

## Practical Task 1

1.



### Which three countries have the lowest gender wage gap?

- The lowest gender wage gap in 2015 was found in Costa Rica, Belgium and Denmark.

### Which three countries have the highest gender wage gap?

- The highest gender wage gap in 2015 was found in Korea, Japan and Chile.

### Do some research on the country with the lowest gender wage gap and comment on why you think it succeeded in achieving a low gender wage gap in 2015 (max.150 words).

- According to the World Economic Forum's *Global Gender Gap Report* from 2015 (found at <https://www3.weforum.org/docs/GGGR2015/cover.pdf>), Costa Rica moved up 10 places due to a near doubling of women in ministerial positions, from 25% to 41%. Additionally, the country elected a female head of state for the first time since 2006. However, it must be noted, that OECD defines the gender wage gap as the difference between median earnings of men and women relative to median earnings of men. Therefore, these statistics do not take into account additional factors, such as women's lower employment rate in Costa Rica. In 2015, a Costa Rican newspaper published a report using seven additional variables in its calculations, which

found that women earned up to 27% less than men (found at <https://ticotimes.net/2017/04/06/gender-wage-gap-costa-rica>).

2.

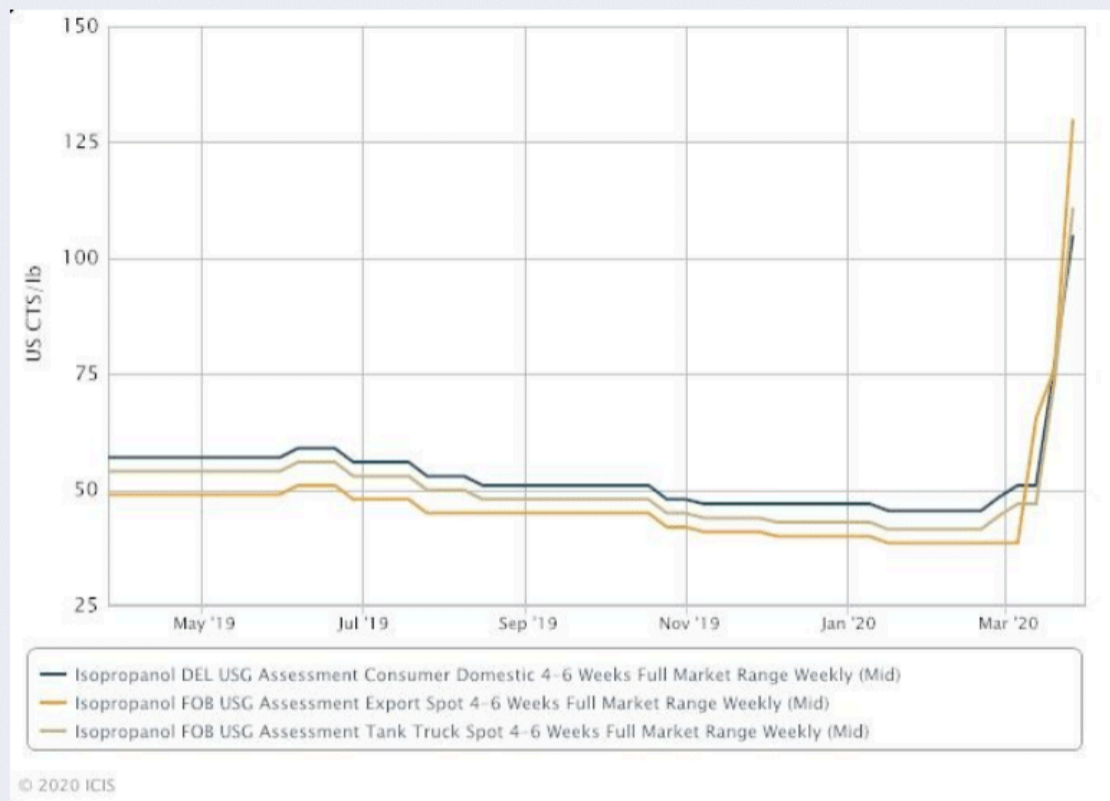


Figure 2: Isopropanol sales from May 2019 to March 2020 ([Source](#))

