% of the total worldwide traffic deaths are in low- and middle-income countries, and this percentage continues to rise with lower rates in high-income countries.

Despite the new reforms of the specialized regulation of traffic accidents, Algeria suffers from this phenomenon, hence our purpose: a statistical and analytical study of the main causes of traffic accidents in Algeria.

Referring to previous studies, several identified questions will guide our thinking on the subject as follows:

- What are the main causes of traffic accidents in Algeria? And what are the effects on lethality?

## **II– Methods and Materials:**

**II.1. The method:** After obtaining the data needed for the research from the organizations concerned, we entered all the information in the form of Excel tables, for analysis and processing by the SPSS statistical software.

### **II.2. Source of data and methods of analysis**

The main sources of data are:

- **Transport Directorate of Batna wilaya**

The direction of transport located at the new administrative city, road of Biskra. It is created by Executive Decree No. 381/90 issued on 24 November 1990,

The building consists of a 32 offices divided into two (02) departments: Civil Aviation Service and Weather and Administration Office means. Land Transport Service.

- **Directorate of Civil Protection of Batna Province**

The missions of the DCP are included in the document "Instruction Relating to the Organization and the Definition of the Missions of the Structures of the Directorate General of Civil Protection" of 1st June 1992.

#### Organization

The organization of the Directorate General of Civil Protection is set by Executive Decree No. 91-503 of 21 December 1991.

The central administration of the Directorate General of Civil Protection includes the following inspection services and structures:

- the prevention department,
- the direction of the organization and the coordination of the relief,
- the management of the personnel and the training,
- the logistics and infrastructure department.

The details of these structures are given in Executive Decree No. 91-503.

- **Ministry of transportation**

is a government ministry of Algeria. Its head office is in El Biar, Algiers.

DACM serves as the civil aviation authority and the authority for investigation of accidents and incidents.

**III- Results and discussion :** In this section, we analyze the data obtained, and present the results obtained due to traffic accidents according to:

The main cause of the accident.

on the road network. According to the 2012 statistics of the national center for prevention and road safety, which relied on the accident report of last year, the human factor is the first cause of road accidents with 11,861 accidents out of a total of 12,358, a rate of 95.98%, followed by vehicle condition (2.36%) and condition of road infrastructure and weather conditions (1.66%).

Regarding the human factor, speeding represents the biggest cause of accidents with 2,671 cases (21.61%), followed by the inattention of the driver in the neighborhoods (1,625 accidents), or 13.15%, and dangerous exceedances (787 accidents), or 6.37%.

Among the accidents caused by the bad condition of the vehicle, the defective tires caused 128 accidents, ie 1.04%, the defective braking (75 cases), or 0.61%, and the mechanical defects (52 cases), ie 0, 42%.<sup>4</sup>

### **The causes of traffic accidents in Algeria**

The causes of traffic accidents are related to humans, transport and the environment. Generally, the human being is often blamed for being the main cause of accidents, but the services concerned do not try to find out what causes him to react as well. on the road network. According to the 2012 statistics of the Algerian National Center for Prevention and Road Safety (CNPSR), the direct causes of road accidents are linked to the human being up to 90.64%, by means of transport (5.09%) and the environment with 4.27%. While the year 2011 observed 92.03% of accidents related to the human factor, 4.66% by means of transport and 3.31% to the environment. The same data say that the behavior of the human being who causes traffic accidents, is manifested mainly by speeding with high rates of 24.63% and 18.30% for 2012 and 2011 compared to the total number of accidents. For the dangerous exceedances, the year 2012 recorded 9.26%, an increase compared to the year 2011, which saw 7.54% of the accidents because of this kind of overtaking. Regarding the loss of control of the vehicle which is one of the human causes, the year 2012 recorded 4.37%, a considerable decrease compared to the year 2011 where the roads observed 14.88% of the accidents. Among other things, the other causes did not show much variation, which suggests that much remains to be done to mitigate the impact of these causes on the number of accidents. A reading of table 1 shows in a general way that the non respect of the highway code is at the origin of the large number of recorded accidents.

