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Analysis of Human Deaths in Regard to Covid-19 Pandemic in European Countries

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Abstract:

The study aims to carry out a multidimensional comparative analysis of the number of deaths in thirty-two European countries regarding COVID-19 in dynamic terms. The study's subject is thirty-two European countries, and the number of human deaths caused by COVID-19 will be the object of the study.

Multidimensional comparative analyses were used for this purpose. The primary data were grouped and separated. Bar charts, line diagrams, and frame-nosed charts were used to detect emerging trends for interpretation. The study ends with a summary and conclusions. The study uses research methods in the form of a literature analysis, which deals with the multidimensional analysis and the disease called COVID-19. The following research tools were used: categorized frame-noses charts with arithmetic averages/means drawn, and line and bar charts.

The study observes the lack of multidimensional comparative analyses of human deaths in European countries in dynamic terms, comparing them to the population of the entire countries concerned, the number of past deaths (2010-2019), and the deaths caused by COVID-19.

The study attempts to analyse the deaths of people in regard to COVID-19 in thirty-two European countries.

Keywords: *Coronavirus, multidimensional analyses, human deaths.*

JEL: *C51, E31, E37, E64.*

Paper Type: *Research in Security Studies.*

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1. Analysis of Literature of Research Subject

At the end of 2019, a disease, which became a major threat to people, attacked mainly the respiratory system and other internal organs and was spreading rapidly, emerged in China. The disease has been officially called coronavirus disease (COVID-19) (World Health Organization, 2020).

The first death occurred in China on January 11, 2020, in Wuhan, Hubei Province (Secon, Woodward, and Mosher, 2020). The first European country to struggle with COVID-19 was Italy. Then Spain, France, Germany, and the United Kingdom (Worldometers, 2020). The main problem of all the countries affected by COVID-19 was the health care systems' capacities regarding equipment, infrastructure, and knowledge of the case.

The Polish first COVID-19 case was confirmed on March 4, 2020. At the end of April, there were over 11,000 cases and over 500 deaths. Due to a lack of equipment - mainly protective equipment for medical personnel - the Polish authorities began to search for these products abroad (Björn Jerdén, 2020)
Since March 11, 2020, COVID-19 has been considered a pandemic (Satomi, *et al*., 2020).

In general, COVID-19 is slowing down the economies and is causing global unrest (Luisetto, Fiazza, and Latiyshev, 2020; Grima *et al.*, 2020). In March 2020, national borders were closed, including passenger transport in Poland (Forbes, 2020). COVID-19 leads to people's deaths in dynamic terms, with different quantities depending on a given country. The study attempts to analyze the deaths of people regarding COVID-19 in thirty-two European countries in dynamic terms.

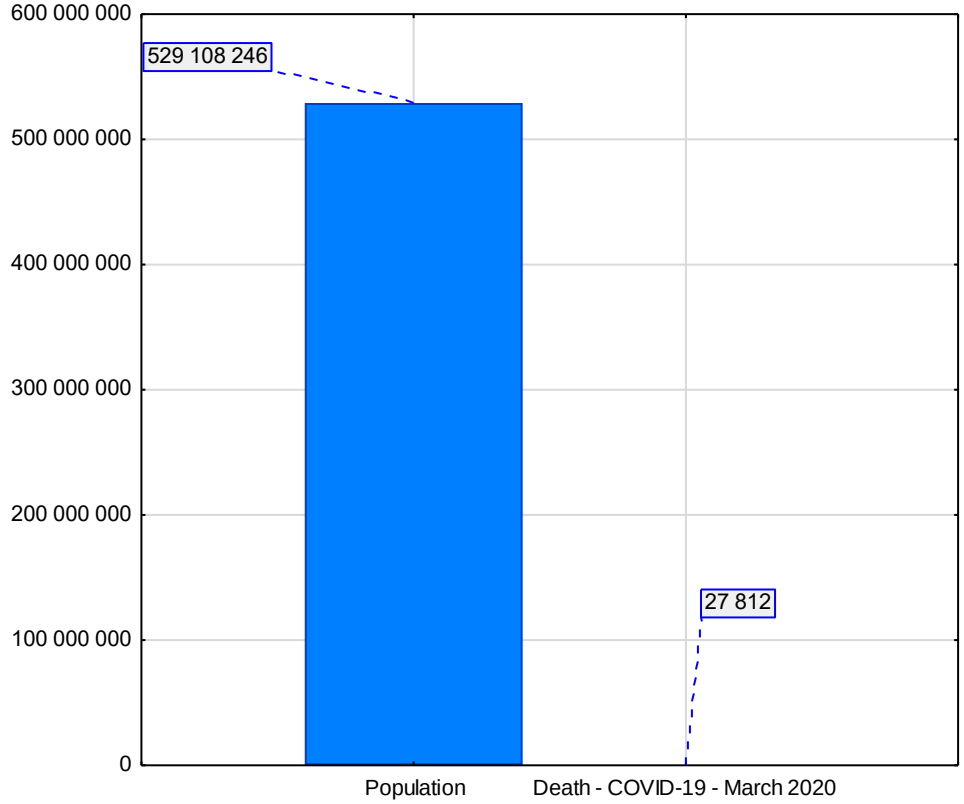
2. Analysis of Primary Data

The study started with a bar chart of primary data on the population of 32 European countries in 2020 and those who died of COVID-19 in March 2020 in these countries. The results are shown in Figure 1.