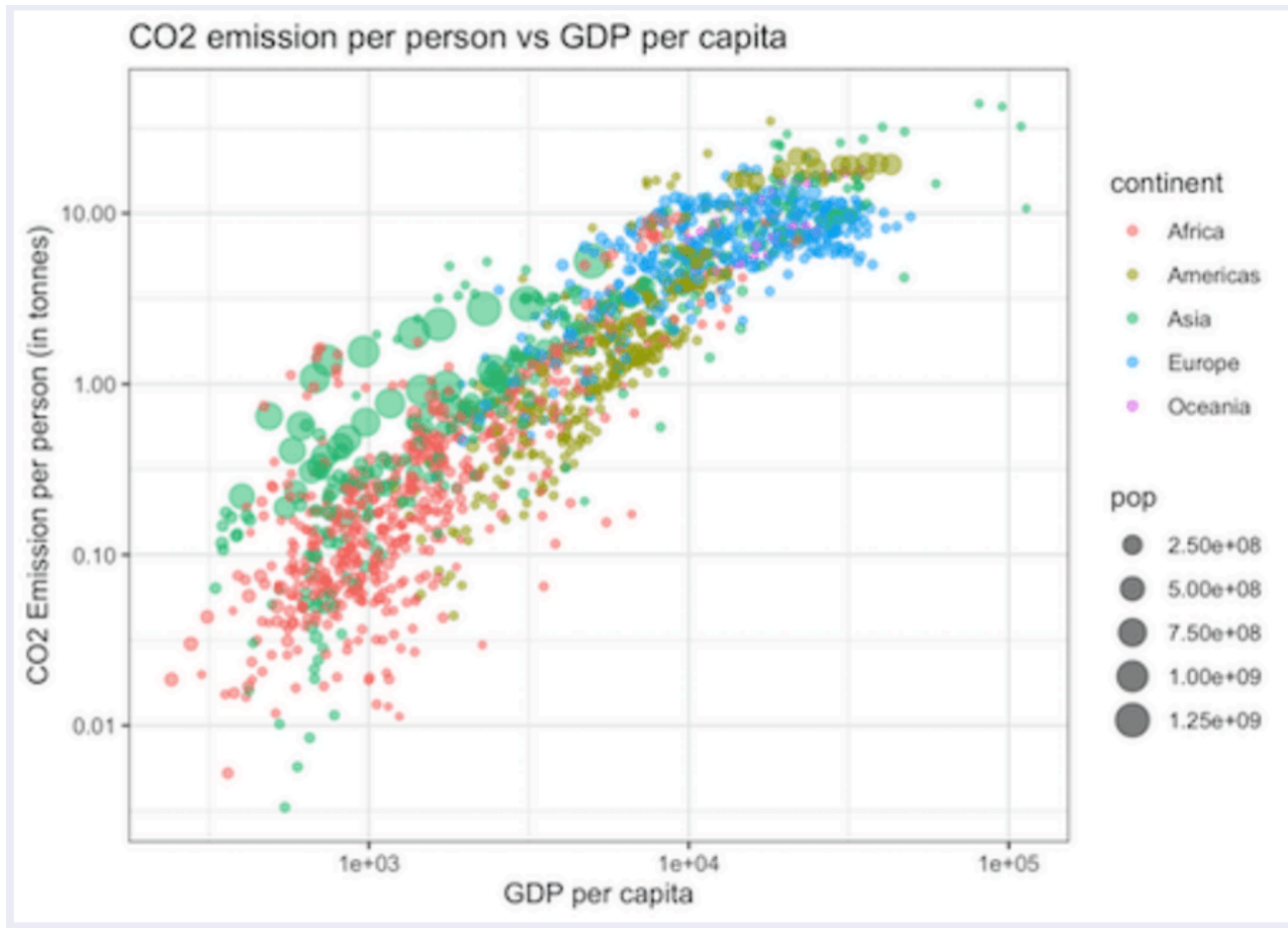
**Explain what is happening in the graph during March 2020 with regards to isopropanol sales (max.100 words).**

