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Abstract

The COVID-19 pandemic opens up a wide range of interesting issues related, on the one hand, to the causes that have facilitated its expansion and, on the other, to the measures that can mitigate its effects.The aim of this work is to perform an analysis of the impact of the COVID-19 disease from an Inequality of Opportunity approach, trying to distinguish the impact due to circumstances and efforts. With this aim we pose different questions: How much of the effect of COVID-19 disease is determined by unalterable circumstances of the region where one lives? How much of these effects depends on countries' performance? And more specifically, which factors or circumstances are the ones with higher impact in the incidence of COVID-19 disease? The answers to these questions can be of great help in order to understand to which extent the effects of the Covid-19 disease could be mitigated through suitable measures. The variables we include in our analyses are able to explain more than half of the variability in the fatality rate. We found that tourism arrivals are of great importance to explain the fatality rate of the COVID-19. Likewise, we found that the initial socio-economic circumstances, the health endowments and the political response to contain the pandemic lost relevance as the disease spreads. Finally, our findings suggest that containment policies have had little effect in decreasing the fatality rate.

Keyword: Inequality of opportunity, Europe, COVID-19

JEL Cassification: I1, I14, I31

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INTRODUCTION

The coronavirus disease, COVID-19, experienced a rapid spread throughout the world, especially in Europe, during the first quarter of 2020. The eleventh of March the disease reached the pandemic status as stated by the World Health Organization (WHO). By this month, the COVID-19 outbreak became uncontrolled in most European countries and authorities had to face unprecedented challenges.

The impact of the pandemic reaches worrying levels in both the health and economic context, affecting not only growth prospects but also geopolitical relations (Gaub & Boswinkel, 2020; Peyrony, Rubio, & Viaggi, 2021) and global inequality (Deaton, 2021).

The need to understand the evolution and explanatory factors of the pandemic has led to several research contributions, often based on retrospective projections or analysis of counterfactual scenarios.

The aim of this work is to perform an analysis of the impact of COVID-19 disease from an Inequality of Opportunity approach, trying to distinguish the impact due to circumstances and efforts. With this aim we pose two questions: 1) What are the reasons of the observed fatality rate in European Countries? and 2) Which factors explain the observed variability in the fatality rate between countries? The answers to these two questions can be of great help in order to understand to which extent the effects of the Covid-19 disease could be mitigated through suitable measures.

To carry out this analysis we apply the Inequality of Opportunity (IOp henceforth) approach, traditionally used to measure inequalities in income at an individual level. According to Roemer, (1993, 1998) there is equality of opportunity in an outcome (income, wages, wealth, education, …) when the amount of this outcome perceived by individuals only depends on the degree of effort exerted by individuals and not on their circumstances. The Roemerian approach requires to make a distinction between two different components: *Circumstances* which are factors beyond individuals' responsibility and *Efforts* which can be attributed to individuals' performance.

Although the IOp approach has mainly been used at individual or household levels, this analysis has also been applied at country level by Milanovic, (2015) with the aim of computing how much income is determined by the country of residence of each individual. With this objective, Milanovic proposes a model whose dependent variable is country income percentiles, considering as circumstances country-specific characteristics (mean income and Gini coefficient of each country).

In this work, we follow at some extent Milanovic´s IOp approach, with the aim of studying the differential effect of the COVID-19 disease in European countries. For this purpose, we consider as outcome variable the fatality rate of COVID-19 (deaths divided by positive cases) and we incorporate a wide variety of national-level variables considered as *Circumstances* and *Efforts.* This IOp focused analysis will help us to understand how country-specific factors or circumstances and the efforts exerted by each government in stopping the pandemic have affected the fatality rate in the European countries.

Despite the relationship between inequality and COVID-19 has been previously analysed (Ginsburgh, Magerman, & Natali, 2021; Wildman, 2021), our approach has not yet been used to analyse the effects of COVID-19 distinguishing the impacts due to circumstances and efforts. We believe that this kind of analysis will provide new and interesting evidence, useful in understanding to which extent the effects of the Covid-19 disease could be mitigated through suitable measures.

The motivation of this work is not to evaluate public policies, nor public policy response to the COVID-19 crisis, but to extract from the analyses useful information that could help improve responses and actions aimed at reducing the effect of a pandemic.

