

SAE2.04_rendu

2023-04-07

In this document we are going to study the road accidents from 2006 to 2021 in the 18 to 24 year old category on the region of New Aquitaine and its 12 departments: Charente (16), Charente-Maritime (17), Corrèze (19), Creuse (23), Dordogne (24), Gironde (33), Landes (40), Lot-et-Garonne (47), Pyrénées-Atlantiques (64), Deux-Sèvres (79), Vienne (86), Haute-Vienne (87)

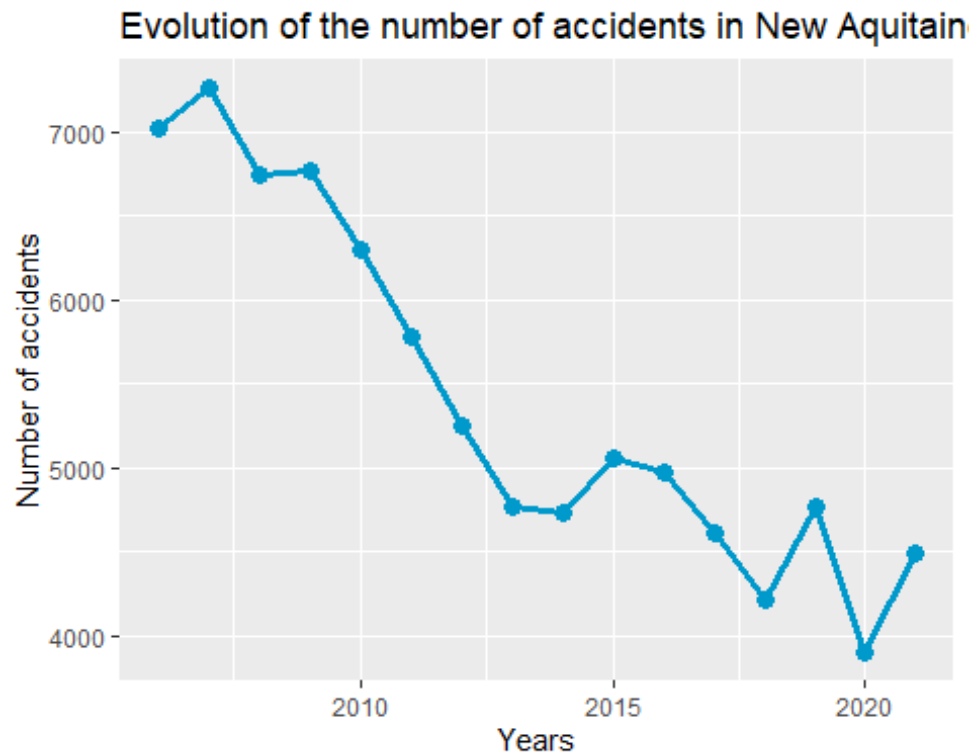
It is the largest region in France and the 3rd most populous in the hexagon with 6 million inhabitants (INSEE figure on January 1, 2019).

For this study we have 4 tables. The first table `bilan_departement_11` contains 13 different data: `dep`, `year`, `name`, `population`, `nb_acc`, `nb_acc_hab`, `nb_acc_r_2006`, `nb_indemnes`, `nb_tues`, `nb_hospi`, `nb_legers`, `nb_masc`, `nb_fem`.