An assessment of the data compiled in Figure 1 is the statement that the number of deaths due to COVID-19 in March 2020 represents 0.005% of the total population of the 32 European countries concerned. This is followed by a categorized bar chart of data relating to those who died in the same month - March - over the 2010-2019 period and those who died due to COVID-19 in March 2020. The results are shown in Figure 2.

The highest number of deaths was reported in March 2018 - 542,519 (Figure 2). 2015 was the second one in terms of the number of people who died in the same month - March - with several 504,796. The number of people who died in the same month - March - in the years analyzed was less than 500,000.

Figure 1. *Categorised bar graph of primary data on the population of thirty-two European countries in 2020 and the deceased in those countries due to COVID-19 in March 2020*



Source. *In-house elaboration based on data copied from the websites: https://ec.europa.eu/; https://www.ecdc.europa.eu, as of 07.16.2020*

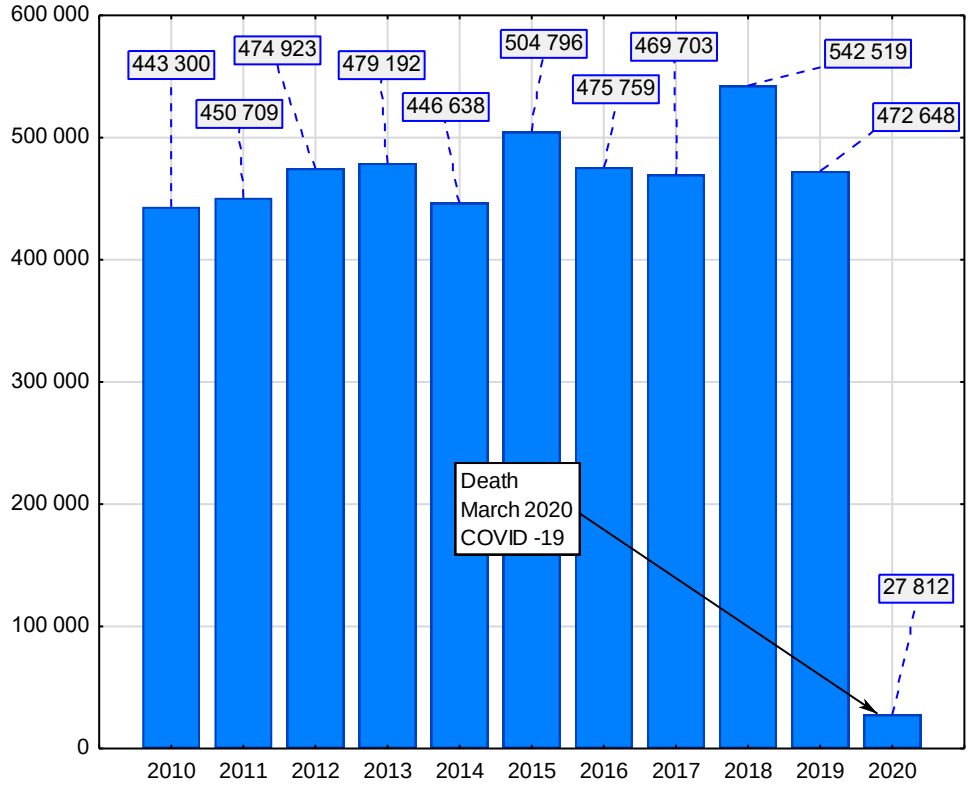
Visual observation of the data presented in Figure 2 shows that the number of deaths due to COVID-19 in March 2020 is different from the number of deaths in the same month - March - over the 2010-2019 period in thirty-two European countries.

For illustration, an attempt has been made to compare the quantities of deaths due to COVID-19 in March 2020 with the deaths in the same months - March - over the 2010-2019 period. Chain dynamics indexes have been calculated for this purpose. The results are shown in Figure 3.

Visual observation of the data compiled in Figure 3 allows us to estimate that those who died in March 2020 due to COVID-19 represent 6% of the number of deaths in the same month - March - 2019. It should also be added that in 2019 there was a 69,781 drop in deaths compared to 2018. It should be stressed that in the time span

of the same months under consideration (2010-2019), the chain dynamics index was the highest one, at 116% compared to March 2016. Comparing the months of March 2018 and 2020, the chain dynamics index for March 2020 has decreased to 5% compared to 2018. Another important issue is the observed trend of oscillating deaths around their average/mean level in the same months - March - over the 2010-2019 period.

