Analysis of COVID-19 Data Representation in Spain

(Phase 2: New representation ideas and their implementation in web and social media)

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1. General Idea

As observed in news and many information resource websites, most of the data representations are based on, line charts, bar charts (horizontal/vertical) and choropleth maps. These representations are informative and useful in transforming a large set of information to users in a short amount of time. However, my approach is that we can transform the most important information which is the number of positive cases in just a glance, so that user is able to identify the most contaminated area in less than a second even before he/she starts to think about analyzing the chart.

2. Introduction to Home page of web implementation

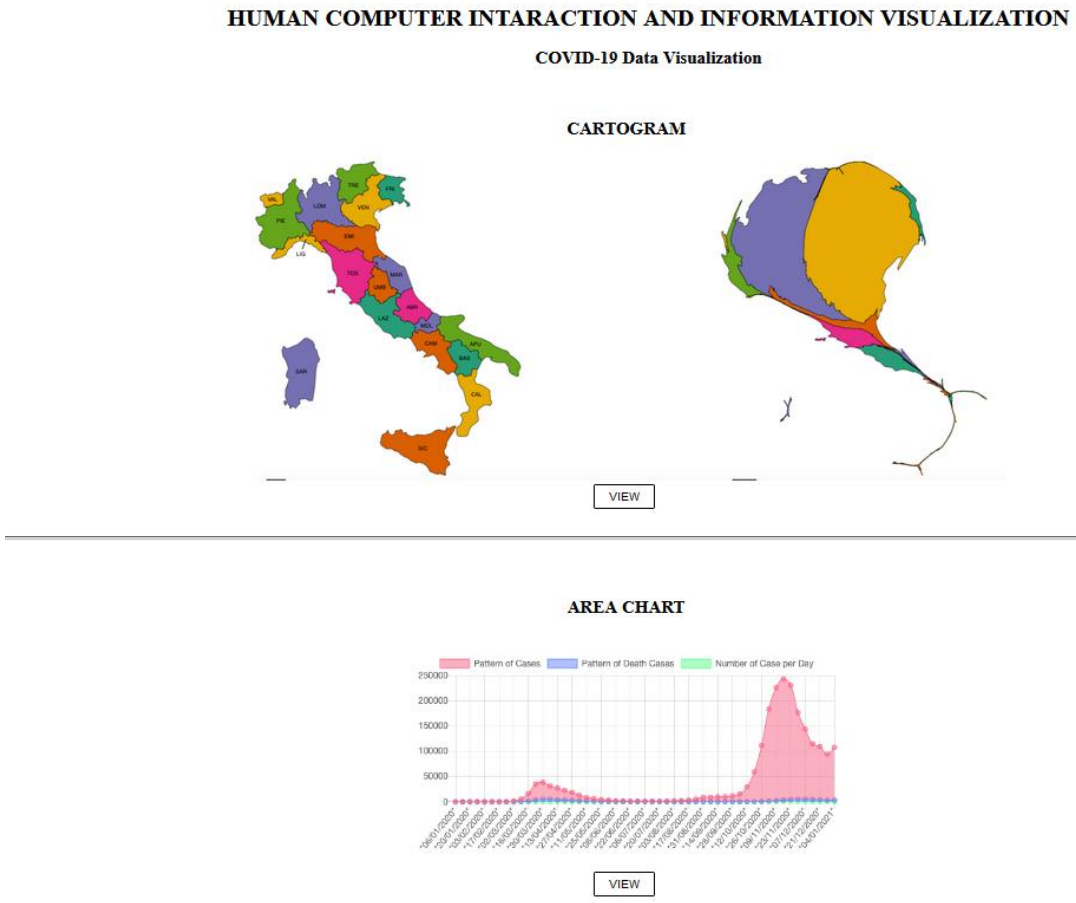

Figure 1

As it can be seen in the figure above, the first and the most important data representation which highlights our approach to representing covid-19 related information is an interactive cartogram. Therefore, it is the first graph that appears in the homepage.

As mentioned in the previous part, the approach was to magnify the most dangerous areas in less than a second and instantly to users. And the designed cartogram does this job as its very best.

