Covid-19 Understanding Society Synthetic dataset

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Introduction

This file describes the synthetic data created using the output from Murphy & Elliot's (2022) paper which looked at changes in wellbeing during the COVID-19 pandemic. This used the online responses from the COVID-19 modules of the Understanding Society (US) longitudinal dataset. The paper uses the first four waves of the US COVID-19 survey, and wave nine of the regular US dataset is used as a baseline.

The experiment and creation of the synthetic data is described [here](#) in Little et al. (2025). There are 8379 records in the dataset.

The synthetic data is designed so that it would solely reproduce the regression models found in Tables 3 and 4, and the Figures 1 and 2 of Murphy & Elliot's (2022) paper. It is unlikely to be useful for any other analysis.

Data Dictionary

To indicate that the data is synthetic, all of the variable names are prefixed with "synthetic_"

Variable name	Description	Label	Meaning
synthetic_age	Age	Range: 17-92	
synthetic_always_lonely	Persistent loneliness	0	Minimum level
		1	
		2	
		3	
		4	Maximum level
		-99	Missing
synthetic_baseline_wellbeing	Wellbeing at baseline	0	Minimum level
		1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
		11	
		12	Maximum level
synthetic_community_cohesion	Community cohesion	4	Minimum level

		5	
		6	
		7	
		8	
		9	
		10	
		11	
		12	
		13	
		14	
		15	
		16	
		17	
		18	
		19	
		20	Maximum level
		-99	Missing
synthetic_eth_minority	Ethnic minority	0	White
		1	Non-white
		-99	Missing
synthetic_financial_crisis	Financial crisis. Indicates acute financial crisis at wave 4	0	Has not accessed food bank in prior 4 weeks
		1	Has accessed food bank
		-99	Missing
synthetic_health_condition	Health condition	0	No underlying health condition
		1	Underlying health condition
synthetic_imd_decile_2019	Index of Multiple Deprivation decile	1	
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
synthetic_income_decrease	Income decrease	0	Income same or greater than wave1
		1	Income reduced from wave 1
synthetic_lonely	Lonely	0	Has not experienced loneliness in 4 weeks prior to wave 1

		1	Has experienced loneliness in 4 weeks prior to wave 1
synthetic_sex	Sex	0	Female
		1	Male
synthetic_wave_1	Wave 1 wellbeing	1	Wellbeing score at wave 1
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
		11	
		12	
synthetic_wave_4	Wave 4 wellbing	1	Wellbeing score at wave 4
		2	
		3	
		4	
		5	
		6	
		7	
		8	
		9	
		10	
		11	
		12	
synthetic_Weights	Survey weights		

References

Murphy, J. and Elliot, M. (2022). An analysis of changes in wellbeing during the COVID-19 pandemic in the UK. *Discover Social Science and Health*, 2(1). [online]. Available from: https://doi.org/10.1007/s44155-022-00009-x.

Little, C., Elliot, M., Allmendinger, R. (2025). Producing synthetic teaching datasets using evolutionary algorithms. *UNECE Expert Meeting on Statistical Data Confidentiality.* https://unece.org/sites/default/files/2025-12/SDC2025_Sd_UnivManchester_SyntheticTeachingDatasets_Elliot_D.pdf