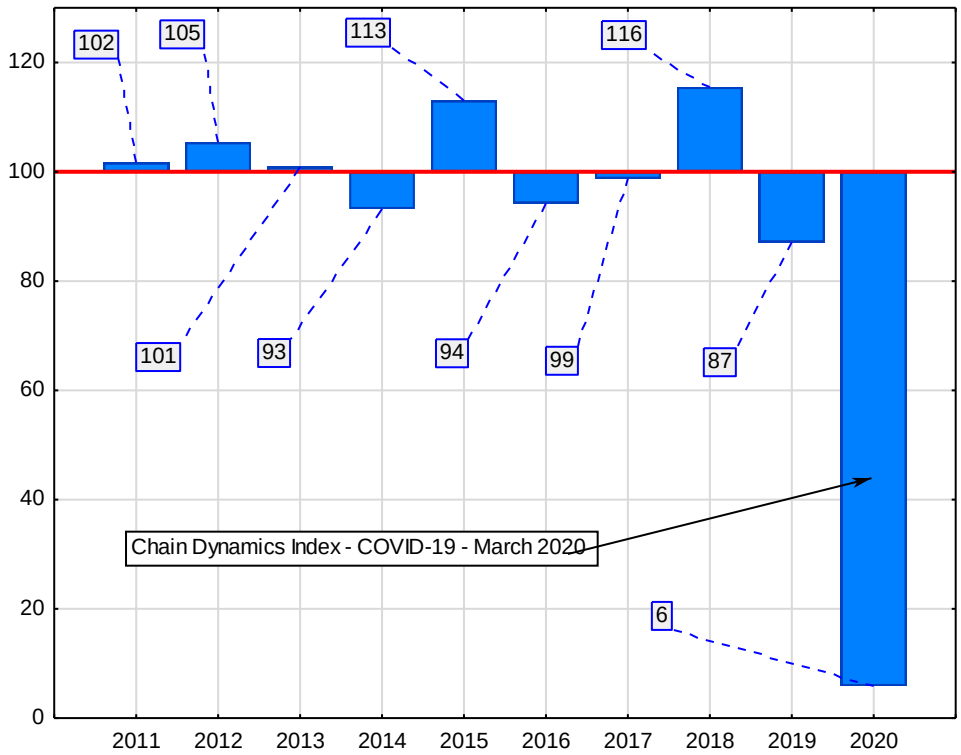
Figure 2. *This is followed by a categorised bar chart of data relating to those who died in the same month - March - over the 2010-2019 period in thirty-two European countries and to those who died due to COVID-19 in March 2020.*



Source: *In-house elaboration based on data copied from the websites: https://ec.europa.eu/; https://www.ecdc.europa.eu, as of 07.16.2020*

A further study was to draw categorized frame-nosed charts of primary data on those who died in the same month - March - over the 2010-2019 period in thirty-two European countries and to those who died due to COVID-19 in March 2020. The results are shown in Figure 4.

Figure 3. *Bar chart of chain dynamics indexes of primary data relating to those who died in the same month - March - over the 2010-2019 period in thirty two European countries and to those who died due to COVID-19 in March 2020 (basis: the deceased in March 2010)*

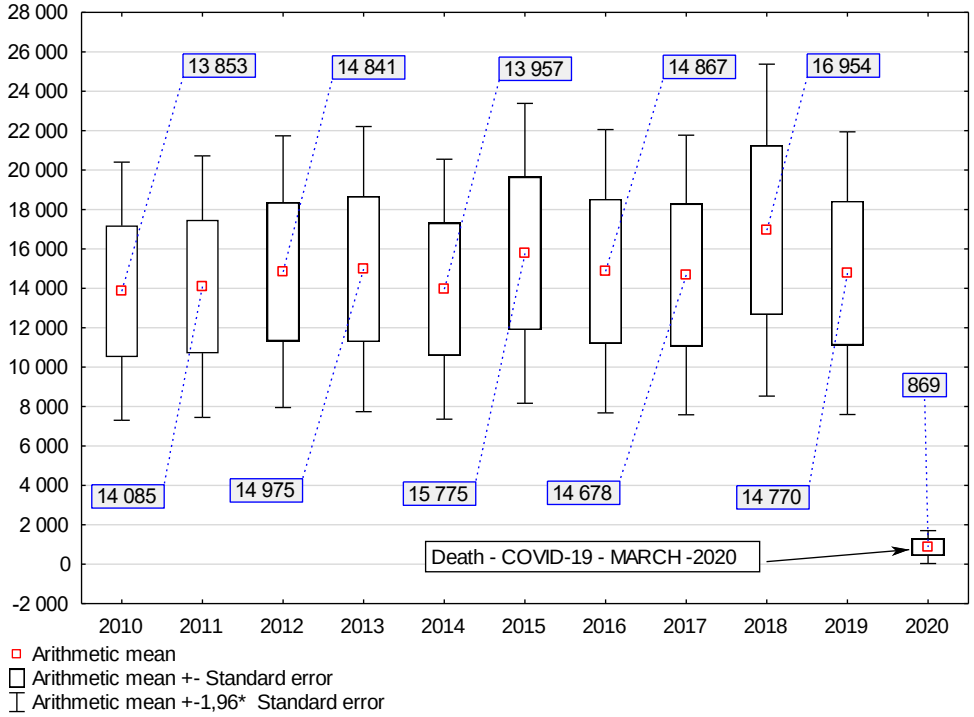


Source: *In-house elaboration based on data copied from the websites: https://ec.europa.eu/; https://www.ecdc.europa.eu, as of 07.16.2020*

An assessment of the data compiled in Figure 4 is the statement that the arithmetic average/mean of deaths in the same months - March - over the 2010-2020 period amounts to 13,603. The highest arithmetic average/mean was reported in March 2018, at 16,954. The arithmetic average/mean of the number of people who died due to COVID-19 in thirty-two European countries in March 2020 is 869. This average/mean represents only 6.4% of the arithmetic average/mean for the same months - March - over the 2010-2020 period.

A further stage of the analysis was to make a categorized frame-nosed chart of primary data with outlined raw data, arithmetic averages/means, and extreme values for those who died in the same months - March - over the 2010-2019 period, divided into thirty-two European countries and those who died due to COVID-19 in March 2020 (Figure 5).