Second graph, which is an area chart shows a general information on the related daily covid-19 information in the whole country. This graph is placed in the

The Area chart is placed in second part because of the more general information it gives. Moreover. The users already gained information about the most dangerous areas of the country with the first graph, so the next most important info can be the daily reports of covid-19 patients all over the country.

In the third spot along with the fifth, a radar area chart and a radar chart are designed. These are again highlight the approach of transferring the information to users in a glance, by showing the most contaminated areas of the country.

The forth graph in homepage is a complementary graph of the second chart, as it covers more information along with more details about the covid-19 patients across the whole country.

3. Data Representations

1. Data Representation 1 (Daily info)

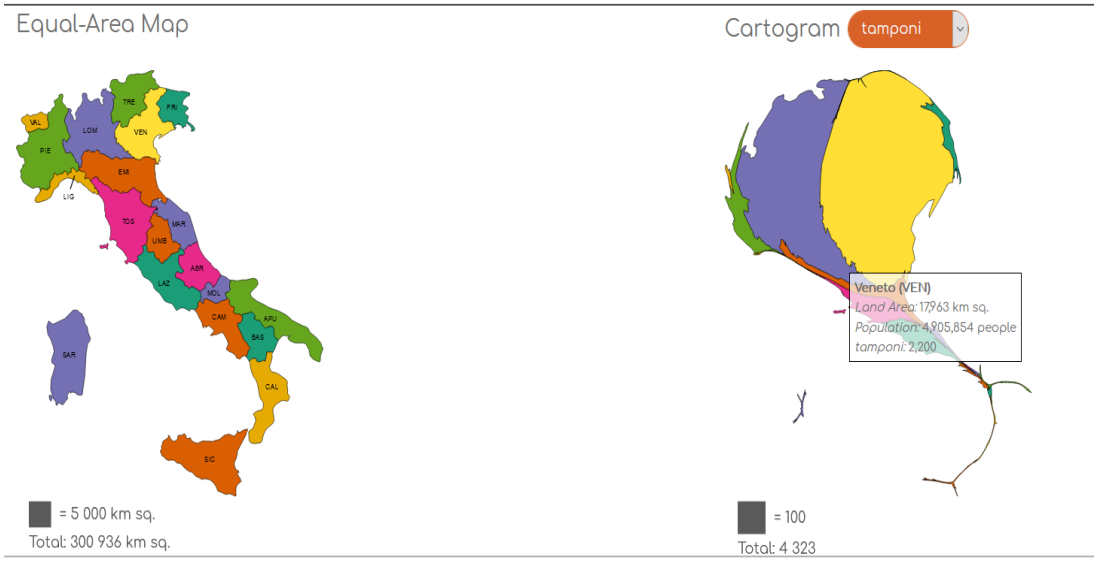

Figure 2

Type of the data representation: Cartogram

Variables Considered in this data representation: In this chart as the number of our measurement in dataset (“tamponi”) in a specific day

grows, the size of the province on the map will be relatively bigger and bigger. On the other hand, by decreasing the measurement the size of the related province will be smaller and smaller. Moreover, the original map is shown beside the cartogram and each province is shown by a special color in both maps. In addition, as we hover the mouse cursor on each province the exact number of “tamponi” along with the population and area size is shown.

Dataset used for this data representation: https://github.com/pcm-dpc/COVID-19/blob/master/dati-regioni/dpc-covid19-ita-regioni-20200224.csv

Example on social media:

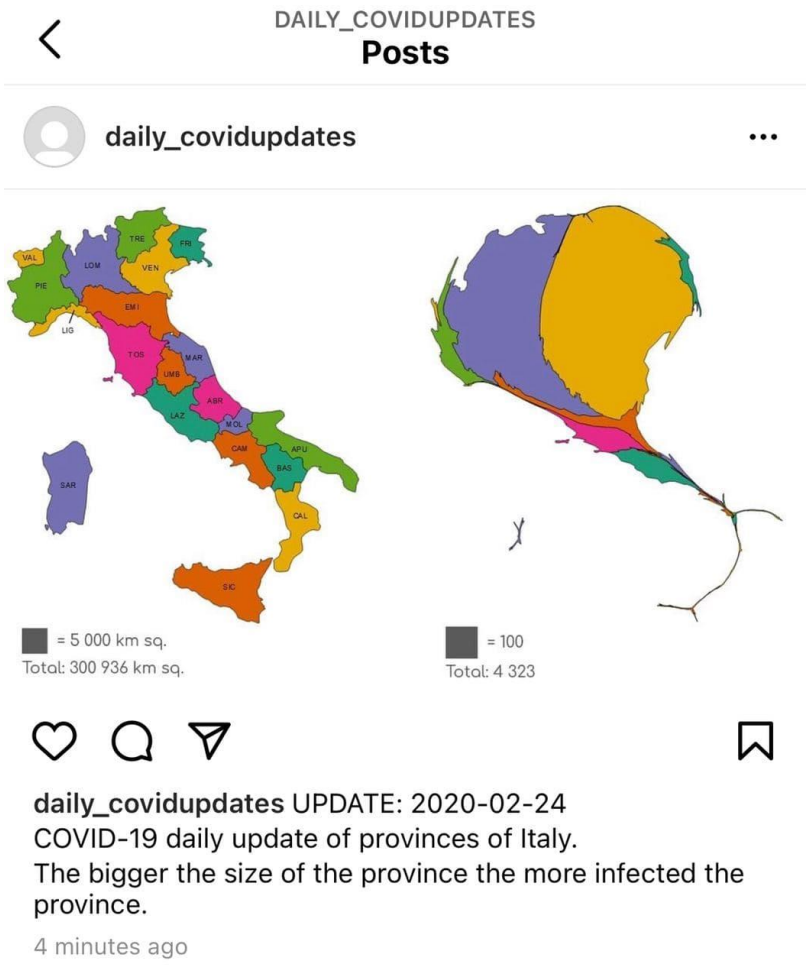

Figure 3

Description:

As mentioned above this chart perfectly supports the main approach of transferring information in a glance, specially with using it on social media the effectiveness of it increases dramatically.

2. Data Representation 2 (weakly info)

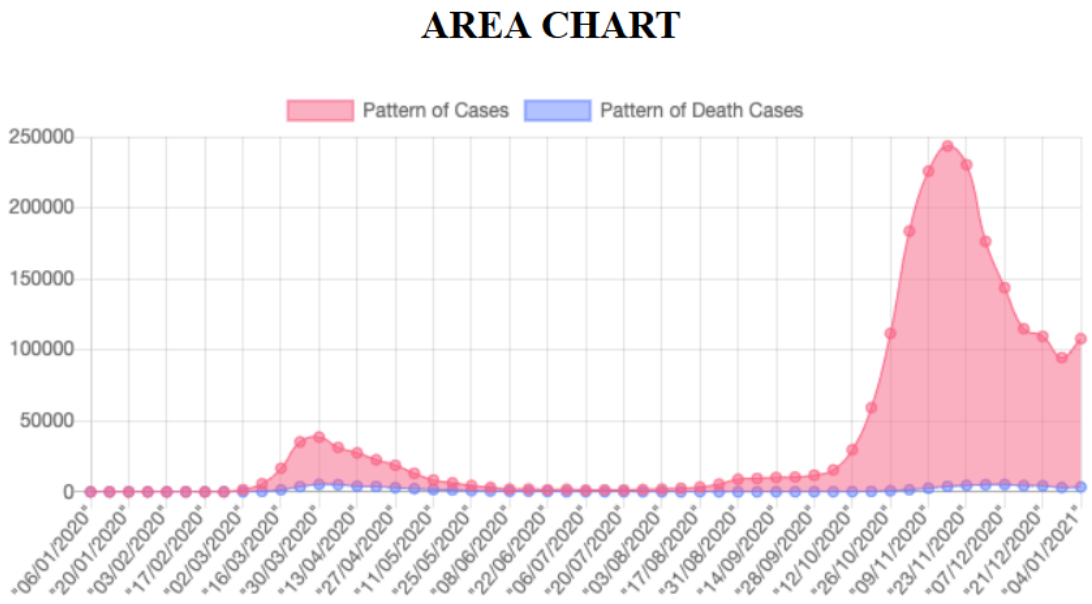

Figure 4

Type of the data representation: Area chart

Variables Considered in this data representation: The y axis shows the total number of covid-19 cases, and on the x axis indicates the weakly timeline. Moreover, red area illustrates the overall number of cases, blue area indicates the number of death caused by covid-19. In addition, as we hover the mouse cursor on top of each area, we can see the exact numbers and details.

