ANALYTICS APPLIED TO POLITICS
MARCH 4TH ITALY'S POLITICAL ELECTION
POST 1 - ABSTENTION

"In God we trust, all others must bring data."
W. Edwards Deming

BACKGROUND

In this first post about the subject we want to share one of many interesting findings which are the results of an exercise aimed to challenge our practitioners with the analysis of aggregated data as well as to test the potential of the integration of Cran-R within Microsoft Power BI.

Our analysts used typical descriptive statistics tools and techniques to analyze the results of the last Italy's political election.
In order to do so we used the many available demographic and economic data of more than 99% of the Italian Municipalities and, obviously, their individual electoral results.

As known Italy's last political elections have been characterized by a record low 72.9% voter turnout as 27.1 eligible voters did not cast their vote.

ABSTENTION ANALYSIS

For each municipality the following scatter plots show the relationship between the percentage of eligible voters that did not participate to vote on the Y axis, and, on the X axis, the percentage of employers in each sector weighted by population.
The red one is the regression line for the 2018 election while the blue is that of the previous 2013 election.
We've also added the same statistics for the inactive plus unemployed.
The charts clearly reveal that blue and white collars tend to vote more than others.
On the contrary, in line with what happens in other advanced countries, rural centers (those with a high percentage of farmers) are associated with much higher even though slightly decreasing abstention.

ABSTENTION (12.6 Mln. ELECTORS):
CHANGE '13 - '18 AND LINK TO VOTERS EMPLOYMENT SECTORS
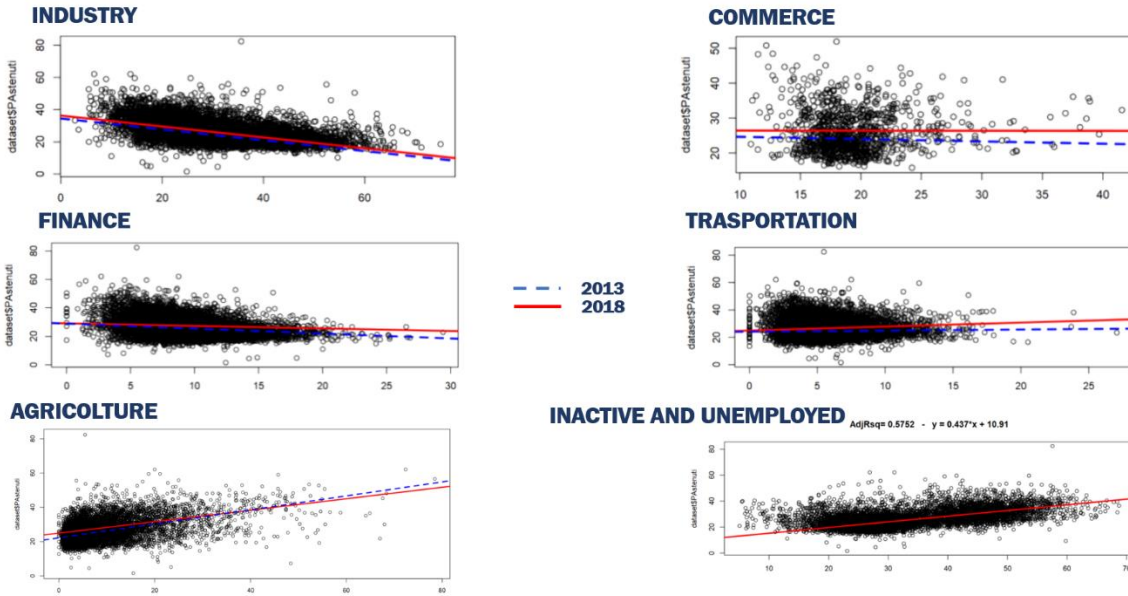
The general increase of the abstention rate is associated with higher employment rates in the Commerce and Transportation sectors.

Further analyzing abstention patterns, the following slide shows some interesting correlation between abstention rates and the results of the two winning parties weighted by municipalities' population.

The correlogram shows a strong correlation between the remarkable result of the Five Stars Movement and low voter turnout and the opposite for the Lega.