- Prior to March 2020, isopropanol sales had been in a steady decline. In February, sales started increasing at a slightly faster rate than it had been declining. However, in March the sales more than doubled in a very short amount of time. At its lowest in February, sales reached <50 US CTS/lb. About a month later, sales measured above 100 US CTS/lb.

**Describe a possible reason for the observation you made about isopropanol sales in March 2020 (max.100 words). Hint: Isopropanol is the main ingredient in hand sanitiser.**

- March 2020 marked the beginning of the global Covid-19 pandemic. There was knowledge of the virus prior to the start of the pandemic, hence the initial small increase in isopropanol sales in February. All three lines on the graph experience a rapid surge, which coincides with the US President's declaration of a national health emergency on March 13. The surge is explained by the public and businesses buying hand-sanitiser in large quantities in order to minimise the chances of being infected with the deadly virus.

3.



**Discuss the relationship between CO2 emissions per person and GDP per capita for each continent listed in the figure legend (max. 350 words).**

According to the above graph, there is an evident correlation between CO2 emissions per person and GDP per capita. There are no 'rich' countries with low emissions or 'poor' countries with high emissions. It can be concluded that a population with higher spending power will also produce higher CO2 emissions.

Europe as a continent has the most consistently high GDP per capita, and as a result, the CO2 emissions are also among the highest in the world. The blue cluster on the graph follows the upwards trend that looks like a line. Some countries fall outside of the concentrated cluster, also following the line.