Dataset used for this data representation:
https://data.europa.eu/euodp/en/data/dataset/covid-19-coronavirus-data/resource/260bbbde-2316-40eb-aec3-7cd7bfc2f590

Example on social media:

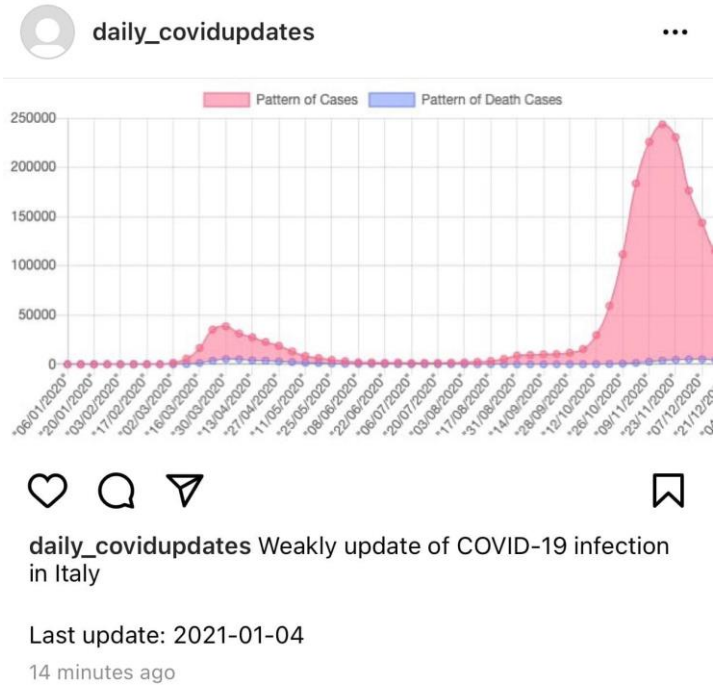

Figure 5

Description:

It is a complementary chart which shows the weakly info on Covid-19, so it will be published on social media weakly and it is a good way of following the trend. However, as the trend-based charts like line charts have been excessively used in other sources, it is preferred to not to focus too much on this type of charts.

3. Data Representation 3 (daily info)

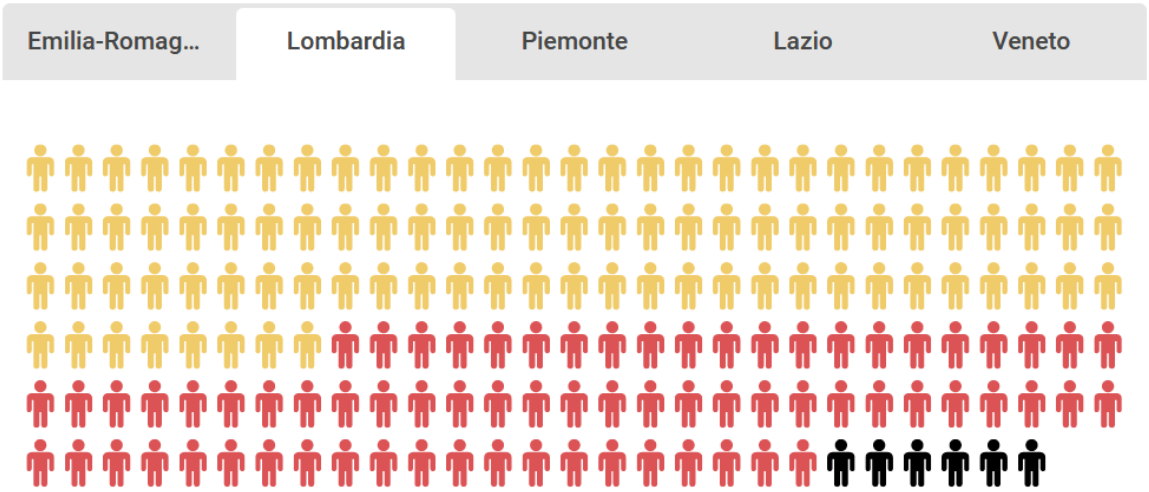

Figure 6

Type of the data representation: Pictorial Chart

Variables Considered in this data representation: In this graph top 5 most infected provinces are chosen and the exact number of covid-19 patients in hospital (yellow shapes), number of isolated patients in their own home (red shapes), total number of cases (yellow + red shapes), number of healed patients (green shapes) and the number of deaths caused by covid-19 (black shapes) in a specific day is shown. Moreover, as we hover the mouse cursor on top of each shape group the total number of each group is shown.

