team_e08-gibellog-fermathi

fermathi-gibellog

2024-04-09

Introduction

The Nutri-Score is a simplified nutritional labelling system that helps consumers better understand the nutritional value of the foods they buy.
It ranks foods on a scale of letters from A to E, with A representing the healthiest foods and E the least healthy.
We want to check whether the Nutri-Score calculation takes into account several elements such as energy content, saturated fats, carbohydrates, and proteins.

In this report, we study the distribution and nutritional characteristics of French poultry products. We will use the OpenFoodFacts database, from which we have extracted 9345 products.

First, we will sort our database to remove the extreme values.
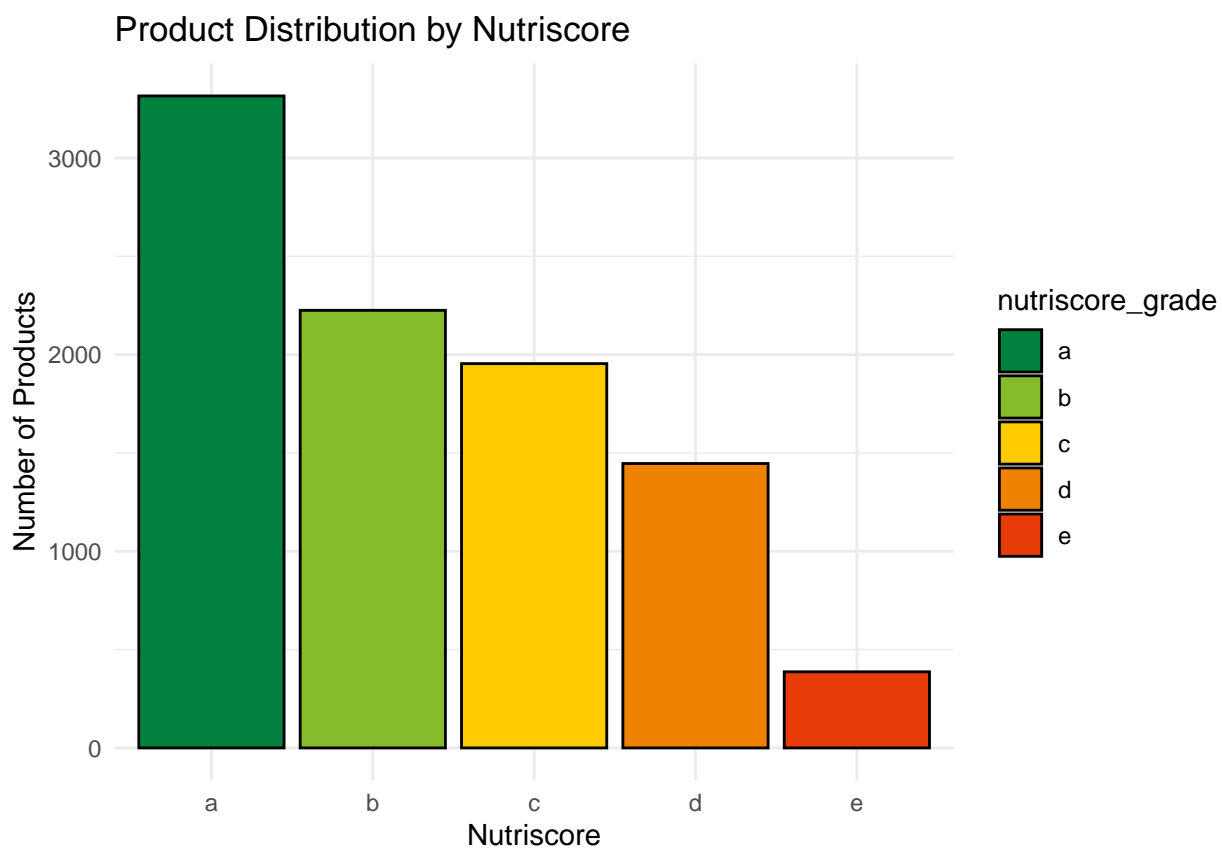Then we will look at the distribution of the Nutri-Score grade in our selection of poultry.
Finally, we will study the link between the various nutritional values and the Nutri-Score.

