

Annex

Annex 1: Correlation coefficients and statistical significance of examined variables across Scotland and in urban areas, 2022

To understand the relationship between markers of inequality and concentrations of NO₂ and PM_{2.5} within a data zone, we ran a series of bivariate regressions of the form $y_i = c + bx_i + \epsilon$, where i represents an individual data zone, and the values for y are the proportion of data zone that:

- Is income deprived
- Is from an ethnic minority (excluding white minorities)
- Has a mental health condition
- Lives in socially rented accommodation, or
- Lives in private rented accommodation.

x_i represents the annual mean concentration of either NO₂ or PM_{2.5} within that data zone in µg/m³.

Finally, each coefficient b listed in Tables 7-10 represent the change in NO₂ or PM_{2.5} in µg/m³ for every 1 percentage point increase in the examined population within a data zone.

Table 1: Correlation coefficients and standard errors between NO₂ concentrations in µg/m³ and the proportion of the population that meet examined variables, Scotland

	Ethnic Minorities (excl. white minorities)	Income Deprivation	Mental Health Condition	Socially Rented Accommodation	Private Rented Accommodation
NO ₂ Concentration	0.015*** (0.00)	0.006*** (0.00)	0.004*** (0.00)	0.009*** (0.00)	0.012*** (0.00)
Constant	-0.022*** (0.00)	0.089*** (0.00)	0.087*** (0.00)	0.151*** (0.00)	0.049*** (0.00)
R-squared	0.393	0.041	0.118	0.024	0.146
N	6972	6973	6972	6972	6972

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

Table 2: Correlation coefficients and standard errors between PM_{2.5} concentrations in µg/m³ and the proportion of the population that meet examined variables, Scotland

	Ethnic Minorities (excl. white minorities)	Income Deprivation	Mental Health Condition	Socially Rented Accommodation	Private Rented Accommodation
PM _{2.5} Concentration	0.050*** (0.00)	0.027*** (0.00)	0.018*** (0.00)	0.042*** (0.00)	0.034*** (0.00)
Constant	-0.137*** (-0.01)	0.016* (-0.01)	0.040*** (0.00)	0.035* (-0.01)	-0.017* (-0.01)
R-squared	0.179	0.033	0.076	0.021	0.045
N	6972	6973	6972	6972	6972

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

Table 3: Correlation coefficients between NO₂ concentrations in µg/m³ and the proportion of the population that meet examined variables, large, urban areas

	Ethnic Minorities (excl. white minorities)	Income Deprivation	Mental Health Condition	Socially Rented Accommodation	Private Rented Accommodation
NO ₂ Concentration	0.017*** (0.00)	0.003** (0.00)	0.005*** (0.00)	0.007*** (0.00)	0.026*** (0.00)
Constant	-0.025*** (-0.01)	0.116*** (-0.01)	0.075*** (0.00)	0.165*** (-0.02)	-0.079*** (-0.01)
R-squared	0.221	0.004	0.096	0.006	0.251
N	2493	2493	2493	2493	2493

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

Table 4: Correlation coefficients between PM_{2.5} concentrations in µg/m³ and the proportion of the population that meet examined variables, large, urban areas

	Ethnic Minorities (excl. white minorities)	Income Deprivation	Mental Health Condition	Socially Rented Accommodation	Private Rented Accommodation
PM _{2.5} Concentration	0.073*** (0.00)	0.020*** (-0.01)	0.026*** (0.00)	0.065*** (-0.01)	0.102*** (-0.01)
Constant	-0.196*** (-0.02)	0.05 (-0.03)	0.01 (-0.01)	-0.064 (-0.05)	-0.295*** (-0.03)
R-squared	0.083	0.005	0.044	0.013	0.077
N	2493	2493	2493	2493	2493

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