Taking into account the statistical and methodological difficulties inherent to this kind of analyses, the proposed methodology has been applied to analyse the impact of the COVID-19 disease in European countries during the first wave of the virus. For this purpose, we use information of cumulative incidence indicators at the end of June and July.

Our findings show that the variable *Tourism arrivals* which has been included as a proxy for the international incoming movements, is the most important one in explaining the fatality rate of the COVID-19. Furthermore, more than a half of the variability in the fatality rate is explained by the variables we used in our analyses. Likewise, we found that the initial socio-economic circumstances, the health endowments and the political response to contain the pandemic lost relevance as the disease spreads across the countries. Finally, our findings suggest that policies trying to contain the pandemic spread have had little effect in decreasing the fatality rate.

It is important to bear in mind that these results are limited by the lack of homogeneity in the data and in addition, the fact that the virus is still having a serious effect in the world. Consequently, at this moment we can only partially analyse its impact and try to shed some light on the impact of different factors (circumstances and efforts).

The rest of the paper is structured as follows. Section 2 presents the data and the main descriptive statistics used in our analyses. Section 3 describes the methodology and reports our main findings. Finally, Section 4 outlines the conclusions.

DATA AND DESCRIPTIVE STATISTICS

Analysing the impact of the pandemic requires objective and reliable information on COVID-19, including how many have been infected and how many have died from this cause. As emphasized by (Georgiou, 2020) official statistics meeting the highest quality principles in the collection, processing and dissemination of information should be available.

Given that the official statistics still do not provide the necessary high quality homogeneous information, our empirical analysis has faced several problems to develop an adequate database. This section is divided into two parts: in the first one we provide information regarding the datasets used and the variables selected for our analyses, while in the second part we show some descriptive statistics of the data and variables used.

Data

In order to carry out our analyses we need to construct a database with the necessary variables, that include both health and socioeconomic characteristics.

First of all, it is necessary to adopt a *variable of advantage*, that is to say, the variable or outcome of reference in which we will measure the effect of the COVID-19 disease. Then, we need to include a set of regressors which will account for the particular circumstances of each country and for the efforts exerted by the country to fight the pandemic.

Following the IOp approach, it is assumed that the selected outcome variable could be due to three sort of factors 1) the disease itself, 2) country specific circumstances and 3) efforts exerted by each country to prevent the outbreak spread.

We chose as variable of advantage the cumulative fatality rate per 100,000 inhabitants which is computed by dividing the cumulative deaths by the cumulative positive cases. We construct this variable with the data of positive cases and deaths of the COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) (Dong, Du, & Gardner, 2020) and population data of 2019 for each country retrieved from the World Development Indicators (WDI) (World Bank, 2021).

The variables we use as circumstances were retrieved from the World Development Indicators (WDI) (World Bank, 2021). We divided circumstances into two types:

Socio-economic: *Population 65+* (Population aged 65 and above, % of total population), *Density* (people per sq. km of land area, 2018), *Urban* (urban population as percentage of total population 2019), *Tourism arrivals* (International tourism, number of arrivals in millions in 2018).

These socio-economic variables are likely to have a positive effect on the fatality rate. It is expected that a higher percentage of population aged 65 or above would increase the fatality rate since aged individuals are more likely to suffer pre-existing medical conditions and therefore, are more vulnerable to the disease (Borgonovi & Andrieu, 2020). Likewise, in countries with more density and more urban population the spread of the disease is likely to be greater, this may cause a collapse in health services which ultimately could provoke an increase in the fatality rate. With regard to *Tourism arrivals*, we include this variable as a proxy of the international incoming movements which are expected to contribute greatly to the outbreak spread and following the same reasoning as for *Density* and *Urban* will cause a higher fatality rate.

Health factors and initial endowments: *Health exp.* (Current health expenditure per capita, 2018), *UHC Coverage* (Universal Health Care service coverage index 2017), *Physicians*[1] (physicians per 1,000 people), *Nurses*[2] (nurses and midwives per 1,000 people), *Beds*[3] (hospital beds per 1,000 people). Health variables are likely to be negatively related with the fatality rate, it is expected to have a lower fatality rate in countries that have a greater number of beds, nurses and doctors per population, more expenditure per capita in health and with better health care coverage.

With regard to the effort variables, we decided to include an index which incorporates the measures implemented by each country to prevent the outbreak spread, this index is expected to have a reducing effect on the fatality rate. We use for this purpose the *Stringency Index*, the *Government Response Index* and the *Containment and Health Index* from The Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2020). These indices are composite measures which involve an additive score of indicators with regard to closure policies, economic policies and health system policies.