Figure 4. *The categorised frame-nosed chart of data relating to those who died in the same months - March - over the 2010-2019 period in thirty-two European countries and to those who died due to COVID-19 in March 2020.*

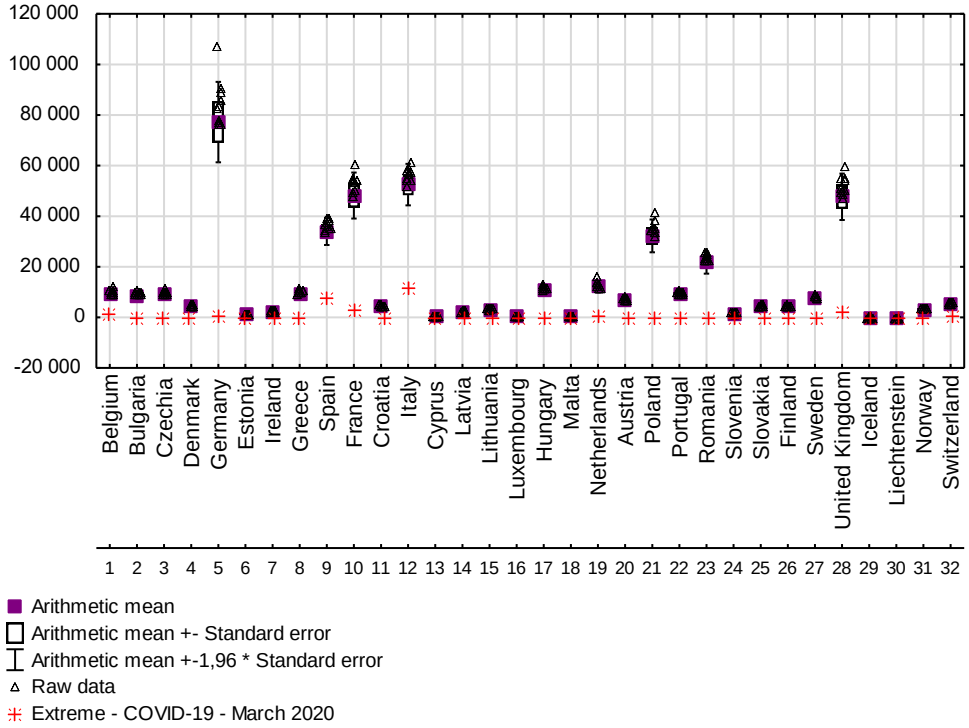


Source: *In-house elaboration based on data copied from the websites: https://ec.europa.eu/; https://www.ecdc.europa.eu, as of 07.16.2020*

An assessment of the data compiled in Figure 5 shows that the highest level of deaths in the same months - March - over the 2010-2020 period was in Germany. The arithmetic average/mean of deaths in Germany in the same months - March - over the 2010-2020 period was 77,238. Italy came second with 52,510, followed by France 48,174, Great Britain 47,695, Spain 34,030, and Poland 32,239. The other countries concerned noticed the arithmetic average/mean of fewer than 30,000 deaths in the same months - March. The important regularity is that those who died due to COVID-19, in each of the thirty-two countries considered, represent typically extreme values (Figure 5). A further analysis stage is to carry out a ranking (Figure 6) of the extreme values shown in Figure 5.

An assessment of the ranking (Figure 6) of the number of deaths due to COVID-19 in thirty-two European countries in March 2020 is the statement that the highest number of people died in Italy - 11,570. Then in Spain 7,340, France 3,022, the United Kingdom 2,043, Belgium 1,307. In other countries, the number of deaths caused by COVID-19 was less than 1,000

Figure 5. *The categorised frame-nosed chart of primary data with outlined raw data, arithmetic averages/means and extreme values for those who died in the same months - March - over the 2010-2019 period, divided into thirty-two European countries and those who died due to COVID-19 in March 2020.*



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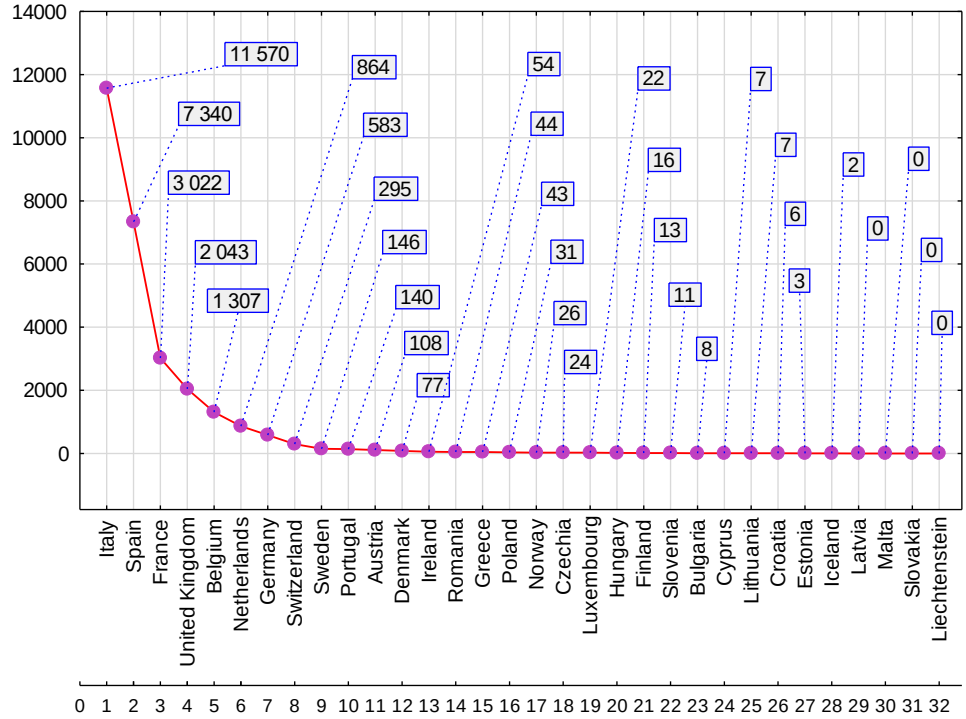
The next stage of the study is the multidimensional analysis of the dependent variables in the form of the same months - April - over the 2010-2020 period and the variables explaining them in the form of the number of deaths, including deaths due to COVID-19 in March 2020.

