

## Statistical Appendix 2 for Chapter 2 of World Happiness Report 2021

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### Data Sources and Variable Definitions for Table 2.6 and Appendix 2 Table A1

- COVID-19 deaths per 100,000 population in 2020 is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- COVID-19 deaths per 100,000 population till the end of February 2021 is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on March 3, 2021).
- Median age of the population is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Island dummy covers 21 island nations (<https://www.nationsonline.org/oneworld/island-countries.htm>), augmented to 22 by treating Australia as an island rather than a continent.
- One country's exposure to infections in other countries (on Mar 31) is the sum of all other countries' infections on March 31, 2020, weighted by the inverse of the bilateral distance of their capital cities. The bilateral distances are taken from the GeoDist Database provided by CEPII ([http://www.cepii.fr/CEPII/en/bdd\\_modele/presentation.asp?id=6](http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6)).
- Ln average distance to SARS countries is the natural log of average distance to the six SARS nations (Canada, China, Hong Kong SAR, Singapore, Taiwan, and Vietnam).
- WHOWPR denotes the membership in the WHO Western Pacific Region ([https://www.who.int/immunization/monitoring\\_surveillance/data/WPR/en/](https://www.who.int/immunization/monitoring_surveillance/data/WPR/en/)).
- Female heads of government denotes whether the country has a female head of government.
- Index for institutional trust is the national average for 2017-2019 of institutional trust (on a scale from 0 to 1) as defined in Table 2.4 of *World Happiness Report 2020* (<https://worldhappiness.report/ed/2020/social-environments-for-world-happiness/>).
- GINI index measuring the country's degree of income inequality, on a scale from 0 to 100, with 0 representing complete equality. It is taken from the World Inequality Database (<https://wid.world/data/>). Most recent year's data are used in our analysis.

- Aged 65 or older is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Aged 70 or older is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Overweight prevalence is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Diabetes prevalence is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Average temperature 2000-2013 is the average of 2000-2013 (the most recent available year), from Earth Surface Temperature Data compiled in [www.kaggle.com](http://www.kaggle.com).
- Ln absolute value of latitude denotes the natural log of the absolute value of the latitude of country centroid from [worldmap.harvard.edu](http://worldmap.harvard.edu).
- Ln International arrivals in 2018 (some in 2017 when 2018 data are missing) are from World Development Indicators (WDI).
- Urbanization rate in 2019 is taken from WDI.
- Ln population density is the natural log of population density which is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Hospital beds per thousand is taken from the complete Our World in Data COVID-19 dataset (retrieved from <https://ourworldindata.org/coronavirus-data> on January 18, 2021).
- Trust in national government is the national average of the binary response to the survey question “Do you have confidence in each of the following, or not? How about National government?” averaged over 2017-2019 in Gallup World Poll (GWP).
- Social trust is national average of the binary response to the GWP survey question “Generally speaking, would you say that most people can be trusted or that you have to be careful in dealing with people?”, mostly surveyed in 2009 and 2010.
- Lost wallet returned by neighbor (Lloyds) is the national average of the response to the survey question “How likely a neighbor would be to return a small bag of great financial value to you if found” in the Lloyd’s Register Foundation World Risk Poll in 2019. The three-point responses to the question “Very likely”, “Somewhat likely”, and “Not likely at all” are recoded by us as “1”, “0.5”, and “0” respectively.

- Lost wallet returned by strangers (Lloyds) is national average of the response to the survey question “How likely a stranger would be to return a small bag of great financial value to you if found” in the Lloyd’s Register Foundation World Risk Poll in 2019. The three-point responses to the question “Very likely”, “Somewhat likely”, and “Not likely at all” are recoded by us as “1”, “0.5”, and “0” respectively.
- Average of lost wallet returned by neighbor and by strangers (Lloyds) is the simple average of “lost wallet returned by neighbor (Lloyds)” and “lost wallet returned by strangers (Lloyds)”.
- East Asia is an indicator variable covering mainland China, Hong Kong SAR, Japan, Mongolia, South Korea, and Taiwan.
- Mortality ratio (adjusted/crude death rate) is the ratio of indirectly age-and-sex standardized COVID-19 death rate for a country divided by the crude death rate for the same country and period. The period covered is 2020, and there are data for 154 countries. The standardized (*iscdr*) and crude death rates (*ccdr*) are taken from Heuveline and Tzen (2020). (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7273293/>). The data we used were posted by them on January 5, 2021, and downloaded by us on February 28, 2021.