More specifically, for each country we use as effort variable the average value of the index until the country reaches an incidence of 1 positive per 1,000,000 inhabitants, which approximately corresponds with the timing where the pandemic became uncontrolled. Consequently, the effort index used will represent the efforts exerted by each government previous to the uncontrolled outbreak spread.

Descriptive statistics

Table I shows the cumulative fatality rate per 100,000 inhabitants for each country analysed at the end of June and July and also the date in which each country reached an incidence of 1 positive case per 1 million inhabitants. We show a huge range of European countries (40 countries), although some of them have been excluded due to lack of data (Armenia, Kosovo, Liechtenstein, Monaco, Montenegro, North Macedonia).

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[1] The variable Physicians is constructed with the most recent information for each country: 2018: CZ, EE, FR, GE, HU, IS, IE, IT, LT, NO, UK. 2017: AT, BE, DE, EL, LV, LU, MD, NL, PL, PT, RO, RS, SK, SI, ES, CH, TR. 2016: HR, CY, DK, FI, SE. 2015: BY, BA, BG, MT. 2014: AZ, UA. 2013: AL.

[2] The variable Nurses is constructed with the most recent information for each country: 2018: BE, BA, EE, FR, GE, HU, IS, IT, LT, MT, NO, PL, UK. 2017: AT, CZ, DE, EL, IE, LV, LU, MD, NL, PT, RO, SI, ES, SE, CH, TR. 2016: AL, HR, CY, DK, FI, RS, SK. 2015; BY, BG. 2014: AZ, UA.

[3] The variable Beds is constructed with the most recent information for each country: 2019: BE, DK, IS, LU, UK. 2018: AU, CZ, EE, FI, FR, EL, HU, IE, IT, LV, LT, NL NO, PL, PT, SK, SI, ES, SE, CH, TR. 2017: BG, HR, CZ, DE, MT, RO, RS. 2014: AZ, BY, BA, GE, MD, UA. 2013: AL.

[INSERT TABLE I HERE]

It can be seen that most countries reach an incidence of 1 positive per million inhabitants in March, only some east European countries (Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Poland, Slovakia and Ukraine) reach this point in April. This means the pandemic spread more or less at the same time across the European continent.

With regard to the fatality rates at the end of June and July countries with the highest incidence in both months are Belgium, Italy, France, United Kingdom, Hungary, Netherlands and Spain with an incidence above 0.10 per 100,000 inhabitants. On the opposite side, the countries with the lowest incidence are Iceland, Belarus, Malta, Slovakia, Azerbaijan, Georgia and Luxembourg. Table I also shows the variability in the fatality rate between countries, it can be seen the variance is slightly higher in June than in July.

Information regarding the variables used as circumstances and efforts is summarized in Table II. It can be seen that some variables show a great variability, such as the cumulative fatality rates, *Density*, *Tourism arrivals* or *Health expenditure*. However, others show a low standard deviation such as *Physicians*, *Beds* or the OxCGRT indices.

[INSERT TABLE II HERE]

METHODOLOGY AND EMPIRICAL ANALYSES

In our empirical analyses we try to answer the two research questions we previously posed: 1) What are the reasons of the observed fatality rate in European Countries? and 2) Which factors explain the observed variability in the fatality rate between countries? For this purpose, this Section is divided into two parts, one for each of the research questions.

1) What are the reasons of the observed fatality rate in European Countries?

In order to answer this question, we performed several regressions and we found that most variables were no significant to explain the cumulative fatality rate at the end of June and July. Despite of this, the coefficients of the variables show the expected sign. Table III and IV show the best regression fits we found for the cumulative fatality rate at the end of June and July respectively.

[INSERT TABLE III HERE]

[INSERT TABLE IV HERE]

Results are quite similar for the two months. It can be seen that in all regressions, the most significant variable is *Tourism arrivals*, which shows a positive sign, indicating a direct relationship between the arrivals of tourism and the cumulative fatality rate. With regard to the other variables included in these regressions, *Population 65+* is significant in most cases, also showing, as expected, a positive effect in the cumulative fatality rate.