The first stage of the study was to draw a categorized bar chart of primary data on the population of thirty-two European countries in 2020 and the deceased in those countries due to COVID-19 in March 2020. The results are shown in Figure 7.

An assessment of the data compiled in Figure 7 is the statement that the number of people who died on COVID-19 in April 2020 represents 0.019% of the total population of the 32 European countries concerned. This is followed by a categorized bar chart of primary data relating to those who died in the same months - April - over the 2010-2019 period in thirty-two European countries and those who died due to COVID-19 in April 2020. The results are shown in Figure 8.

Figure 6. *Categorised linear chart with the ranking of primary data of the deceased due to COVID-19 in March 2020 in thirty-two European countries.*



Source: *In-house elaboration based on data copied from the websites: https://ec.europa.eu/; https://www.ecdc.europa.eu, as of 07.16.2020*

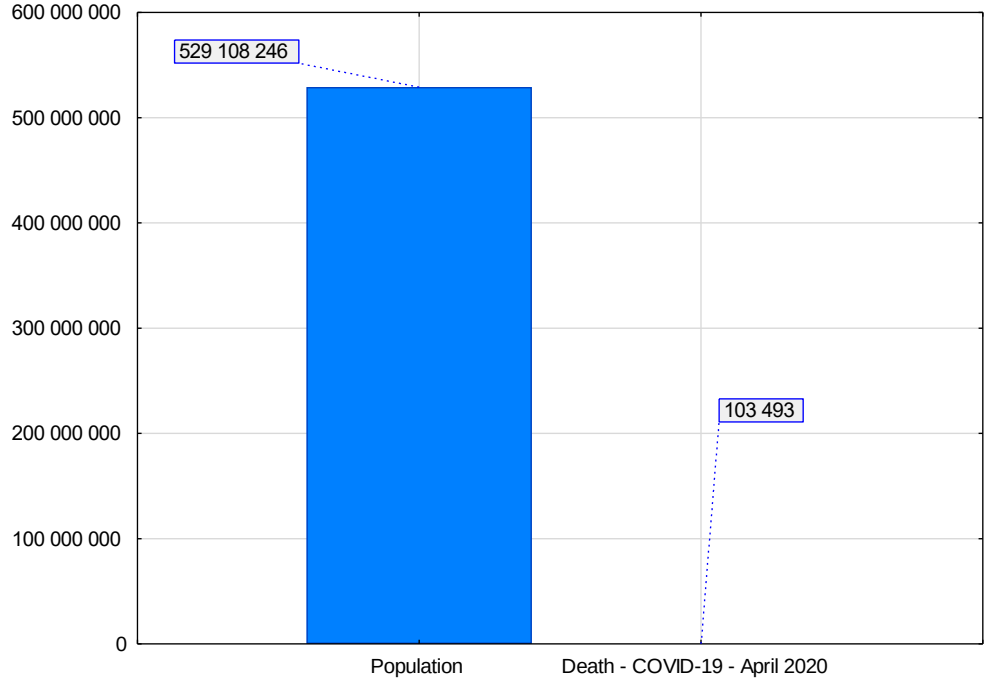
An assessment of the data presented in Figure 8 states that the number of deaths due to COVID-19 in April 2020 is significantly lower than the number of deaths in the same months over the 2010-2019 period. The number of deaths in the same months under consideration - April - over the 2010-2019 period is similar and oscillates around an arithmetic average/mean of 427,481, representing approximately 24% of those who died due to COVID-19 in April 2020.

The next stage of the study is to make the bar chart of chain dynamics indexes of primary data relating to those who died in the same months - April - over the 2010-2019 period in thirty-two European countries and to those who died due to COVID-19 in March 2020 (basis: the deceased in April 2010) (Figure 9).

Those who died in April 2020 due to COVID-19 represent 24% of people than the number of deaths in the same month in 2019 (Figure 9). The standard deviation of chain dynamics indexes for the variables under consideration over the 2010-2019 period is small and amounts to 4.34. A further study was to draw categorized frame-nosed charts of primary data on those who died in the same months - April -

over the 2010-2019 period in thirty-two European countries and to those who died due to COVID-19 in April 2020. The results are shown in Figure 10.

Figure 7. *Categorised bar graph of primary data on the population of thirty-two European countries in 2020 and the deceased in those countries due to COVID-19 in March 2020*