## Cleaning up the database of all the outliers we found while making the graphs

Firstly , we filter the data to remove fat_100g values above 50 because values above 50 are either duck confit(http://world-en.openfoodfacts.org/product/3700557600414/confit-de-canard-du-gers), duck breast(http://world-en.openfoodfacts.org/product/3308456381702/magret-de-canard-du-perigord) or rilletes(http://world-en.openfoodfacts.org/product/3368000489537/rillettes-de-canard-fontalbat-mazart) which will reduce the readability of the graphs.

After that, we also remove values above 30g of salt because the values above are either spices(https://world.openfoodfacts.org/product/8719987836688/sweet-chicken) or incorrectly entered values.(http://world-en.openfoodfacts.org/product/2858996057403/magret-de-canard-du-sud-ouest-en-tournedos-rossine)

Graphics section :

Product Distribution by Nutriscore

With this graph we see that the number of poultry is widely reduced with nutriscore grades with more than 3000poultries with a nutriscore grade a, around 2000 with a nutriscore grade c and less than 400 for poultries with a nutriscore grade e.

EnergyPer100g according to the nutriscore grade
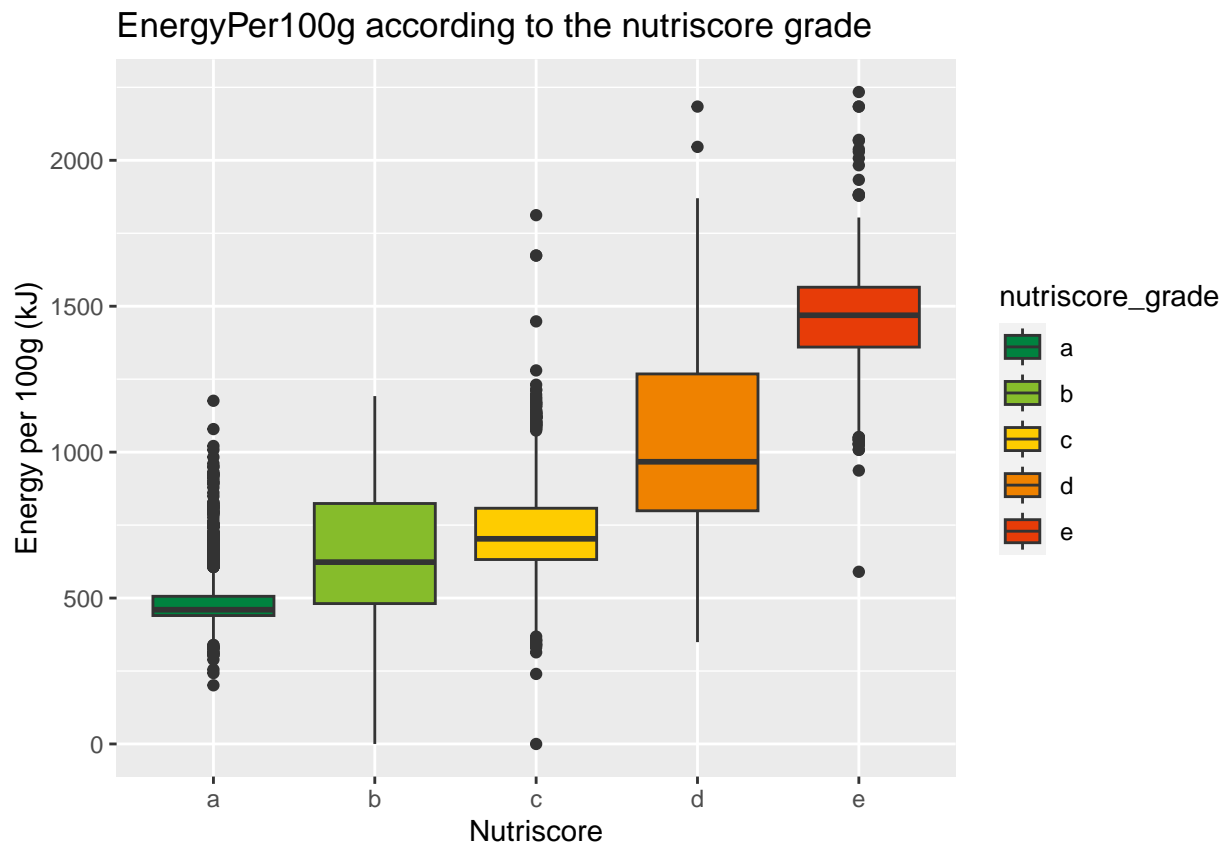
This boxplot shows us that the amount of energy in poultry is strongly influenced by the nutriscore.