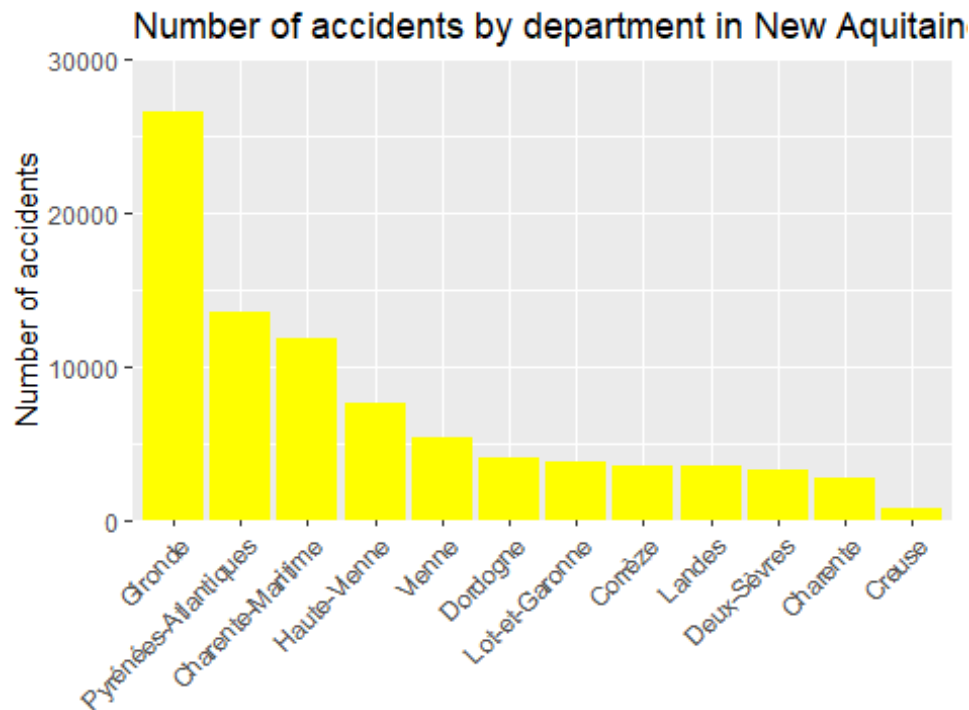
The second table `users_11` contains 13 different data: `num_acc`, `num_veh`, `place`, `catu`, `grav`, `sex`, `an_nais`, `trajet`, `secu1`, `secu2`, `secu3`, `etatp`, `age`.

The third table `vehicles_11` contains 7 data of which 5 different: `catv`, `obs`, `obsm`, `choc`, `occtc`. And the last 2 are: `num_acc` and `num_veh`

The fourth table `characteristic_lieux_11` contains 28 data of which 24 different: `jour_cal`, `an`, `mois`, `jour`, `jour_sem`, `hrmn`, `mi_jour`, `lum`, `com`, `agg`, `int`, `atm`, `col`, `adr`, `catr`, `nbv`, `vosp`, `prof`, `surf`, `infra`, `situ`, `nb_veh`, `nb_vic`, `mortel`. And the last 4 are: `num_acc`, `dep`, `nom`, `population`.



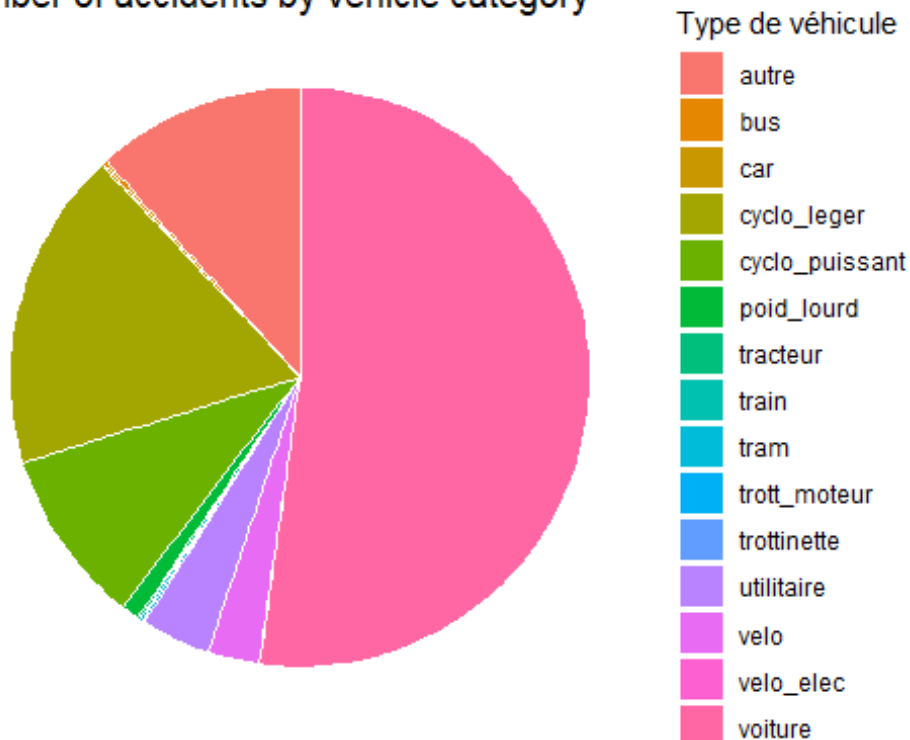
We can see on this graph above the evolution of the number of accidents in New Aquitaine over the years from 2006 to 2021. We can see a spike at about 7300 accidents in 2007 then a big decrease until 2013 before stabilizing at about 4800 accidents then going up to about 5000 accidents and finally going down again to reach the lowest spike at about 3950 accidents in 2020 because of the Covid crisis where there was a confinement so less cars outside.



```
## # A tibble: 12 × 2
##   nom                                total_number_of_accidents
##   <chr>                                <int>
## 1 Gironde                             26557
## 2 Pyrénées-Atlantiques                 13503
## 3 Charente-Maritime                    11875
## 4 Haute-Vienne                         7597
## 5 Vienne                              5418
## 6 Dordogne                            4002
## 7 Lot-et-Garonne                      3723
## 8 Landes                              3564
## 9 Corrèze                             3482
## 10 Deux-Sèvres                        3325
## 11 Charente                           2781
## 12 Creuse                             822
```

