

Instructor Notes

Disciplines/courses suitable for this project: This project is an appropriate supplement to any introductory course in political science, sociology, biology, nursing or epidemiology.

Degree of difficulty: Depending on the number of predictors and post-project discussion on interpretation of the coefficients, this project is classified as M (moderately difficult), A (advanced.)

Resources/background needed:

In addition to the links provided to the students, following resources can be useful:

<https://coronavirus.jhu.edu/map.html>

<https://github.com/owid/covid-19-data/tree/master/public/data/ecdc>

For information on stay-at-home:

https://www.sidley.com/-/media/uploads/stay-at-home-tracker_europe.pdf

Since most of students may not have the background in regression, a brief introduction to regression (without the statistical jargon), and use of software, should be part of the pre-project discussions.

About running individual or group project: Groups of 2-3 should work together in this project. Notified that during the presentation of their results, the instructor and the audience will be asking questions and all members of the group should be prepared to answer those questions.

Discussion on duration of the project: The M (medium difficulty) version of this project should take 2-3 period of a typical course. A more advanced version, where we add more predictors and discussion on the results, may take 4 class sessions.

Open ended questions:

Why do you think wealthier countries (higher GNI) have more Covid-19 cases per capita?

What other predictors (climate, health care system, etc.) should we add to the model?

Based on your results, what are the characteristics (rich/poor, democratic/non-democratic. Island/not island, young/aging, etc.) of an ideal place to minimize the chances of being exposed to Covid-19?

Special instructions and assumptions: Students should be reminded about underlying assumption for a regression model. Issues such as normality of residuals, co-linearity of variables, etc. are too advanced for an introductory class but a reference to potential pitfalls of the model is recommended.

Revision and Continuation: This project can certainly be repeated at a later date with a larger set of data and/ or with a different focus. For example, instead of 25 countries, students can use up to 50 sets of reliable data and repeat the analysis with several more predictors.

Further guidelines on evaluation:

Other information for faculty not covered above:

Most, if not all, of the students in an elementary course do not have an experience or understanding of regression. It is essential to set aside one class to discuss the basics of linear regression. Make sure to provide step by step instructions for use of the software you have made available to students. Specifically,

- How to graph the dependent variable versus each individual predictor to visually inspect the relationship,
- How to enter data and conduct single and multivariable regression,
- Spend one class what each symbol, equation, parameter on the output mean.