**Appendix 2 Table A1: COVID-19 deaths in 2020 per 100,000 population**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Median age	2.021*** (0.453)	2.136*** (0.451)	1.515*** (0.389)	1.815*** (0.336)	1.777*** (0.309)	1.881*** (0.318)	1.544*** (0.367)	1.885*** (0.337)	1.838*** (0.311)	1.529*** (0.445)
Island dummy	-15.70*** (4.938)	-15.86*** (4.963)	-14.86*** (4.918)	-15.83*** (4.963)	-15.34*** (4.970)	-15.77*** (4.852)	-15.05*** (4.877)	-15.64*** (4.873)	-15.36*** (5.224)	-15.74*** (4.948)
Exposure to infections in other countries (on Mar 31)	13.08*** (2.929)	13.34*** (2.967)	12.91*** (2.758)	12.92*** (2.872)	12.74*** (2.791)	13.01*** (2.765)	12.74*** (2.797)	12.72*** (2.763)	12.99*** (2.774)	12.45*** (2.789)
Ln average distance to SARS countries	16.72** (7.450)	17.32** (7.388)	11.82* (7.046)	16.28** (7.198)	16.22** (7.147)	15.65** (7.087)	16.53** (7.926)	16.40** (6.896)	15.76** (7.305)	16.28** (7.018)
WHOWPR	-8.323 (8.476)	-8.071 (8.414)	-7.922 (7.796)	-7.904 (8.406)	-8.294 (8.137)	-9.188 (8.033)	-8.641 (8.327)	-8.640 (7.873)	-8.796 (8.035)	-9.166 (8.104)
Female heads of government	-19.37*** (5.147)	-18.48*** (5.316)	-18.62*** (4.939)	-19.28*** (5.192)	-20.08*** (5.057)	-18.60*** (4.970)	-18.32*** (5.405)	-19.78*** (4.904)	-18.51*** (4.959)	-18.63*** (5.135)
Index for institutional trust	-47.62*** (10.52)	-48.50*** (10.73)	-47.19*** (10.08)	-47.33*** (10.20)	-46.89*** (9.928)	-48.06*** (9.858)	-53.70*** (11.71)	-46.42*** (9.883)	-47.67*** (9.930)	-50.40*** (11.09)
Gini	0.808*** (0.247)	0.817*** (0.247)	0.866*** (0.246)	0.764*** (0.241)	0.833*** (0.243)	0.761*** (0.240)	0.679** (0.261)	0.786*** (0.242)	0.786*** (0.240)	0.728*** (0.243)
Aged 65 or older	-0.317 (0.749)									
Aged 70 or older		-0.754 (1.113)								
Overweight prevalence			0.224 (0.138)							
Diabetes prevalence				0.191 (0.436)						
Average temperature 2000-2013					-0.154 (0.265)					
Ln absolute value of latitude						-0.936 (2.021)				
Ln International arrivals in 2018							1.411 (1.450)			
Urbanization rate in 2019								-1.184 (9.244)		
Ln population density									-0.179 (1.121)	
Ln GDP per capita in 2019, PPP (constant 2017 I\$)										2.973 (2.573)
Constant	-211.8*** (68.70)	-219.9*** (68.06)	-167.6*** (64.12)	-204.1*** (65.52)	-200.4*** (63.88)	-195.9*** (64.89)	-211.4*** (79.26)	-205.9*** (62.39)	-198.7*** (67.46)	-218.0*** (66.73)
Observations	160	160	160	160	160	163	145	162	163	155
Adjusted R-squared	0.653	0.654	0.656	0.650	0.652	0.651	0.643	0.652	0.651	0.654