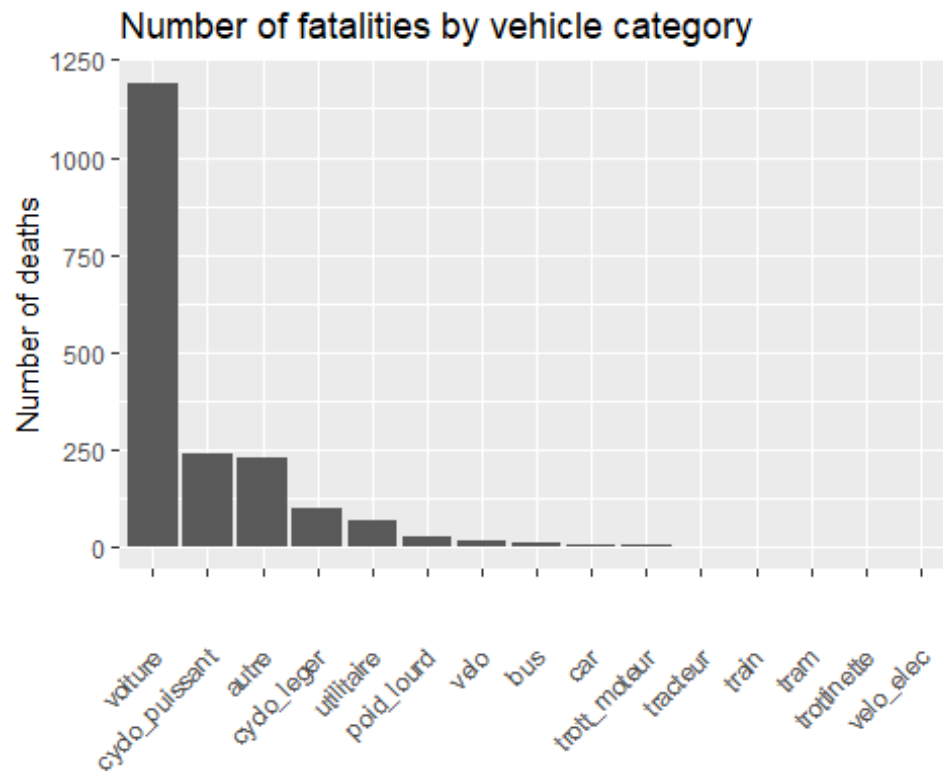
On this graph which represents the number of accidents by department of the Nouvelles-Aquitaine from 2006 to 2021 from the department having the most accidents to the one having the least. We can see that the department with the most accidents is “Gironde” with 26557 accident for the joke we would say that in the department of Gironde there is Bordeaux the country of the wine. (to consume with moderation)

Number of accidents by vehicle category



##	type of vehicles	Number of accidents	% d'accidents
## 15	voiture	21268	55.56
## 4	cyclo_leger	6012	15.71
## 1	autre	4802	12.54
## 5	cyclo_puissant	3298	8.62
## 12	utilitaire	1371	3.58
## 13	velo	890	2.32
## 6	poid_lourd	336	0.88
## 2	bus	79	0.21
## 3	car	73	0.19
## 9	tram	45	0.12
## 10	trott_moteur	44	0.11
## 7	tracteur	37	0.10
## 14	velo_elec	11	0.03
## 8	train	6	0.02
## 11	trottinette	8	0.02