The remaining variables included in these regressions are not significant. Nevertheless, the sign of their coefficient is the expected. The three indices and the variables *Physicians* and *Beds* have a negative coefficient, meaning that both the measures taken to contain the outbreak spread and the initial endowments in health services would reduce the fatality rate of the disease.

Having these results in mind we now wonder if the variables previously analysed have also a role in explaining the differences observed in the fatality rates between the European countries.

2) Which factors explain the observed variability in the fatality rate between countries?

In this subsection, our aim is to find out what factors explain the differences in the cumulative fatality rate for the European countries. For this purpose, we apply an Inequality of Opportunity approach (IOp henceforth).

From an IOp perspective, we can distinguish between three types of factors that affect the observed inequality or variability in the cumulative fatality rate of the COVID-19 disease:

1) Circumstances: assuming as circumstances the specific conditions of each country before the pandemic, this category includes the socio-economic and health variables.
2) Efforts: since this category includes the efforts made by each country in an attempt to stop the outbreak spread. we use as proxy for the efforts the OxCGRT indices.
3) The disease itself: part of the observed fatality rate will be solely due to the severity of the disease.

We make an attempt to disentangle the causes of the differences in the fatality rate. We wonder how much variability of the fatality rate cannot be solely attributed to the disease and therefore may be caused the circumstances and efforts.

For this purpose, we use the decomposition procedure based on the Shapley value, which computes the marginal effects of each circumstance and effort variables under different sets of variables, and provides results of an inequality index, in this case the GE(0).

To observe the marginal effect of each variable, this procedure considers all possible sets that only differ in the inclusion or omission of the circumstance analysed. Subsequently, the weighted average of the marginal effects of all possible permutations is taken as the contribution of each variable to the variation in the cumulative fatality rate.

We implement the Shapley value procedure for several sets of variables. We consider the sets of variables of the regressions showed in Tables III and IV and we also include more complete specifications. Variables are divided in four groups: three groups of circumstances (Health variables, Tourism arrivals, Demographic variables) and one group of efforts which include one of the OXCGRT indices.

Tables V and VI show the contribution of the different variables and groups of variables to the variability of the cumulative fatality rate at the end of June and Tables VII and VIII at the end of July.

[INSERT TABLE V HERE]

[INSERT TABLE VI HERE]

[INSERT TABLE VII HERE]

[INSERT TABLE VIII HERE]

It can be seen that, in all the sets on which the Shapley value procedure was implemented, the variable which contributes the most to explain the variability in the cumulative fatality rate is *Tourism arrivals*, which explains more than half of the explained variability in all the computed sets. *Population 65+* is the variable with the second highest contribution to explain the differential cumulative fatality rate between countries, followed by the group of health variables and the OxCGRT indices.

It is observed that the OxCGRT indices contribute very little to explain the differences in the fatality rate, which would suggest efforts made by the countries to prevent the outbreak spread have barely influenced on the fatality rate. These results are in line with an analysis performed by the OECD Economics Department using the OxCGRT data, showing that containment policies seems to have a small effect in reducing the spread of the virus (Bonacini, Gallo, & Patriarca, 2021; Égert, Guillemette, Murtin, & Turner, 2020).

Considering the weight of explained variability over the overall variability in the cumulative fatality rate, Tables V and VI show that, for the sets used in the regressions, variables explain on average around 50% of the overall variability in the fatality rate. Tables VI and VII show that including groups with more variables, this percentage would increase to approximately 60%. In addition, it should also be noted the increase in the contribution of the health variables when including more variables to the mentioned group.

When comparing the two months, although the results are similar for both, in June the variables analysed explain a slightly higher part of the overall variability of the fatality rate. This would suggest that the initial socio-economic circumstances, the health endowments and the political response to contain the pandemic have lost importance as the disease spreads across the countries.

CONCLUDING REMARKS

Our paper makes a preliminary but suggesting analysis of the impact of the COVID-19 disease on European countries, using an Inequality of Opportunity approach to understand better the outbreak spread of the COVID-19 disease in Europe during the first wave that started around march of 2020.

According to the obtained results we are able to successfully answer the two questions we posed: 1) What are the reasons of the observed fatality rate in European Countries? and 2) Which factors explain the observed variability in the fatality rate between countries?

On the one hand we perform several regressions to see which variables are caused the cumulative fatality rate of the COVID-19 in Europe at the end of June and July. We found that the variable *Tourism arrivals* which has been included as a proxy for the international incoming movements, is the most significant one. Results shows a direct relationship between the arrivals of tourism and the cumulative fatality rate, meaning that countries more open to tourism have suffered a higher mortality of the covid19 disease.

