Analysis of Portuguese Presidencial Elections' Abstencion Rate

What were the drivers of the abstention in 2021?

After the fervor at the beginning of the democratic regime, are the Portuguese taking democracy for granted?

Since voting is one of the ultimate symbols of democracy, and is the only way for citizens to express the direction they want society to take, it would be expected that most citizens would take to the streets to vote.

However, in Portugal, abstention continues to reach considerably high levels. To make matters worse, there is the **Covid-19 pandemic**, forcing many citizens to stay at home. In order to overcome this situation, measures were taken *"The electoral administration took several measures (...) which include early voting in mobility (...), an exceptional regime of early voting (...) , the reinforcement of polling stations (...)"* , so that the situation would not be catastrophic. Nevertheless, *"More than 60% of voters did not go to the polls, more than in any presidential election (...)"*.

Is Covid-19's incidence related to abstention in the 2019 Presidential Elections, or are there other factors that caused people not to vote?

This study will focus on the main factors driving the abstention rate in the Portuguese's 2021 Presidential Elections, considering the pandemic situation and socio-demographic aspects of each municipality. To find out, a **cross-sectional** analysis was performed on the abstention rate, against several variables.

Methodology

Data on the abstention rate in the different regions in Portugal in 2021 was collected through *Pordata*.

In addition, we also collected data on the various factors that through research could have the most effect on the abstention rate, such as the number of accumulated covid cases per 100k Inhabitants; levels of education; annual average of unemployed people per region and the percentage of adults and women per region. A **Multiple Linear Regression Model** was employed in order to evaluate which factors influence the abstention rate the most.

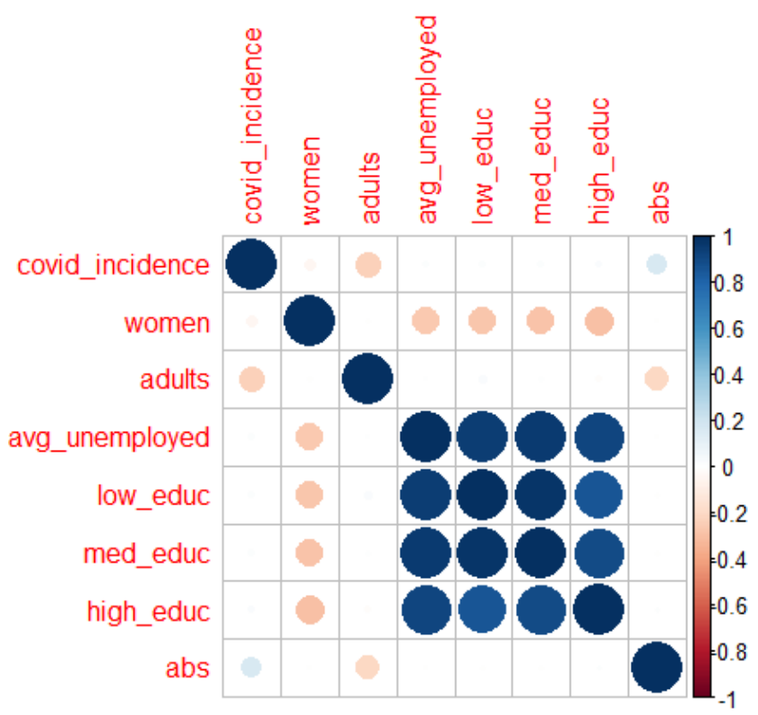
It is important to note that it was verified a priori that there were no missing values.

Moreover the normality of the residuals was analysed using the **QQ plot**, and the **Durbin-Watson** test was performed to detect the presence of autocorrelation in the residuals of a regression.

Finally, it was performed the **Breusch-Pagan** and **White-Special** tests for heteroskedasticity and **Reset** for functional form misspecification.

Results

According to the results obtained by applying the regression containing all the initial variables, the ones related with education and gender are not statistically significant. Simultaneously, these are the variables less correlated with the dependent variable. Hence, a second MLR model was tested **excluding** the variable **women** from the model. The variables concerning education were maintained.



The final model considered covid incidence and adults to be statistically significant at a 5% and 1%, respectively, significance levels. Moreover, it was possible to conclude that if the number of accumulated cases in Last 14 Days per 100k Inhabitants increases by 1, it is expected for the abstention rate to increase by *0.000728%*, ceteris paribus. Additionally, if an individual is between 18 and 64 years old, it is expected to vote *12.16%* more times than an elderly person, holding other factors constant.

Aiming to verify the presence of heteroskedasticity and the evidence of functional form misspecification, both **Breusch-Pagan** and **White-Special** test, and Reset Test were performed. In both tests, p-value was higher than 5%, thus not rejecting the null hypothesis, meaning that there is not evidence of heteroskedasticity, and the model is well specified.

Regarding the normality test, and after observing the graph, it is possible to conclude that residuals follow a normal distribution.From the output of the **Durbin-Watson**, it is possible to verify that the test statistic is 1.97 and the corresponding p-value is 0.024. Since the p-value is less than 0.05, the null hypothesis is rejected, meaning that the residuals in the regression model are autocorrelated.

Test	Pvalue	H0	Result
Overall Significance	0.007953	Not being significant	Model is significant
Breusch-Pagan	0.4562	Homoskedasticity	Homoskedasticity
White-Special	0.9092	Homoskedasticity	Homoskedasticity
RESET	0.06518	Not being misspecified	Not misspecified
Durbin-Watson	0.024	No correlation	Autocorrelated

Conclusion

According to the results of the different tests performed, it was concluded that the variables 'adults' and 'covid_incidence' were important explanatory factors of the abstention rate in the Portuguese Presidential Elections of 2021. Additionally, as age and covid incidence increases the Abstention Rate will also increase. Therefore, in this case the correlation between both variables explain an association and they do not represent, spurious correlations.

It is also important to highlight that most variables are irrelevant for this study case in particular. Simultaneously, there were some limitations regarding the choice of the variables to include in the model due to lack of data availability for the year.

Finally, aiming to improve the abstention rate results in Portugal, it would be interesting to develop awareness campaigns among the oldest populations, while creating mechanisms which facilitate the voting process for these people.

References

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