Fat Content by Nutriscore Grade
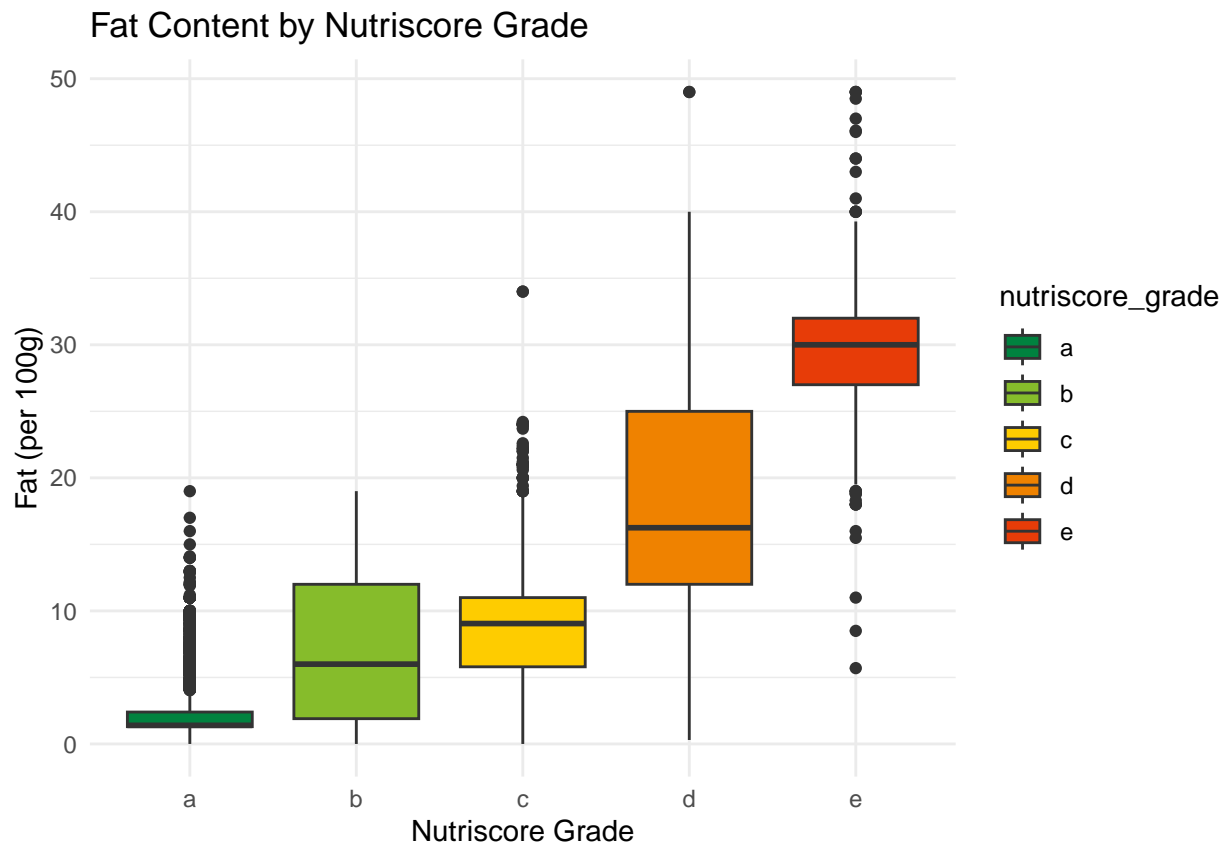
This boxplot shows us that nutriscore grade is heavily influenced by the amount of fat, thus we see a huge difference in nutriscore quartiles and medians between nutriscore grades, particularly between nutriscore grades a and e, where maximum values for a do not reach the 1st quartile of nutriscore e. We can make a parallel with the results we got just above with energy for each nutriscore as the results seem similar.