On the other hand, we apply an Inequality of Opportunity approach and we use the Shapley value procedure to know which variables affect the observed variability between countries in the cumulative fatality rate. We showed that the variable that contributes the most to explain the variability of the fatality rate is *Tourism arrivals*, which explains more than half of the explained variability. Likewise, the variable *Population 65+* which has a direct relationship with the fatality rate, is the second highest contribution to explain the differential cumulative mortality.

Other significant findings are that more than a half of the variability in the fatality rate is explained by the variables used. We showed that in June the variables analysed explain a slightly higher part of the overall variability of the fatality rate which suggest that socio-economic circumstances, health endowments and political response to contain the pandemic lost importance as the disease spreads.

Finally, we found that policies trying to contain the pandemic spread have little effect in decreasing the fatality rate which could be due to its small effect in reducing the spread of the virus (Égert et al., 2020).

To sum up, our empirical findings suggest that efforts and circumstances prior to the outbreak spread are of great importance in understanding the cumulative fatality rate and its variability. However, little could be done once the disease has already spread throughout the country.

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APPENDIX A

The Stringency Index, the Government response index and the Containment and Health index from The Oxford COVID-19 Government Response Tracker (OxCGRT) (Hale et al., 2020) are composite measures which involve an additive score of indicators with regard to closure policies, economic policies and health system policies. Table A1 shows the policy indicators used to construct each index.

Table A1: Indices from the Oxford COVID-19 Government Response Tracker (OxCGRT)

	Stringency Index	**Containment and Health Index**	**Government response Index**
CLOSURE POLICIES			
C1: Record closing of schools and universities	X	X	X
C2: Record closings of workplaces	X	X	X
C3: Record cancelling public events	X	X	X
C4: Record limits of gatherings	X	X	X
C5: Record closing of public transport	X	X	X
C6: Record orders to "shelter-in-place" and otherwise confine to the home	X	X	X
C7: Record restrictions on internal movement between cities/regions	X	X	X
C8: Record restrictions on international travel	X	X	X
ECONOMIC POLICIES			
E1: Record if the government is providing direct cash payments to people who lose their jobs or cannot work			X
E2: Record if the government is freezing financial obligations for households			X
HEALTH SYSTEM POLICIES			
H1: Record presence of public info campaigns	X	X	X
H2: Record government policy on who has access to testing		X	X
H3: Record government policy on contact tracing after a positive diagnosis		X	X
H6: Record policies on the use of facial coverings outside the home		X	X
H7: Record policies for vaccine delivery for different groups.		X	X

Source: https://github.com/OxCGRT/covid-policy-tracker/blob/master/documentation/index_methodology.md

TABLES

Table I: Fatality rate per 100,000 inhabitants and date country reaches 1 positive per 1 million

	Date 1 positive per 1 M	**Fatality rate June**	**Fatality rate July**
AL	03/17	0.024	0.030
AT	03/08	0.040	0.034
AZ	03/17	0.012	0.014
BY	03/20	0.006	0.008
BE	04/09	0.159	0.143
BA	03/18	0.042	0.029
BG	03/13	0.046	0.033
HR	03/15	0.039	0.028
CY	03/19	0.019	0.017
CZ	03/13	0.029	0.023
DK	03/15	0.047	0.045
EE	03/30	0.035	0.033
FI	03/29	0.045	0.044
FR	03/12	0.151	0.140
GE	03/22	0.016	0.015
DE	03/17	0.046	0.043
EL	03/26	0.056	0.046
HU	04/05	0.141	0.132
IS	03/16	0.005	0.005
IE	03/21	0.068	0.068
IT	03/15	0.145	0.142
LV	04/14	0.027	0.026
LT	03/30	0.043	0.039
LU	04/03	0.026	0.017
MT	03/30	0.013	0.011
MD	03/25	0.033	0.031
NL	03/11	0.122	0.113
NO	03/24	0.028	0.028
PL	03/29	0.043	0.038
PT	04/17	0.037	0.034
RO	03/22	0.061	0.046
RS	03/28	0.019	0.022
SK	03/24	0.017	0.013
SI	03/16	0.069	0.055
ES	04/18	0.114	0.099
SE	04/11	0.081	0.075
CH	04/07	0.062	0.056
TR	03/19	0.026	0.025
UA	04/08	0.026	0.024
UK	03/06	0.142	0.136
Variance		0.0019	0.0017

