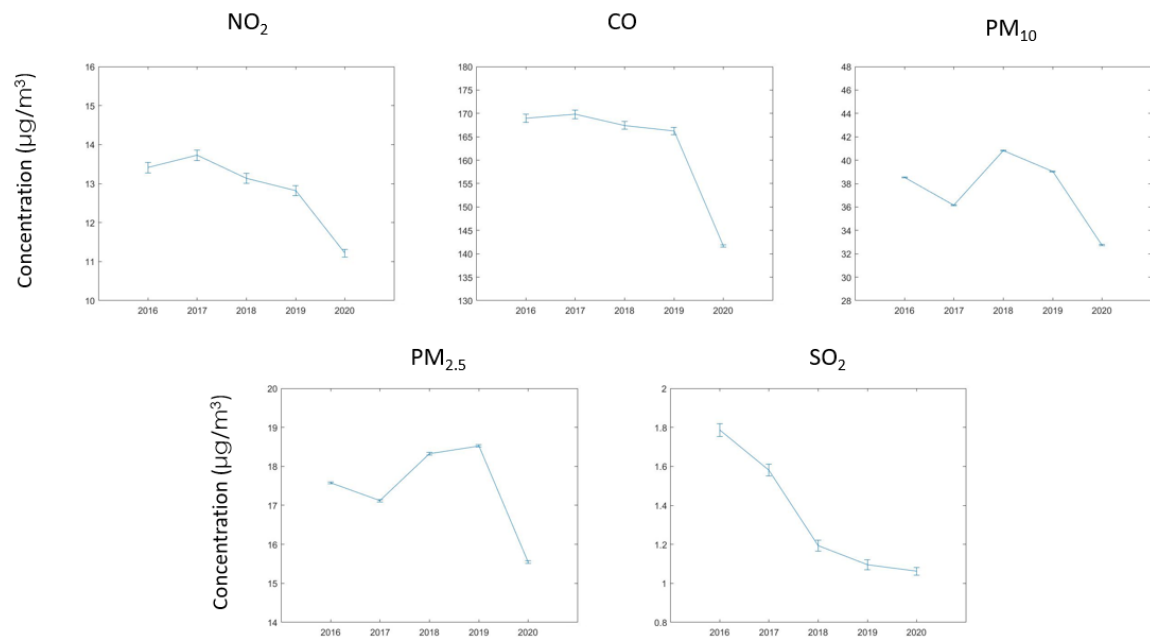# Supplementary materials

Figure S1: Annual national average concentrations (and standard error bars) of air pollutants in Israel: 2016-2020: NO_2, CO, PM_{10}, $PM_{2.5}$ and SO_2.

Table S1: Spearman correlation results: coefficients and p-values of the correlations between demographic parameters and COVID-19 morbidity rates on specific time points in the Delta variant morbidity wave. Color scale: red indicates negative correlation and green indicates positive correlation.

Type of parameter	parameter	15 August 2021		22 August 2021		3 September 2021	
		r	p-value	r	p-value	r	p-value
Demographic	Natural growth	-0.31	<0.01	-0.7	<0.01	-0.75	<0.01
	Socioeconomic cluster	0.57	<0.01	0.93	<0.01	0.82	<0.01
	Total population	0.38	<0.01	0.36	<0.01	0.15	0.04
	Rate of elderly	0.82	<0.01	0.54	<0.01	0.22	<0.01
	Density	0.5	<0.01	0.36	<0.01	0.28	<0.01
Immunization	2nd dose immunized ratio	-0.41	<0.01	-0.1	0.18	-0.12	0.09
Air pollution	SO_2	0.56	<0.01	0.51	<0.01	0.51	<0.01
	$PM_{2.5}$	0.4	<0.01	0.37	<0.01	0.19	0.01
	PM_{10}	0.47	<0.01	0.43	<0.01	0.2	0.005
	CO	0.4	<0.01	0.35	<0.01	0.13	0.07
	NO_2	0.4	<0.01	0.37	<0.01	0.16	0.03

Table S2: Multivariate linear regressions results: coefficients and p-values for predicting the COVID-19 rate based on a single air pollutant and selected demographic features. Color scale: red indicates negative correlation and green indicates positive correlation.

15 August 2021					
beta	**NO2**	**CO**	**PM2.5**	**PM10**	**SO2**
Intercept	6.8767	6.9188	7.0506	6.45	7.0173
Total population	0.29069	0.49484	0.54727	0.57948	0.50416
Population density	4.3139	4.5449	5.3141	4.3141	5.2039
Ratio of elderly	-0.11512	-0.06831	0.70994	0.008771	0.032737
Air pollutant	1.3149	2.0043	0.076247	1.5621	0.71847
2nd dose immunized ratio	-0.37246	-0.27041	-0.17763	-0.47704	-0.02489
P-values	**NO2**	**CO**	**PM2.5**	**PM10**	**SO2**
Intercept	3.28E-62	3.45E-62	7.64E-56	3.73E-57	8.45E-61
Total population	0.51944	0.27494	0.25923	0.17744	0.28748
Population density	3.10E-19	1.36E-21	1.15E-26	7.25E-22	8.08E-28
Ratio of elderly	0.88356	0.93153	0.39316	0.99058	0.96976
Air pollutant	2.50E-06	1.35E-05	0.72712	2.58E-09	0.019246
2nd dose immunized ratio	0.48646	0.61632	0.75797	0.35295	0.96505

3 September 2021					
Beta	**NO2**	**CO**	**PM2.5**	**PM10**	**SO2**
Intercept	-5.6933	-5.6448	-6.0962	-5.9946	-5.8263
Total population	-0.29836	-0.26416	-0.38975	-0.24077	-0.35811
Population density	0.64071	0.7749	0.53053	0.30613	0.58912
Ratio of elderly	2.2385	2.3703	2.2968	1.9209	1.596
Air pollutant	0.19028	0.02103	0.55914	0.74474	1.0522
2nd dose immunized ratio	0.18612	0.16254	0.74392	0.14135	0.62716
P-values	**NO2**	**CO**	**PM2.5**	**PM10**	**SO2**
Intercept	1.34E-40	1.47E-40	3.04E-38	2.48E-41	3.98E-44
Total population	0.54584	0.59111	0.42232	0.61635	0.45119
Population density	0.16528	0.083021	0.19673	0.47981	0.13578
Ratio of elderly	0.003471	0.001924	0.001488	0.009044	0.031272
Air pollutant	0.52294	0.96579	0.017358	0.008215	0.000906
2nd dose immunized ratio	0.79374	0.81978	0.31532	0.83899	0.3711