Proteins Content by Nutriscore Grade
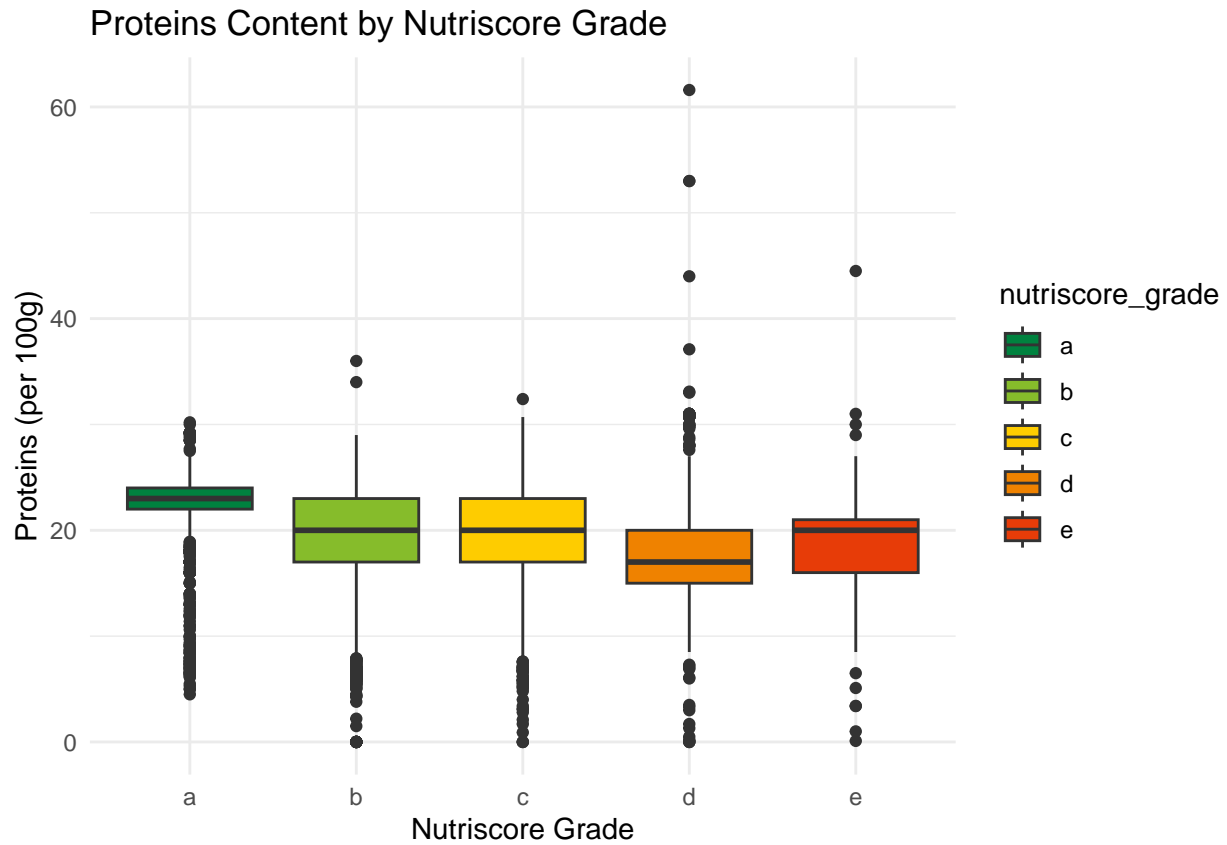
We can see that almost all the poultries studies, for all ranks, have approximately the same quartiles and the median it is because it stays for the most part poultry which have a similar meat. But poultries with nutriscore a are an exception with the upper quartile near to the other quartile but its first quartile and median show us that far more poultries with nutriscore have a good protein ratio.