### **IV. Conclusion**

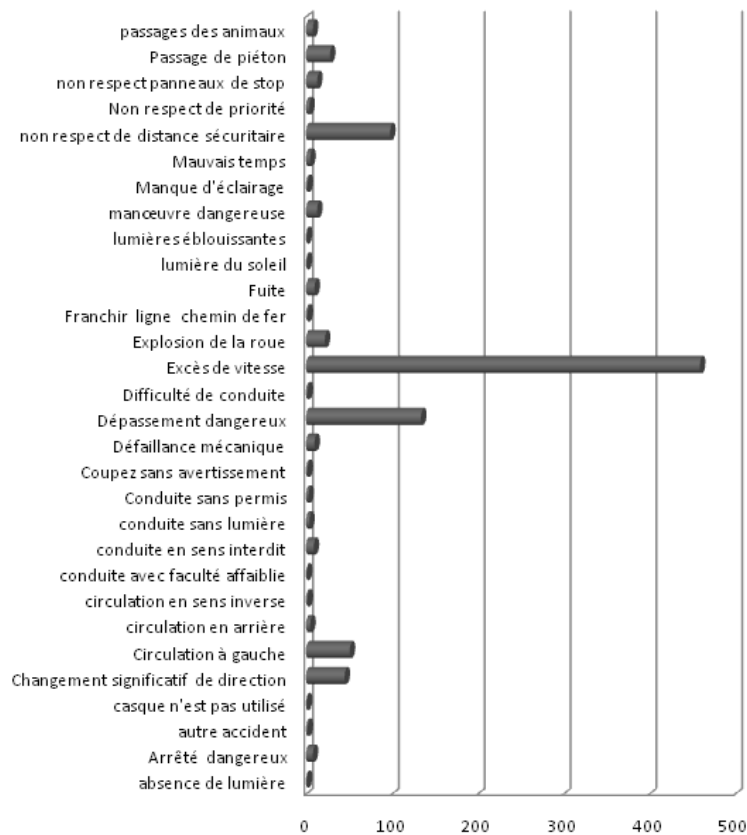
Our study addresses the problem of road traffic in Algeria, and we have come to the conclusion that this is the result of several causes with varying degrees of severity, and we have found that the speed excessive, dangerous overtaking and lack of respect for traffic lights are the main causes.

In this respect, and for the reduction of the number of traffic accidents, the following recommendations can be proposed:

- Force the offending driver to pay the penalty immediately after commission.
- Review and revision of the current traffic law which contains many theoretical and 'philosophical' texts.
- Invitation to seminars and national forums on road safety and traffic accidents at the highest level.
- Promote the inclusion of road education in school awareness campaigns.
- Elimination of black spots on the roads.

**Appendices:**

Figure(1): The breakdown by cause of deaths due to traffic accidents



The source: Individual work with SPSS, Data from transport directorate of Batna

Table(1): Human causes of traffic accidents by rate

Human causes of accidents	Year 2012 %	Year 2011 %
Speeding	24,63	18,30
Dangerous overtaking	9,26	7,54
No use pedestrian crossing	6,02	6,89
Failure to respect the safety distance	5,59	4,84
Lack of vigilance in neighbourhoods	5	4,28
Dangerous maneuver	4,46	2,63
Loss of control	4,37	14,88
Refusal to give priority	3,96	4,10
Lack of vigilance of pedestrians	3,80	3,71
Non respect of the signs	2,91	2,27
Change of direction without signage	2,74	2,03
Left-hand traffic	2,71	2,41
Pedestrian traffic on the edge of the roadway	2,26	2,61
Driving while intoxicated and taking drugs	1,37	1,63
Driving without a driver's license	1,30	1,26
Failure to respect stop signage	1,05	2,02
Driving in forbidden direction	1,02	1,22
Lack of vigilance when passing motorcycles and bicycles	0,97	1,59
Using the phone	0,23	0,53
Other	6,99	7,29
Total	90,64%	92,03%

The source: (CNPSR, 2011-201)

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