

# Spatial distribution of the virus connected to demography

## Abstract

This study will find the connection between Covid19 pandemic spread and super aged societies.

The super aged societies are, in this study, Italy and Japan. Italy has been at the center of the media as a particular situation in Europe, due to the high life expectancy, thanks to a national health system coverage.

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## Forewords

Humanity is constantly affected by bacteria, viruses, environmental diseases, but it always manages to overcome adversity. It has to face wars, against everyone and everything, but it manages to overcome those everyday.

We are left with the hope that science and technology will help us increasingly more, but science is not enough, since it is not always connected with technology.

Unfortunately, during the last pandemic, the disease has outweighed all the efforts. It is not possible that after more than two years of lock-down, we all continue to be the slaves of an infirmity which is considered serious, and contagious by all the scientists, but which, in effects, does not create great damage, not bigger than the entire global climate change, which is considered by the United Nations the cause of 5 million deaths a year.

## Introduction

### A communicable disease

Covid19 has killed - virologists say - some hundreds thousands people. It is a form of flu which has always been repeated every year, but which, after it has changed its name, seems more serious. It is called a virus, and this seems terrible, but viruses are present in humans and animals in countless quantities; they have always been part of the history of the living beings. The name of Corona was repeated until the number 19. This means that Covid 19 is a revisitation of an old ailment and not just because it broke out in 2019.

What is even less understood is how a disease of this century is treated like the plague of the 14<sup>th</sup> century, or like this of the 17<sup>th</sup> century. Many things are not understandable: why it has been overestimated, exaggerated, expanded by the media, to the point of terrorizing people. Indeed, it has become a political instrument to manage governments, or globalization. Opponents, like Levi in France- are speaking of health Stalinism that was created from too many excessive impositions.

The social, economic, and political resistances are manifested by many; there are groups of people who believe in the conspiracy theory, believe in the malicious and artificial origin of the new virus. Many things are yet to be discovered, evaluated and judged; first of

all, it has to be considered why there are different levels of incidence in different continents and countries.

The reasons may be political, but that remains to be determined. Surely, there are geographical reasons that show us that in hot countries the disease affects less. There are obviously demographic reasons, in fact, in the most densely occupied areas, the contagiousness is greater, in poorer areas there are fewer means of defense and tools, the first of which should be the strength of the immune system of every individual, which is not ensured in the situations where a good nutrition is lacking.<sup>1</sup>

### The Italian situation

To support these hypotheses, in this work, we will refer to the case of Italy, one of the most affected countries in the world.

When the disease arrived in the capital, the director of a geriatric hospital, the Spallanzani hospital in Rome, declared that the virus was capable of attacking, in particular, not only older people, but those who, in addition to age, were suffering from other infirmities, to mean that the reactions can be different, but also that the defenses must start from the individuals.

Certainly, in the early days, after people had arrived from China, there were many deaths in retirement homes for the elderly, but the deaths at a young age were much less, very rare for the very young.

In Italy, on the other hand, the State has taken charge of everything, of organizing life, work, school, sport, shopping, events, and shows, that is, it has taken care of everything, stopping all the activities, blocking the economy, even after the serious economic crises of the recent years.

The Italian population has been vaccinated three times, and a fourth vaccination is already being considered, while the population over fifty years, which does not accept the vaccine, is penalized and, despite this, the media continue showing terror. It is not enough that, because of the many lock-downs, many activities have been closed, many companies have gone bankrupt, many people are until now unemployed and in debt.<sup>2</sup>

Italy is one of the countries with the greatest seniority in the world, both for the food diet, linked to the Mediterranean tradition, and for the free and efficient health system. The percentage of the population in old age is also high, due to the lowering birth rate. Some

Italian regions have birth rates among the world's minors, so Italy has become a case study.

### World population data in 2020

Population over 65 years and 0-15 years in European Union in 2020, and in some significant other European Countries. Data in ascending order (Table 1).

**Table 1** Cyprus has the lowest percentage of aged population, and Germany the highest; Austria has the lowest number in percentage of young people

Country	Pop >65	Country	Pop <15
Cyprus	12,97	Austria	10,01
Ireland	13,82	Germany	12,89
Luxemburg	15,37	Poland	13,58
Slovakia	17,05	Portugal	14,12
Norway	17,43	Croatia	14,16
Romania	17,58	Luxemburg	14,38
UK	18,48	Bulgaria	14,52
Spain	18,49	Greece	14,53
Poland	18,72	Hungary	14,54
Switzerland	18,73	Holland	14,83
Liechtenstein	18,88	Slovakia	14,84
Belgium	19,21	Slovenia	15,02
Holland	19,82	Romania	15,13
Austria	19,87	Czech Rep.	15,17
Denmark	19,91	Latvia	15,2
Bulgaria	20,06	Liechtenstein	15,26
Czech Rep.	20,23	Italy	15,32
Lithuania	20,45	Sweden	15,34
France	20,46	Switzerland	15,34
Latvia	20,5	Cyprus	15,69
Sweden	20,59	Norway	16,11
Hungary	20,69	Estonia	16,22
Portugal	20,92	Finland	16,41
Estonia	21	Denmark	16,42
Croatia	21,06	Lithuania	16,73
Slovenia	21,23	Belgium	17,22
Malta	21,3	UK	17,63
Italy	22,08	Spain	17,71
Finland	22,26	Malta	17,96
Greece	22,43	France	18,36
Germany	22,99	Ireland	21,15

Source: The World Factbook, <https://www.cia.gov/the-world-factbook/countries/people-and-society>.

For a world comparison, we must affix to these data the numbers regarding Japan. In the same year 2020, the percentage of population over 65 was 29,18, and the population under 15 years was 12,49.<sup>3</sup>

When a country has the percentage of old population more than 21%, it is called a "super aged society". The fact that Japan has had less death cases, and a lower media coverage than other countries with a younger population, is associated with a respectful, controlled and educated behavior.

Table 1 demonstrates that Cyprus has the lowest percentage of aged population, and Germany the highest; Austria has the lowest number in percentage of young people, but Ireland the highest.

### Italy up close

These data come from international statistics, but if we consider the national data for Italy, deriving from the Italian National Statistical Institute (ISTAT) we will find updated information.<sup>4</sup>

As we can see in Table 2 like the youth index is collapsing, the old age index is augmenting.

**Table 2** Youth index is collapsing, the old age index is augmenting

% Distribution of pop. age in Italy on the 1st day of every year	2018	2019	2020	2021	2022
< 15	13,4	13,2	13	12,9	12,7
> 65	22,6	22,9	23,2	23,5	23,8

Source: ISTAT 2022.

Italian population is getting old quickly, if in 2020 the percentage of those over 65 was 23,02, at the beginning of 2022, was 23,8. That means quite a fourth of the entire national amount. The opposite for young people, in 2020 the percentage of people under 15 years was 13, 00; on January 2022, it has decreased until 12,7, similar to the Austria percentage in 2020.

### Conclusion

Additional mortality affects men and the elderly more. In Italy the resident population has been steadily decreasing since 2014, when it amounted to 60.3 million. As of January the 1th, 2022, according to the first provisional data, the population drops to 58 million 983 thousand units, so that over 8 years the cumulative loss is equal to 1 million 363 thousand. Of this total amount, the demographic behaviors that emerged during the 2021 pandemic alone are responsible for a decrease of 253 thousand units. The lifestyle is affecting the living conditions and the life expectancy more than some illnesses alone, like Covid19.<sup>5</sup>

### Acknowledgments

None.

### Conflicts of interest

There are no conflicting interests declared by the authors.

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