Carbohydrates Content by Nutriscore Grade
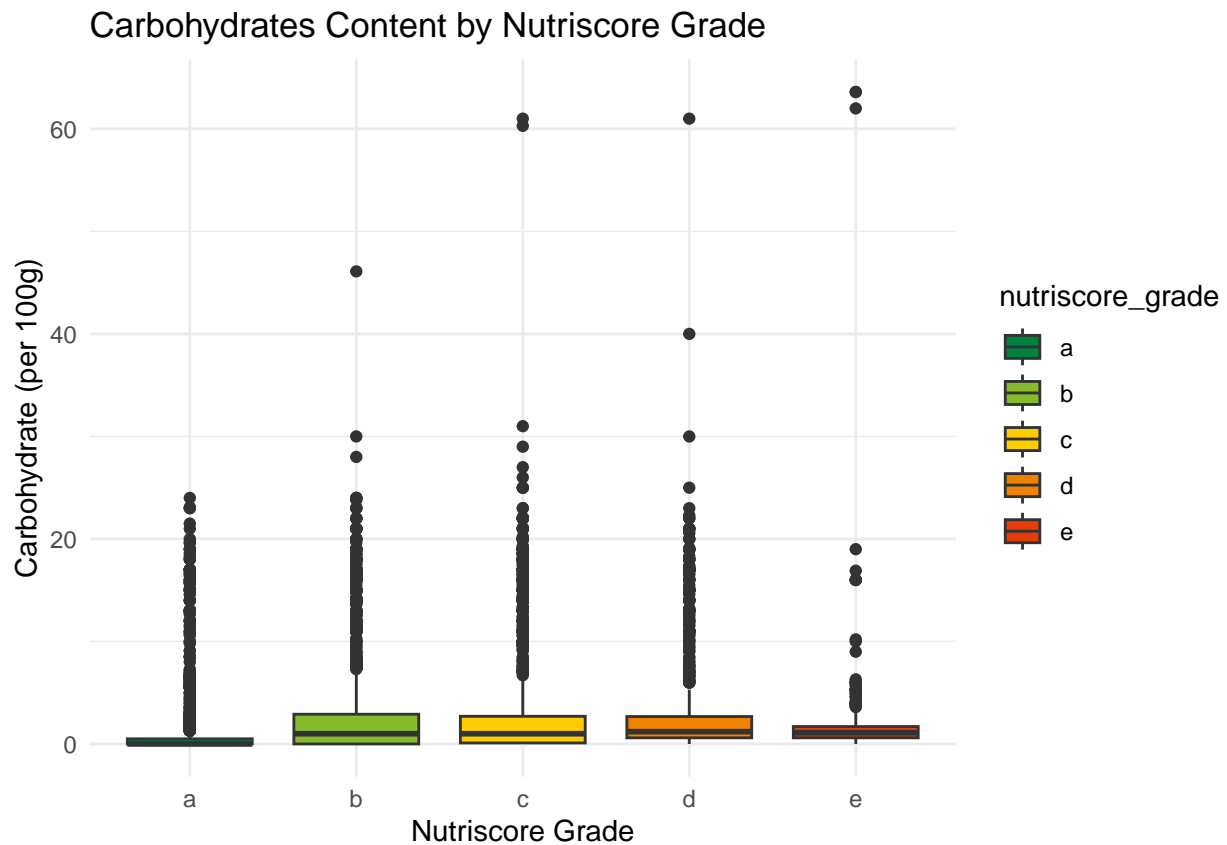
Exactly like for the previous boxplot, all poultries' grades have approximately same quartiles and median.

Conclusion :

Thanks to our analysis, we can conclude that the nutriscore is an indicator of the amount of fat and energy in poultry, but is not useful for seeing the amount of protein and carbohydrates in poultry.