Dataset used for this data representation: https://github.com/pcm-dpc/COVID-19/blob/master/dati-regioni/dpc-covid19-ita-regioni-20200224.csv

Example on social media:

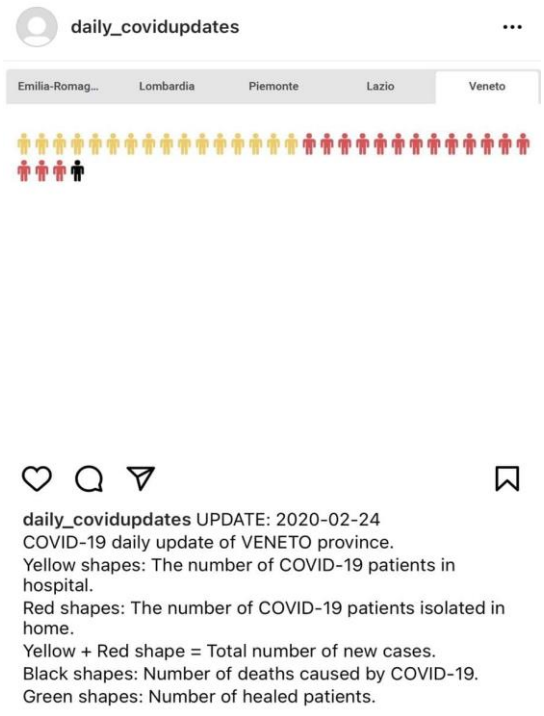

Figure 7

Description:

Like cartogram, this chart is good way of transferring information quickly. For instance, in this example the number of positive cases is easily noticeable in the province of Veneto. However, as we do not have the option of mouse hover in case the numbers grow dramatically it will be harder to keep counting the shapes, but it is still a great tool to compare and identify the most infected areas.