Table II. Descriptive Statistics

Variable	**Mean**	**Standard Deviation**
Fatality rate June	0.054	0.044
Fatality rate July	0.049	0.041
Population 65+	18.04	3.61
Density	154.44	241.88
Urban	71.71	13.91
Tourism arrivals	165.33	211.40
Health expenditure	2849.95	2548.37
UHC Coverage	76.28	7.29
Physicians	3.64	1.16
Nurses	9.02	4.31
Beds	4.84	1.92
Stringency Index	14.77	9.60
Government Response Index	12.47	6.96
Containment and Health Index	13.63	7.73

Table III. Regression results for the cumulative fatality rate at the end of June

Physicians	-0.00648	-0.00662	-0.00651	-0.00574	-0.00584	-0.00574
	(0.00489)	(0.00492)	(0.00491)	(0.00496)	(0.00498)	(0.00497)
Tourism arrivals	0.000108***	0.000109***	0.000110***	0.000107***	0.000107***	0.000108***
	(0.0000264)	(0.0000267)	(0.0000268)	(0.0000264)	(0.0000267)	(0.0000269)
Population 65+	0.00378*	0.00388*	0.00386*	0.00391*	0.00400*	0.00397*
	(0.00167)	(0.00166)	(0.00167)	(0.00167)	(0.00166)	(0.00168)
Stringency Index	-0.000376			-0.000329		
	(0.000583)			(0.000586)		
Government Response Index		-0.000378			-0.000338	
		(0.000807)			(0.000808)	
Containment and Health Index			-0.000332			-0.000300
			(0.000732)			(0.000733)
Beds				-0.00280	-0.00287	-0.00288
				(0.00289)	(0.00289)	(0.00289)
Constant	-0.00291	-0.00519	-0.00545	0.00516	0.00357	0.00344
	(0.0330)	(0.0336)	(0.0336)	(0.0341)	(0.0347)	(0.0347)
N	40	40	40	40	40	40
adj. R-sq	0.398	0.395	0.395	0.397	0.395	0.395

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Table IV. Regression results for the cumulative fatality rate at the end of July

Physicians	-0.00584	-0.00595	-0.00586	-0.00504	-0.00512	-0.00504
	(0.00466)	(0.00468)	(0.00467)	(0.00470)	(0.00472)	(0.00471)
Tourism arrivals	0.000103***	0.000103***	0.000104***	0.000101***	0.000102***	0.000102***
	(0.0000251)	(0.0000254)	(0.0000256)	(0.0000251)	(0.0000253)	(0.0000255)
Population 65+	0.00320	0.00331*	0.00329*	0.00335*	0.00343*	0.00342*
	(0.00159)	(0.00158)	(0.00159)	(0.00159)	(0.00158)	(0.00159)
Stringency Index	-0.000332			-0.000281		
	(0.000556)			(0.000556)		
Government Response Index		-0.000300			-0.000258	
		(0.000769)			(0.000767)	
Containment and Health Index			-0.000261			-0.000227
			(0.000697)			(0.000695)
Beds				-0.00301	-0.00308	-0.00308
				(0.00274)	(0.00274)	(0.00274)
Constant	0.000342	-0.00236	-0.00264	0.00901	0.00702	0.00688
	(0.0314)	(0.0320)	(0.0320)	(0.0323)	(0.0329)	(0.0330)
N	40	40	40	40	40	40
adj. R-sq	0.379	0.375	0.375	0.382	0.380	0.380

Standard errors in parentheses

* p<0.05, ** p<0.01, *** p<0.001

Table V. Contribution of the variables used in the regressions to the variability of the fatality rate between countries