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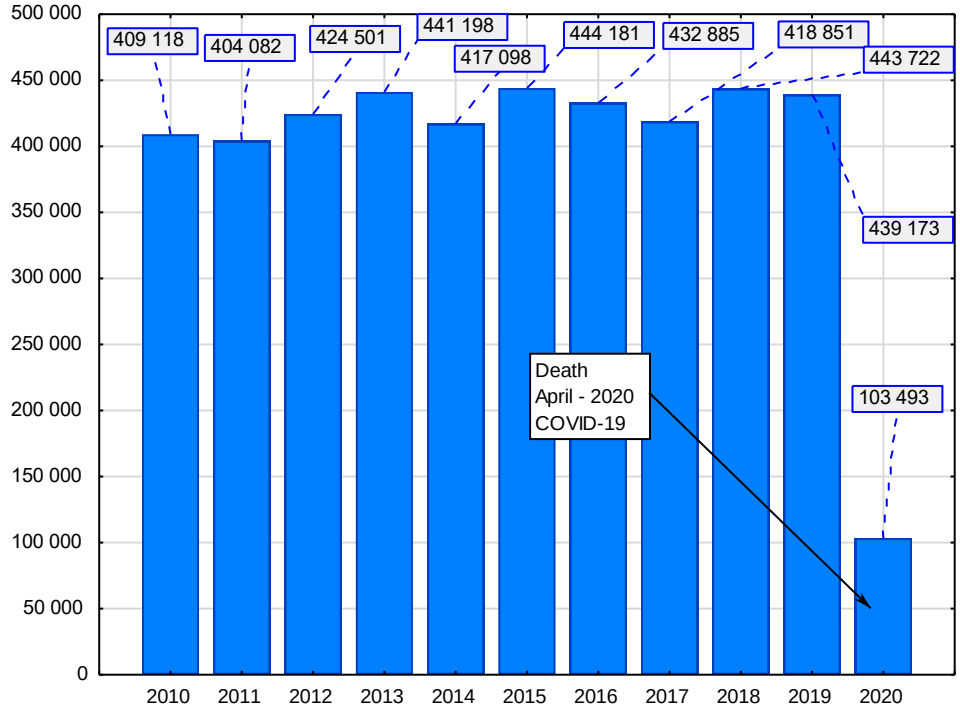
Visual observation of the data in Figure 10 shows that the arithmetic average/mean of those who died due to COVID-19 in April 2020 deviates from the arithmetic average/mean deaths in the same months 2010-2019 period. The number of deaths in the same months - March - over the 2010-2019 period in thirty-two European countries is similar and shows no outlier or extreme values. The highest arithmetic average/mean of deaths in the same months - April - over the 2010-2019 period was reported in 2015, amounting to 13,881.

The next stage of the analysis is to make a categorized frame-weighted diagram of primary data with outlined raw data, arithmetic averages/means, outliers, and extremes for the deceased in the same month March 2010-2020 with a breakdown into thirty-two European countries and the deceased in COVID-19 in April 2020 (Figure 11).

Figure 8. *The categorised bar chart of primary data relating to those who died in the same months - April - over the 2010-2019 period in thirty-two European countries and to those who died due to COVID-19 in April 2020.*



Source: *In-house elaboration based on data copied from the websites: https://ec.europa.eu/; https://www.ecdc.europa.eu, as of 07.16.2020*

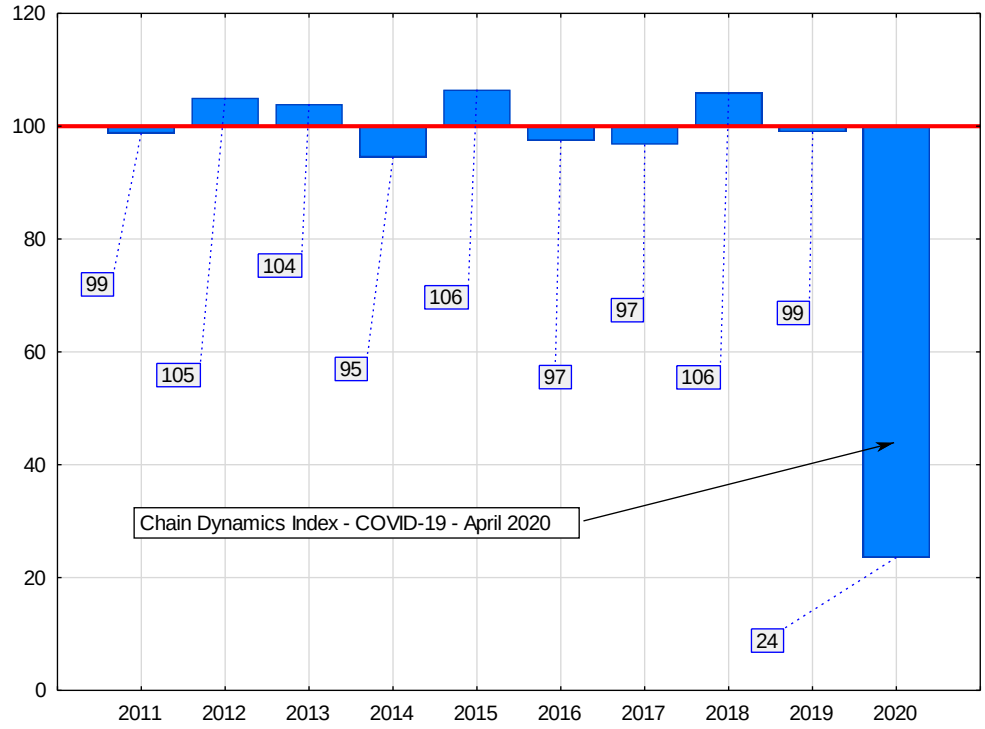
Visual observation of data on deaths in the same months - April - over the 2010-2020 period (Figure 11) in thirty-two of the countries concerned shows that the number of deaths in the same April months is similar to the same March months. There are differences in extreme values, that is, people who died due to COVID-19 in April 2020.

For illustrative purposes, it was decided to examine the values considered to be extreme in Figure 12. To this end, Figure 10 outlines a categorized linear chart with the ranking of primary data of the deceased due to COVID-19 in April 2020 in thirty-two European countries.