4. Data Representation 4 (daily info)

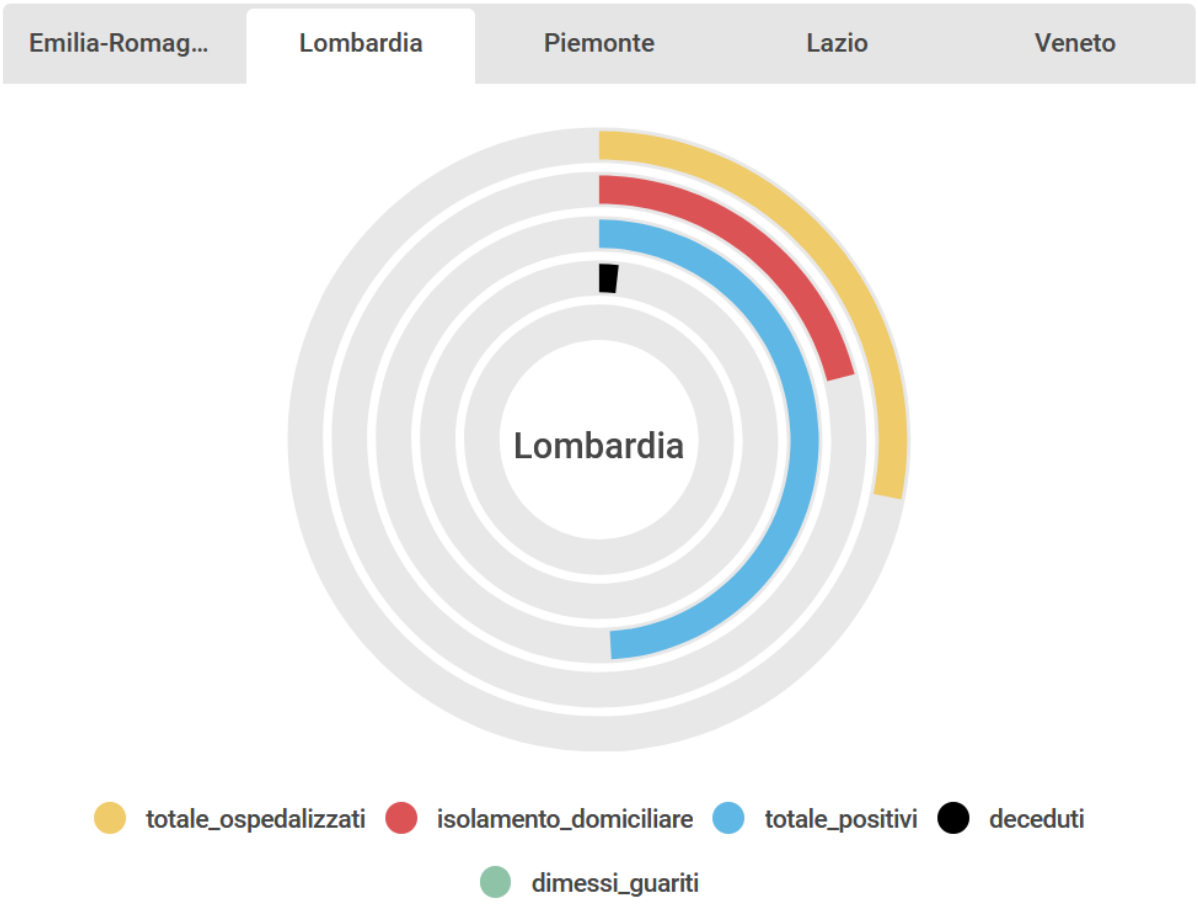

Figure 8

Type of the data representation: Radial chart

Variables Considered in this data representation: In this graph top 5 most infected provinces are chosen and the exact number of covid-19 patients in hospital (yellow line), number of isolated patients in their own home (red line), total number of cases (blue line), number of healed patients (green line) and the number of deaths caused by covid-19 (black line) in a specific day is shown. Moreover, as we hover the mouse cursor on top of each shape group the total number of each group is shown.

Dataset used for this data representation: https://github.com/pcm-dpc/COVID-19/blob/master/dati-regioni/dpc-covid19-ita-regioni-20200224.csv

Example on social media:

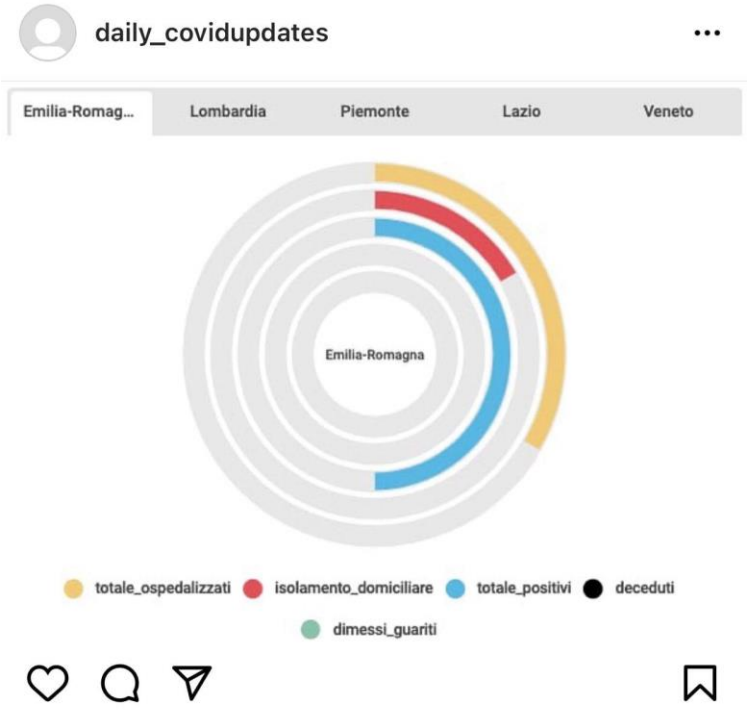

Figure 9

Description:

As we do not have the mouse hover option on social media posts, so we cannot see the exact numbers, and this chart shows the lines relatively to the total number of cases, it is not a good option to use it on social media, as it may create confusion while comparison of several provinces.