	Value	Percentage	Value	Percentage	Value	Percentage	Value	Percentage	Value	Percentage	Value	Perc
Health vars.	0.006	3.4%	0.006	3.4%	0.006	3.4%	0.015	8.4%	0.015	8.5%	0.015	8.
Tourism Arrivals	0.104	62.3%	0.105	62.7%	0.105	62.7%	0.103	58.6%	0.104	59.0%	0.104	59
Population 65+	0.053	31.8%	0.054	32.6%	0.054	32.5%	0.054	30.9%	0.056	31.6%	0.055	31
OxCGRT Index	0.003	1.9%	0.001	0.8%	0.001	0.9%	0.003	1.9%	0.001	0.8%	0.002	0.
TOTAL	0.167	100%	0.167	100%	0.167	100%	0.176	100%	0.176	100%	0.176	10
Explanied variability	54%		54%		54%		57%		57%		57%	
	Health vars.: Physicians Index: Stringency Index		Health vars.: Physicians Index: Government Response Index		Health vars.: Physicians Index: Containment and Health Index		Health vars.: Physicians and Beds Index: Stringency Index		Health vars.: Physicians and Beds Index: Government Response Index		Health va Physicians Beds Index: Containmen Health In	

Table VI. Contribution of a more complete set of variables to the variability of the fatality rate between countries a

	Value	Percentage	Value	Percentage	Value	Percentage	Average value
Health vars.	0.035	18.3%	0.036	18.7%	0.03641	18.74%	0.036
Tourism Arrivals	0.098	50.7%	0.098	50.4%	0.097183	50.03%	0.098
Demographic vars.	0.057	29.4%	0.058	29.8%	0.058074	29.89%	0.058
OxCGRT Index	0.003	1.7%	0.002	1.1%	0.002596	1.34%	0.003
TOTAL	0.194	100%	0.194	100.0%	0.194263	100%	0.194
Explained variability	63%		63%		63%		
	Health vars.: UHC Coverage, Health exp., Physicians, Nurses and Beds Demographic vars.: Density, Urban and pop. 65+ Index: Stringency Index		Health vars.: UHC Coverage, Health exp., Physicians, Nurses and Beds Demographic vars.: Density, Urban and pop. 65+ Index: Government Response Index		Health vars.: UHC Coverage, Health exp., Physicians, Nurses and Beds Demographic vars.: Density, Urban and pop. 65+ Index: Containment and Health Index		

Table VII. Table VII. Contribution of the variables used in the regressions to the variability of the fatality rate between co

	Value	Percentage	Value	Percentage	Value	Percentage	Value	Percentage	Value	Percentage	Value
Health vars.	0.005	3.1%	0.005	3.1%	0.005	3.1%	0.013	8.1%	0.014	8.1%	0.014
Tourism Arrivals	0.109	68.5%	0.109	68.9%	0.109	69.0%	0.108	64.4%	0.109	64.9%	0.109
Population 65+	0.042	26.2%	0.043	26.9%	0.042	26.8%	0.043	25.5%	0.044	26.1%	0.043
OxCGRT Index	0.003	1.9%	0.001	0.8%	0.001	0.9%	0.003	1.8%	0.001	0.9%	0.002
TOTAL	0.159	100%	0.159	100%	0.159	100%	0.167	100%	0.167	100%	0.167
Explanied variability	51%		51%		51%		54%		54%		
	Health vars.: Physicians Index: Stringency Index		Health vars.: Physicians Index: Government Response Index		Health vars.: Physicians Index: Containment and Health Index		Health vars.: Physicians and Beds Index: Stringency Index		Health vars.: Physicians and Beds Index: Government Response Index		He Physic Index and I

Table VIII. Contribution of a more complete set of variables to the variability of the fatality rate between countri July.

	Value	Percentage	Value	Percentage	Value	Percentage	Average value
Health vars.	0.034	18.1%	0.035	18.4%	0.035105	18.53%	0.035
Tourism Arrivals	0.106	55.8%	0.105	55.5%	0.104465	55.14%	0.105
Demographic vars.	0.046	24.5%	0.047	25.0%	0.04739	25.02%	0.047
OxCGRT Index	0.003	1.6%	0.002	1.1%	0.002484	1.31%	0.003
TOTAL	0.189	100%	0.189	100.0%	0.189443	100%	0.189
Explained variability	61%		62%		62%		61
	Health vars.: UHC Coverage, Health exp., Physicians, Nurses and Beds Demographic vars.: Density, Urban and pop. 65+ Index: Stringency Index		Health vars.: UHC Coverage, Health exp., Physicians, Nurses and Beds Demographic vars.: Density, Urban and pop. 65+ Index: Government Response Index		Health vars.: UHC Coverage, Health exp., Physicians, Nurses and Beds Demographic vars.: Density, Urban and pop. 65+ Index: Containment and Health Index		