An assessment of the visual observation of the data in Figure 12 is the statement that most people have died due to COVID-19 in the following countries: the United Kingdom 24,054, France 21,063, Spain 17,203, Italy 16,091, Belgium 6,686, Germany 5,705, Netherlands 3,847, Sweden 2,316, Ireland 1,136, Switzerland 1,112. In other countries, the number of deaths due to COVID-19 was less than

1,000. An important piece of information is that, in April 2020, people who died due to COVID-19 were reported in each of the 32 European countries concerned.

Figure 9. *The bar chart of chain dynamics indexes of primary data relating to those who died in the same months - April - over the 2010-2019 period in thirty two European countries and to those who died due to COVID-19 in March 2020 (basis: the deceased in April 2010)*



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3. Summary and Conclusions

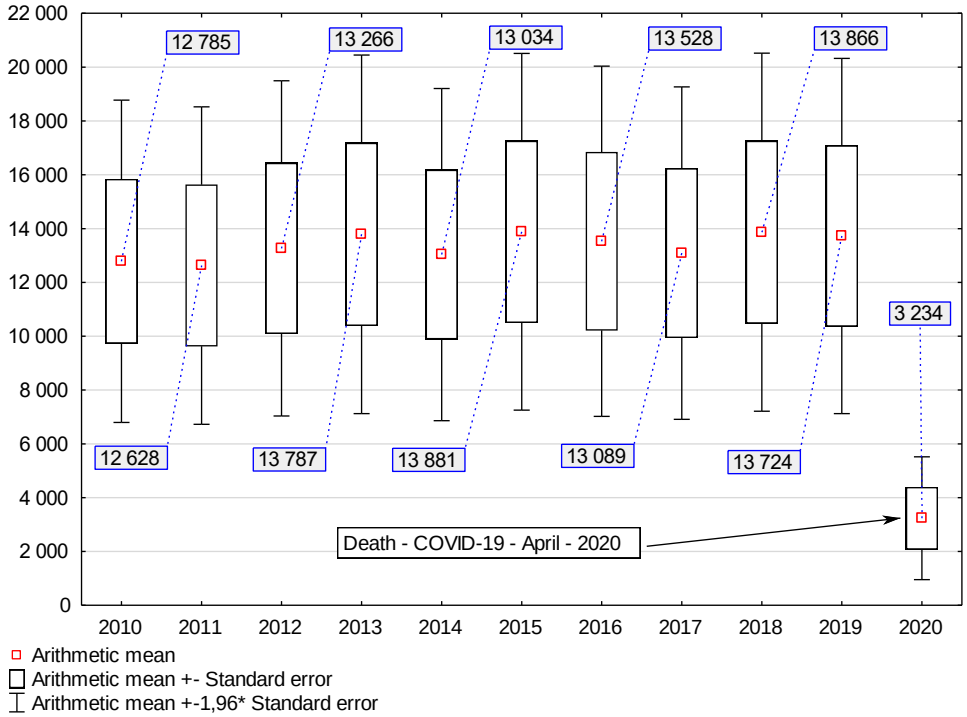
The intended goal of the paper has been achieved. A multidimensional analysis and evaluation of data on the number of human deaths regarding COVID-19 in thirty-two European countries were carried out.

The analyses carried out assess that the number of people's deaths due to COVID-19 regarding the total population of the test object makes a small statistical error and represents 0.005% of the total population in March 2020. However, in April 2020, there was an increase to 0.019% of the total population.

Looking at and comparing the retrospective data for the same months - March and April - over the 2010-2019 period, regarding the deaths of people in 32 countries in

consecutive years, and regarding the deaths due to COVID-19 in the same months in 2020, we can observe that the number of deaths due to COVID-19 in March 2020 represents 6% of the number of deaths in 2019. In contrast, the number of deaths due to COVID-19 in April 2020 represents approximately 24% of the number of deaths reported on average/mean over the 2010-2019 period in the same months - April.

Figure 10. *The categorised bar chart of primary data relating to those who died in the same months - April - over the 2010-2020 period in thirty-two European countries and to those who died due to COVID-19 in April 2020.*



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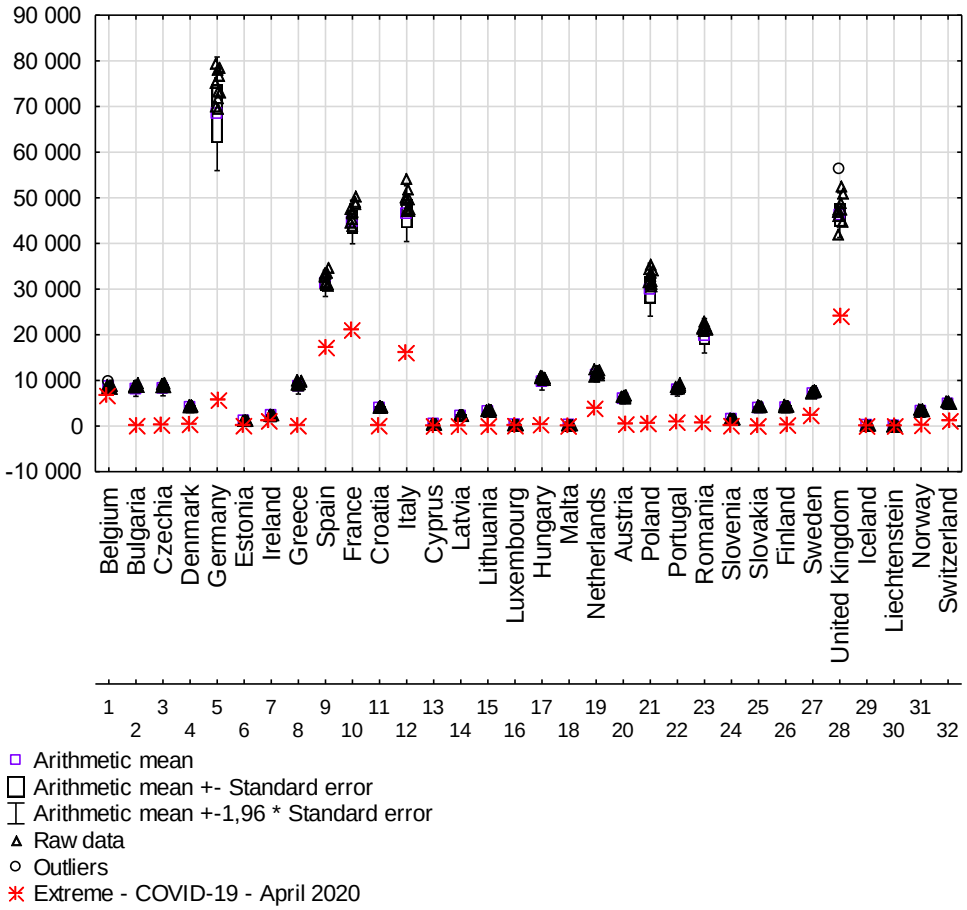
Looking at thirty-two European countries, it has been observed that most people are statistically dying in Germany. The arithmetic average/mean of deaths in Germany in the same months - March - over the 2010-2020 period was 77,238. Italy came second with 52,510, followed by France 48,174, Great Britain 47,695, Spain 34,030, and Poland 32,239. The other countries concerned noticed the arithmetic average/mean of fewer than 30,000 deaths in the same months - March. The important regularity is that those who died due to COVID-19, in each of the thirty-two countries considered, represent typically extreme values (Figure 5).