It is rather uncommon for any country that the result of the first party is systematically associated with higher abstention rates.
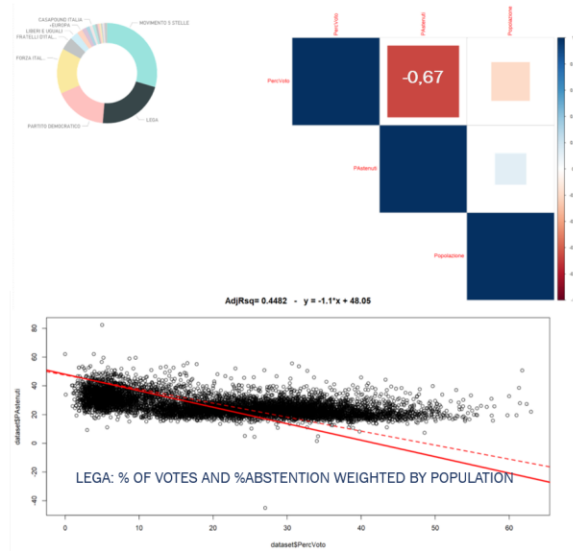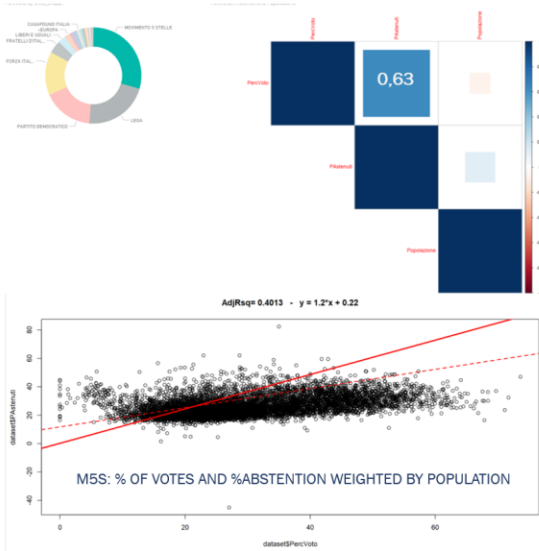
IDENTIFYING CORRELATIONS
SCALE: ITALY - RISULTS OF M5S E LEGA AND ABSTENSION

M5S: HIGH CORRELATION WITH ABSTENTION RATE

LEGA: HIGH DECORRELATION WITH ABSTENTION RATE

M5S: % OF VOTES AND %ABSTENTION WEIGHTED BY POPULATION

LEGA: % OF VOTES AND %ABSTENTION WEIGHTED BY POPULATION

Sadly, as shown in the following exhibit (top row of a correlogram including the abstention rate and many other demographic data), abstention is also highly correlated with positive coefficients with young ages: percentage of people with age between 19 and 25 and between 25 and 30 (respectively Punder25 and Punder30 in the graph).