5. Data Representation 5 (daily info)

RADAR CHART

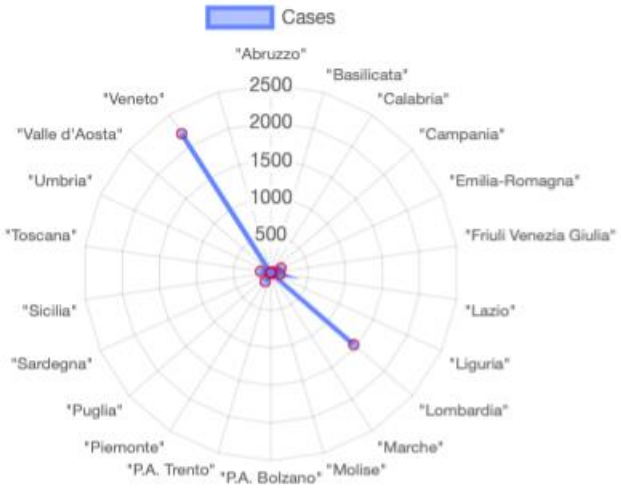

Figure 10

Type of the data representation: Radar chart

Variables Considered in this data representation: This graph illustrates the number of cases of covid-19, divided by the provinces. On edges the name of the provinces are shown and as the number of cases grow the line starting from the center of the circle becomes closer and closer to the outer layer. Moreover, as we hover the mouse cursor on top of each line, we can see the exact numbers and details about the related province.

Dataset used for this data representation: https://github.com/pcm-dpc/COVID-19/blob/master/dati-regioni/dpc-covid19-ita-regioni-20200224.csv

Example on social media:

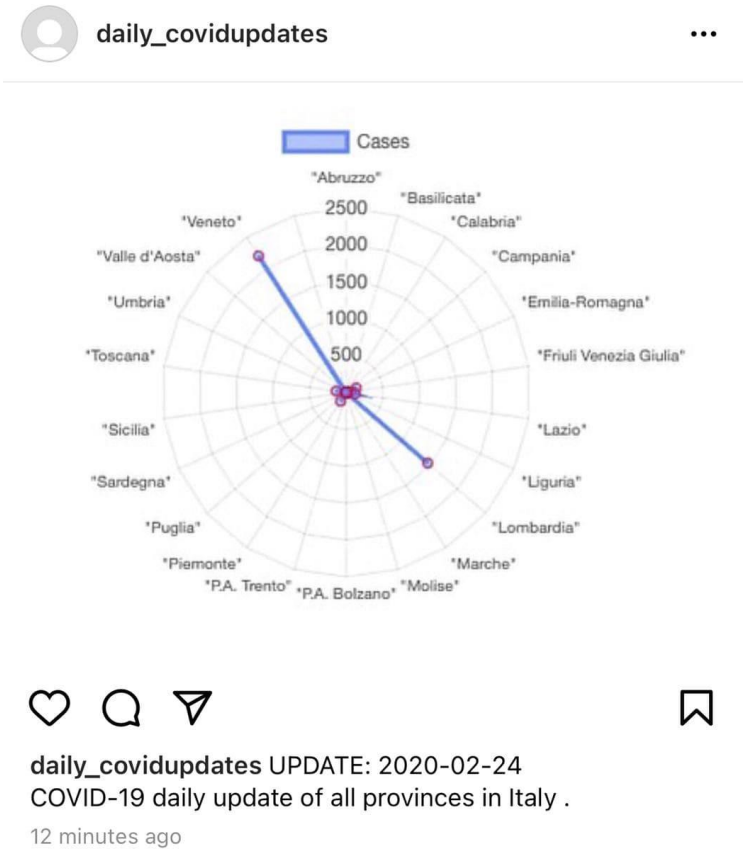

Figure 11

Description: This chart is another example of transforming information quickly to viewers. And it is a complementary chart to the previous ones on this approach. Moreover, it is a useful tool, as in absence of mouse hovering option there are some guidance in quantifying the lines, beside just determining the most infected areas.