However, the number of deaths in the thirty-two European countries under consideration in April months is similar to March. There are differences in extreme values, that is, people who died due to COVID-19 in April 2020. In April 2020, an increase in the number of COVID-19 illness cases was observed.

Figure 11. *The categorised frame-nosed chart of primary data with outlined raw data, arithmetic averages/means, outliers and extremes for those who died in the same months - March - over the 2010-2020 period, divided into thirty-two European countries and those who died due to COVID-19 in April 2020.*



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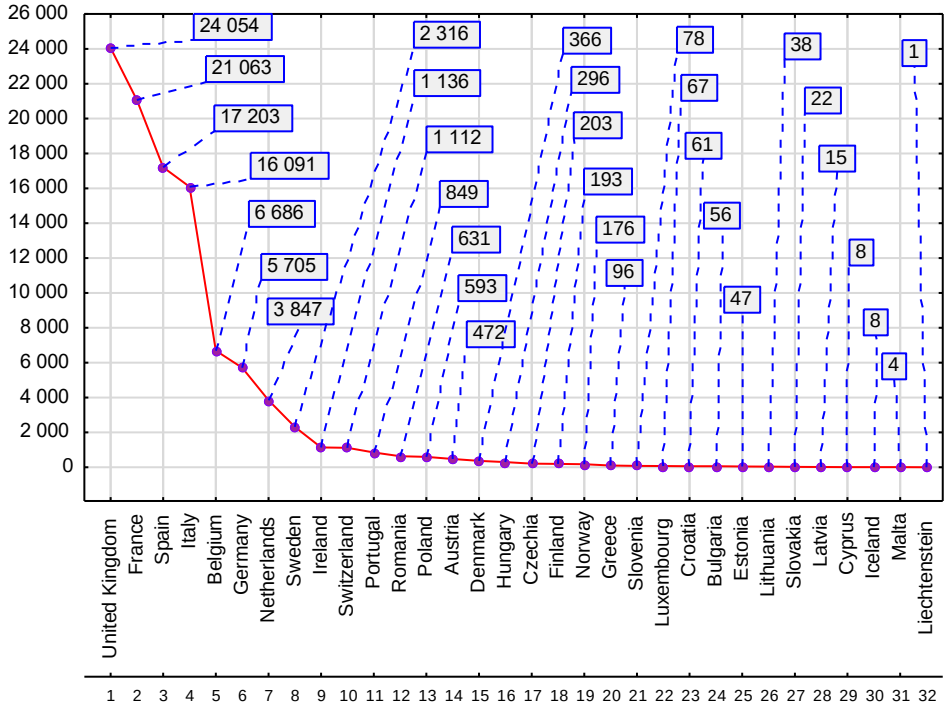
An assessment of the ranking (Figure 6) of the number of deaths due to COVID-19 in thirty-two European countries in March 2020 is the statement that the highest number of people died in Italy - 11,570. Then in Spain 7,340, France 3,022, the United Kingdom 2,043, Belgium 1,307. In other countries, the number of deaths caused by COVID-19 was less than 1,000.

An assessment of the visual observation of the data in Figure 12 makes the statement that most people have died due to COVID-19 in the following countries: United Kingdom 24,054, France 21,063, Spain 17,203, Italy 16,091, Belgium 6,686, Germany 5,705, Netherlands 3,847, Sweden 2,316, Ireland 1,136, Switzerland 1,112. In other countries, the number of deaths due to COVID-19 was less than 1,000. An important piece of information is that, in April 2020, people who died due to COVID-19 were reported in each of the 32 European countries concerned.

Figure 12. *Categorised linear chart with the ranking of primary data of the deceased due to COVID-19 in April 2020 in thirty-two European countries.*



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The analysis concludes that the number of deaths due to COVID-19 in European countries represents, are, on average/mean, around 24% of the number of deaths of the retrospective data for the same months in each country.

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