The following line chart having cities population grouped by unit increase of 5000 on the X axis and values (percentages) on the Y, shows a clear relation between the abstention rate (green line) and the percentage of people between 19 and 30 years (black line),
It also shows peak abstention rates as high as around 40% in some mid-sized municipalities.
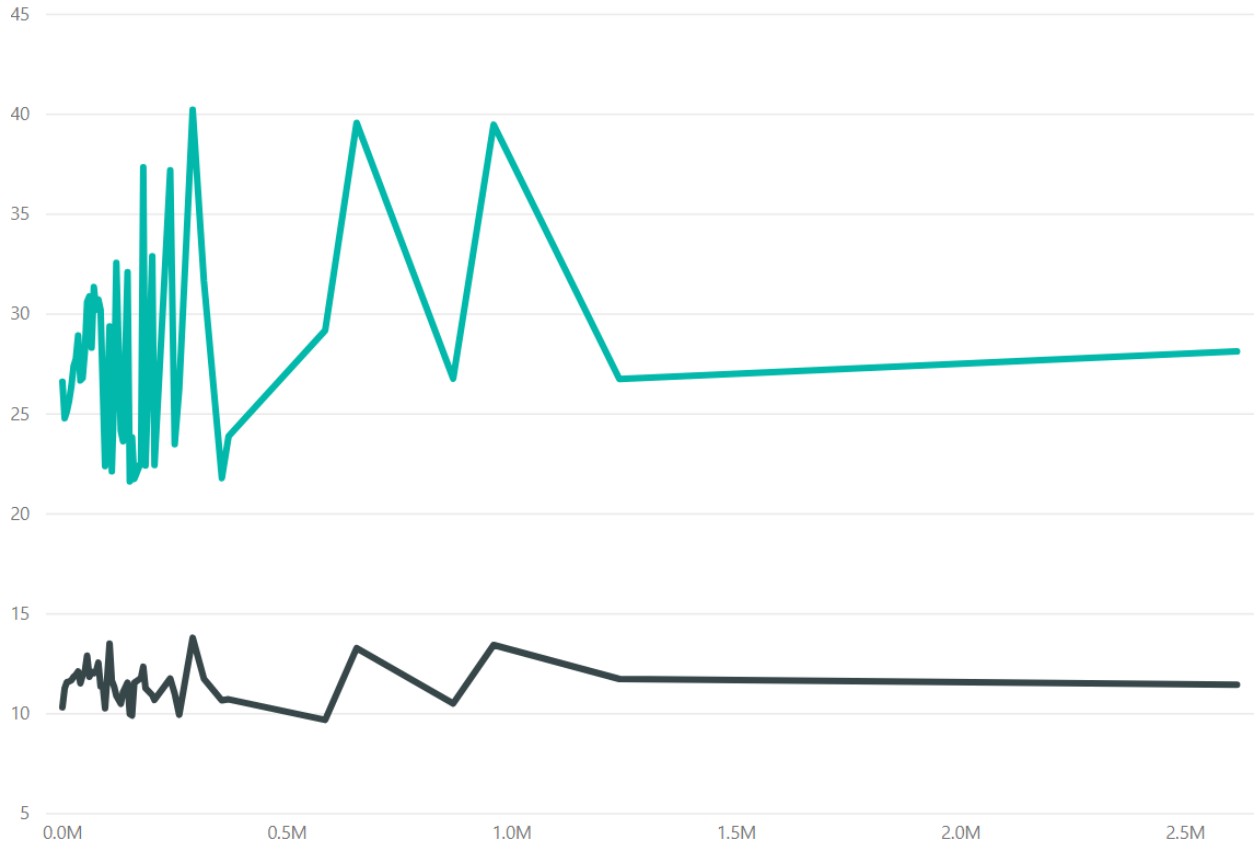
The most explanatory model for abstention is summarized in the coefficients plot below which includes confidence intervals.
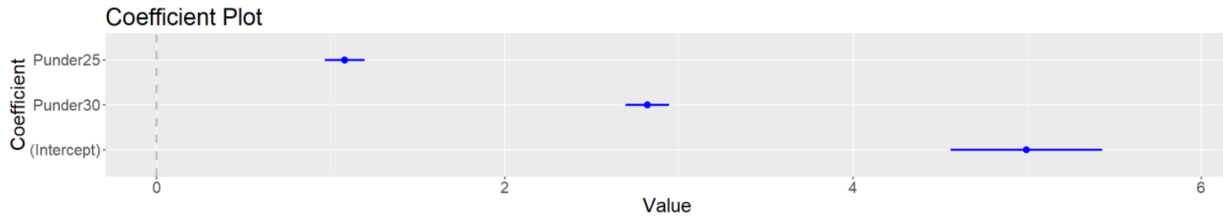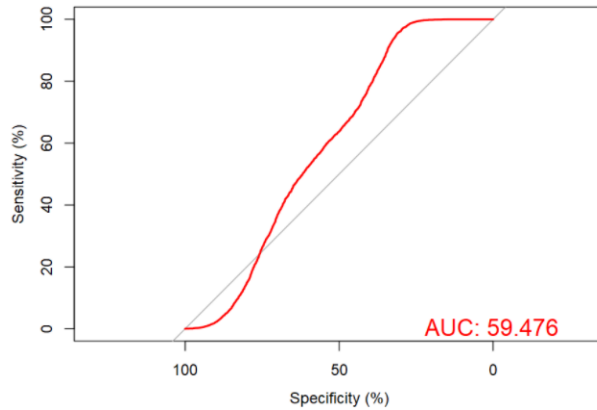
A similar model that only includes the percentage of people with incomes between 15'000 and 25'000 Euros as additional variable is the best classifier for absentees with an AUC of 59.5%.

The percentage of graduates is globally uncorrelated with abstention but it is inversely proportional to abstention rates.

The percentage of people with incomes between 15 and 25 thousand Euros is also inversely proportional to abstention rates.

In a following post we will disclose the models that describe the profile of voters for the winning parties as well as many other insightful descriptive statistics.

A more comprehensive paper on the topic will be made available for free upon request starting from November the 6.

Request can be submitted by emailing to papers@cpsweb.it