

Introduction to Environmental Economics (IKT3620)

Spring 2020 - Midterm Paper

Topic: *Covid-19 – Environmental implications for Turkey*

The paper should not exceed 7 pages (2 cm margin, 1.5 spaced, 12pt Times New Roman font). Where necessary, include appropriate references and data in the paper, and place a list of references (Bibliography) at the end. You are certainly encouraged to create a section (called ‘Discussion’) where you make a discussion of your analysis before the conclusion section. You can also include your discussions in the conclusion section and name this section as “Discussion and Conclusion.”

The topic is ‘*Covid-19 – Environmental implications for Turkey.*’ The purpose of this exercise is the understand the effects of the epidemi for the environment (and the outcomes that will come with it) using the data provided by various weather stations. For the weather stations that you will be responsible from, see the Excel file. The data is available at the following webpage: ‘Weather Quality – Weather station data download (*Hava Kalitesi – Istasyon Veri indirme*):’ https://sim.csb.gov.tr/STN/STN_Report/StationDataDownloadNew#

You will be making use of the following indicators in your term paper:

- Particulate matter-10 (PM10)
- Particulate matter-2.5 (PM 2.5)
- Sulfur dioxide (SO₂)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO₂)
- Nitrogen oxides (NO_x)
- Nitric oxide (NO)
- Ozone (O₃)
- Carbon dioxide (CO₂, if available)

The idea is to observe the changes in these indicators (the particulate matters as well as the various gasses and compounds) and, where possible, relate these changes to the ongoing pandemic. Which indicators exhibit the biggest changes? Why? What can be the implications for the environment, transition away from fossil-based to zero-carbon energy, health etc.? The discussion will need to be shaped with the economic characteristics of the cities that you will be working with. For example, for a holiday destination, one cannot expect significant changes in the emissions of various pollutants. Yet, for a city with various industries (*e.g.*, energy, cement, steel etc.), one can expect several significant changes due to the slowdown of the economic activity. Therefore, it is **important** to base your discussions of your analysis on the economic characteristics of the cities, their industries, and so on.

The emissions that various weather stations measure will also depend on several other factors such as the air temperature, wind speed, humidity and so on. For example, an increase in CO will

not be a surprise during an epidemic when the temperature gets very low. With high wind speeds, the air pollution will have a lower impact and this will be reflected in the numbers. Here are the set of other indicators that can accordingly be of use in your analysis:

Temperature (C)
Wind speed (m/s)
Humidity (%)
Air pressure (mbar)
Wind direction (Degree)
Temperature inversion

Once again, note that these indicators can have an effect on the impact of air pollution as well as the health problems that the aforementioned pollutants can lead to.

The starting date for the analysis is March 11, 2020. This is the day when the first case of coronavirus was confirmed. The final date for the analysis is May 10, 2020. You will need to **compare** this time period with the same period for 2019; that is, compare it with the period given by 11.03.2019 – 10.05.2019.

To confirm your results, it is obligatory to email me the data (PM10...Ozone...Temperature...Temperature inversion) for the two time period.

The following is the suggested organization for the midterm paper:

1. Title (don't forget to mention your name and number here)
2. Introduction - Provide a brief introduction to the problem. How important is it? This section should clearly motivate the idea and your term paper.
3. Presentation of the analysis - Discuss in more detail the environmental, health, and economic issues and support your discussion with data (figures, tables, etc.).
4. Discussion – Based on your analysis, you can incorporate a section in which you share your opinions regarding the environmental issue(s) you have selected. You can also do this in the conclusion section.
5. Conclusion - Provide a brief (paragraph or so) summary of the issue(s) you explored.
6. References - Include the references at the end of the paper. Be sure to reference the academic studies, newspaper & magazine articles that you cited in the paper.

Deadline for submission: 27.05.2020

Your mid-term papers (in **pdf** format) should be submitted through “Online Kampus”. You will need to email me the datasets that you will have used for your analyses by that time. **In case no data are available for the station(s) you are working with, you should let me know.** Good luck!!

Asst. Prof. Tunç Durmaz