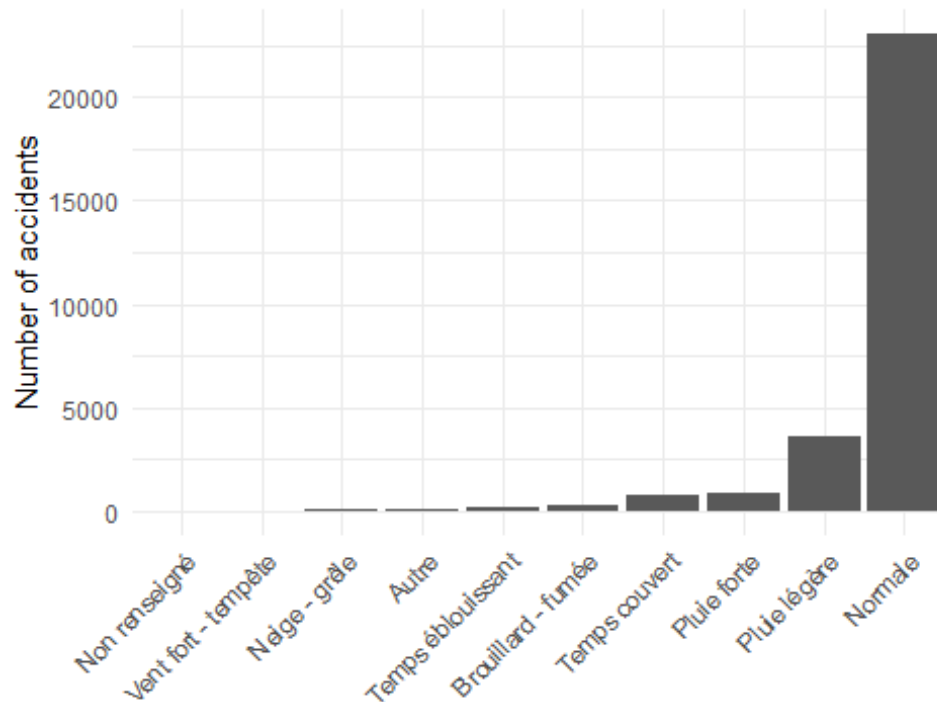
On the graph below we can see the proportion of accidents by type of vehicle. we can see that the type of vehicle “car” (car) represents more than 50% of accidents while the second category where there are the most accidents the type “cyclo_leger” represents less than 20% we can therefore see that young drivers should retake their highway code and their driving license.



```
##      vehicle_type death_count
## 15      voiture      1192
## 5  cyclo_puissant      240
## 1        autre      227
## 4   cyclo_leger       99
## 12   utilitaire       70
## 6    poid_lourd       27
## 13         velo       15
## 2         bus        9
## 3         car        4
## 10  trott_moteur        3
## 7    tracteur        1
## 8     train        0
## 9     tram        0
## 11  trottinette        0
## 14    velo_elec        0
```

Number of fatalities by vehicle category

In this section we will see which vehicle category is the most affected by fatal accidents from 2006 to 2021. The graph below represents the total number of deaths by vehicle category, and the car and vehicle that has the most fatal accidents. As a reminder, the population studied is 18-24 years old, so we can deduce that most of the people in this category have a driver's license and are therefore young drivers, and therefore they are led to make mistakes that can be dangerous as shown in the graph.



Accidents according to weather conditions

The weather can influence the risk of an accident, if the road is wet or icy. Or if vision is reduced due to rain or fog. The graph below represents the number of accidents according to the weather conditions.

We can see that the majority of the accidents happen with normal weather conditions.

We can see that some accidents happen with light rain, maybe because of aquaplaning and the negligence of this phenomenon by the drivers.

But as said before the majority of the accidents happen with a normal weather because the Nouvelle-Aquitaine has a temperate climate and the sunshine is important, approaching the 2 000 to 2 200 hours per year. This explains the important number of accidents with normal weather.