**Appendix 2 Table A1: COVID-19 deaths in 2020 per 100,000 population (continued)**

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Median age	2.200*** (0.383)	2.004*** (0.351)	1.897*** (0.339)	1.925*** (0.343)	1.794*** (0.340)	1.879*** (0.342)	1.998*** (0.302)		1.908*** (0.320)	2.633*** (0.388)
Island dummy	-17.19*** (4.851)	-11.82** (5.685)	-12.76** (6.176)	-10.12* (5.709)	-10.21* (5.641)	-9.968* (5.677)	-18.27*** (4.564)	-15.38*** (4.703)	-14.69*** (4.975)	-19.38** (7.460)
Exposure to infections in other countries (on Mar 31)	13.24*** (2.783)	13.16*** (3.109)	13.46*** (3.014)	14.15*** (2.984)	13.85*** (2.961)	14.10*** (2.971)	12.37*** (2.738)	14.66*** (2.338)	12.69*** (2.797)	19.53*** (3.251)
Ln average distance to SARS countries	13.07* (7.428)	16.83** (8.274)	22.95** (9.364)	18.99** (7.760)	18.12** (7.801)	18.70** (7.793)	11.30* (6.790)	11.96* (6.659)	16.70** (7.335)	20.72** (8.521)
WHOWPR	-4.388 (7.485)	-10.88 (9.798)	-7.876 (9.796)	-8.171 (7.967)	-8.461 (7.862)	-8.315 (7.879)	7.506 (7.262)	-12.14 (8.387)	-12.94 (9.792)	-14.68 (10.38)
Female heads of government	-20.64*** (4.832)	-17.75*** (5.411)	-20.37*** (7.159)	-17.99*** (5.223)	-17.49*** (5.134)	-17.84*** (5.178)	-19.63*** (4.791)	-18.99*** (4.856)	-19.00*** (5.393)	-20.16*** (6.283)
Index for institutional trust	-63.71*** (10.92)	-58.48*** (21.41)	-44.29*** (11.13)	-41.65*** (10.24)	-44.45*** (10.73)	-41.95*** (10.43)	-58.39*** (9.865)	-44.20*** (10.48)	-50.55*** (10.47)	-70.18*** (13.22)
Gini	0.730*** (0.257)	1.100*** (0.302)	0.708** (0.310)	0.733** (0.285)	0.774*** (0.274)	0.734*** (0.281)	0.859*** (0.224)	0.899*** (0.241)	0.848*** (0.250)	1.185*** (0.339)
Hospital beds per thousand	-3.276*** (1.094)									
Trust in national government		3.459 (7.195)								
Social trust			-31.37* (17.71)							
Lost wallet returned by neighbor (Lloyds)				-40.55** (18.63)						
Lost wallet returned by strangers (Lloyds)					-46.39* (23.70)					
Average of lost wallet returned by neighbor and by strangers (Lloyds) East Asia						-48.98** (22.13)		-44.71*** (9.484)		
Mortality ratio (adjusted/crude death rate)								-9.238*** (1.263)		
Constant	-169.3** (66.52)	-231.3*** (76.68)	-257.4*** (82.80)	-208.8*** (69.44)	-209.2*** (69.63)	-207.9*** (69.59)	-161.6*** (61.69)	-91.09 (58.42)	-211.2*** (67.01)	-272.8*** (77.15)
Observations	147	133	127	141	141	141	163	154	154	163
Adjusted R-squared	0.666	0.653	0.667	0.649	0.647	0.650	0.677	0.667	0.653	0.703

Notes: The dependent variable in columns (1)-(19) is the COVID-19 death rate per 100,000 population by the end of 2020. The dependent variable in column (20) is the death rate per 100,000 population till the end of February 2021. Robust standard errors are in parentheses. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01.