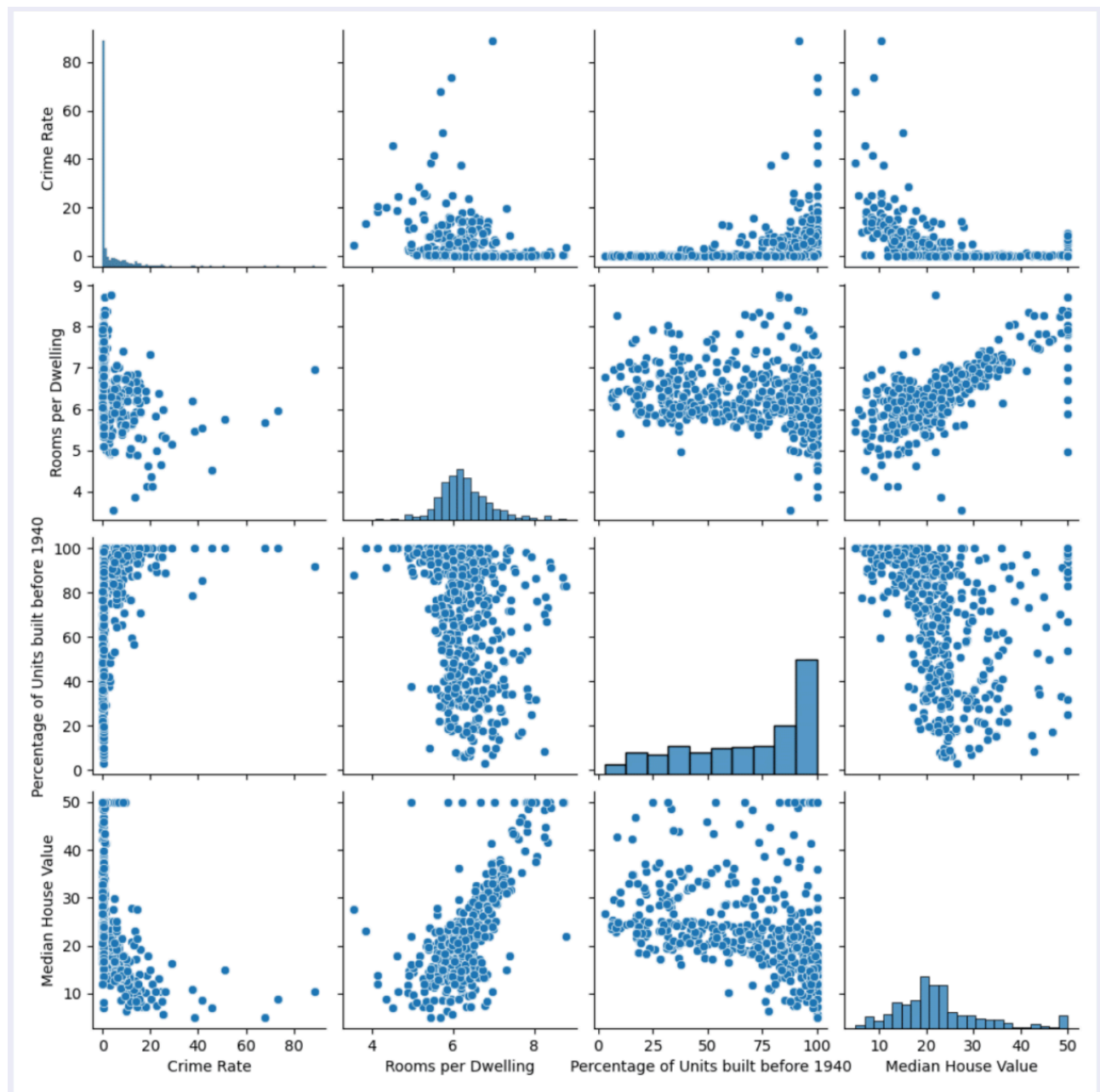
The continent with the fewest countries is Oceania, which are intertwined with European countries on the graph. The general wealth of the countries is similar to Europe, and as a result, the emissions are similarly high.

Countries in the Americas follow the line as well. One observation of interest is that most countries have lower GDP and lower emissions than most European countries. However, there are some countries with a higher population than any European country, which also have higher emission rates than the blue cluster. The more populous American countries have a higher GDP and higher emission rates than the general Americas cluster that lies below Europe.

African countries have generally the lowest GDP and emission rates. There are some countries that reach the same wealth levels as Europe, but most countries sit at the lower end of the ascending trend. This shows a considerable wealth gap between countries in Africa; the countries with the highest population also have the lowest GDP.

Asian countries have the most diverse data; the countries with the highest and lowest emission rates are both in Asia, and the population sizes are also vastly different. It is important to note that the Asian countries deviate from the general upwards trend, by creating a curve in the line: countries with the biggest populations in the world have higher emission rates than other countries with similar GDPs. Asian countries also display a considerable wealth gap.

## Practical Task 2



**Which graph best represents the population of Boston as a whole? Based on this graph, explain whether Boston has a high or low crime rate.**

Information about the people living in Boston can be gathered by looking at Rooms per Dwelling, to get an indication of population size, and Crime Rate, to understand the demographics. Boston tends to have an overall low crime rate.

**What is the average number of rooms per dwelling in Boston?**

- The average number of rooms per dwelling in Boston is 6.

**What is the correlation between Rooms per Dwelling and Median House Value?**

- The higher the number of rooms in a unit, the higher the median house value.

**By determining what percentage of units were built before 1940, are the majority of the houses relatively old or new?**

- The higher number of data points on the older unit side indicates that the majority of the houses are relatively old.

**What is the correlation between the Percentage of Units built before 1940 and the Median House Value?**

The older the house is, the lower the Median House Value. Older units also display a bigger range of values; newer units have a smaller price range. Most older units have a lower value than new units, but there are some older units that are top of the price range.