

Table S1. Statistics of dependent and independent variables for each season and annual.

	Variable	Min	Max	Mean	Median	Std.Dev ¹
Annual N ² =1659	PM _{2.5} (µg/m ³)	3.000	251.000	45.460	38.000	58.797
	AOD (unitless)	0.027	1.699	0.421	0.362	0.273
	TP (°C)	-0.792	35.837	22.720	25.284	8.049
	RH (%)	0.125	0.945	0.431	0.422	0.155
	PBLH (m)	566.800	4532.500	1985.900	1792.200	844.810
	WSU (m/s)	-6.122	5.353	0.646	1.129	2.173
	NDVI (unitless)	0.002	0.865	0.541	0.543	0.195
	POP(10,000people/km ²)	0.021	0.581	0.229	0.120	0.207
Spring N=453	PM _{2.5} (µg/m ³)	10.000	157.000	40.391	31.000	20.399
	AOD (unitless)	0.060	1.681	0.413	0.319	0.213
	TP (°C)	10.081	32.155	22.878	23.376	5.084
	RH (%)	0.125	0.559	0.285	0.263	0.086
	PBLH (m)	1312.971	4532.486	2051.591	2948.540	710.461
	WSU (m/s)	-6.122	5.353	1.147	0.874	2.232
	NDVI (unitless)	0.222	0.865	0.539	0.527	0.138
	POP(10,000people/km ²)	0.021	0.581	0.229	0.120	0.211
Summer N=627	PM _{2.5} (µg/m ³)	3.000	102.000	33.909	32.000	14.533
	AOD (unitless)	0.043	1.699	0.446	0.426	0.273
	TP (°C)	19.029	35.837	28.723	28.236	2.987
	RH (%)	0.160	0.945	0.542	0.477	0.160
	PBLH (m)	643.413	3831.012	2441.475	1925.107	724.776
	WSU (m/s)	-4.720	5.300	0.919	1.430	2.175
	NDVI (unitless)	0.309	0.865	0.685	0.687	0.151
	POP(10,000people/km ²)	0.021	0.581	0.229	0.120	0.215
Autumn N=441	PM _{2.5} (µg/m ³)	6.000	232.000	44.678	36.000	36.370
	AOD (unitless)	0.063	1.525	0.428	0.353	0.289
	TP (°C)	4.489	26.811	18.877	18.717	5.849
	RH (%)	0.324	0.700	0.520	0.493	0.090
	PBLH (m)	675.087	2310.166	2220.478	1443.010	330.715
	WSU (m/s)	-3.669	4.871	1.176	1.532	1.812
	NDVI (unitless)	0.050	0.857	0.595	0.485	0.166
	POP(10,000people/km ²)	0.021	0.581	0.229	0.120	0.208
Winter N=138	PM _{2.5} (µg/m ³)	8.000	251.000	62.862	48.000	48.514
	AOD (unitless)	0.027	1.127	0.397	0.294	0.216
	TP (°C)	-0.792	18.589	7.211	6.466	3.517
	RH (%)	0.209	0.616	0.376	0.352	0.083
	PBLH (m)	566.762	2534.663	1230.082	1131.002	401.778
	WSU (m/s)	-5.484	2.780	-0.658	-0.599	1.919
	NDVI (unitless)	0.002	0.462	0.346	0.276	0.099
	POP(10,000people/km ²)	0.021	0.581	0.229	0.120	0.166

¹ N is the number of samples.² Ste.Dev is the standard deviation.

Table S2. Statistics of dependent and independent variables for each city.

	Variable	Min	Max	Mean	Median	Std.Dev
Baoji N=378	PM _{2.5} (µg/m ³)	7.000	199.000	40.476	29.000	24.685
	AOD (unitless)	0.032	1.681	0.332	0.264	0.189
	TP (°C)	2.391	34.526	17.723	22.691	7.395
	RH (%)	0.160	0.945	0.419	0.397	0.148
	PBLH (m)	675.087	3882.164	2042.560	2050.935	810.876
	WSU (m/s)	-5.880	5.353	0.601	0.977	2.305
	NDVI (unitless)	0.148	0.809	0.521	0.525	0.171
	POP(10,000people/km ²)	0.084	0.084	0.084	0.120	0.167
Weinan N=244	PM _{2.5} (µg/m ³)	10.000	251.000	48.639	36.000	36.185
	AOD (unitless)	0.058	1.525	0.435	0.361	0.268
	TP (°C)	4.906	35.548	20.053	26.454	7.658
	RH (%)	0.147	0.829	0.428	0.418	0.157
	PBLH (m)	643.413	4366.613	2001.883	1831.120	827.739
	WSU (m/s)	-4.360	4.494	0.659	1.169	2.108
	NDVI (unitless)	0.002	0.726	0.491	0.465	0.150
	POP(10,000people/km ²)	0.025	0.581	0.167	0.084	0.000
Xianyang N=222	PM _{2.5} (µg/m ³)	7.000	232.000	44.037	34.000	36.185
	AOD (unitless)	0.053	1.380	0.429	0.383	0.268
	TP (°C)	3.017	34.203	19.739	25.744	7.658
	RH (%)	0.181	0.809	0.432	0.433	0.157
	PBLH (m)	775.270	4063.077	1973.920	1674.150	827.739
	WSU (m/s)	-4.369	4.293	0.702	1.279	2.108
	NDVI (unitless)	0.274	0.865	0.668	0.757	0.150
	POP(10,000people/km ²)	0.135	0.135	0.135	0.135	0.000
Tongchuan N=182	PM _{2.5} (µg/m ³)	6.000	147.000	38.544	32.000	27.424
	AOD (unitless)	0.027	1.226	0.357	0.288	0.230
	TP (°C)	-0.792	35.502	18.885	25.117	7.829
	RH (%)	0.125	0.813	0.421	0.425	0.149
	PBLH (m)	566.762	4532.486	1944.162	1656.430	836.732
	WSU (m/s)	-6.122	4.515	0.700	1.237	2.053
	NDVI (unitless)	0.016	0.606	0.449	0.390	0.187
	POP(10,000people/km ²)	0.021	0.123	0.067	0.021	0.000
Xi'an N=633	PM _{2.5} (µg/m ³)	3.000	228.000	55.577	42.000	29.443
	AOD (unitless)	0.058	1.699	0.554	0.471	0.283
	TP (°C)	0.404	35.837	20.711	25.798	6.898
	RH (%)	0.137	0.820	0.454	0.438	0.162
	PBLH (m)	803.131	4430.587	1966.814	1719.217	853.988
	WSU (m/s)	-4.643	4.306	0.569	1.164	2.062
	NDVI (unitless)	0.217	0.838	0.576	0.589	0.165
	POP(10,000people/km ²)	0.064	0.544	0.402	0.544	0.215