

(Original Title)

Variability in Air Quality, Ozone Formation Potential by VOCs, and Associated Air Pollution Attributable Health Risks for Delhi's Inhabitants

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Table ST1: Total registered motor vehicles from 2015 to 2022.

Vehicle Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Cars and Jeeps	29,86,579	31,52,710	32,46,637	32,49,670	33,11,579	33,84,736	20,76,113	NA
Motor cycles and Scooter/two wheelers	61,04,070	66,07,879	70,78,428	75,56,002	79,59,753	82,39,550	52,68,685	NA
Ambulances	2,990	3059	3,220	2,358	2,287	2,289	1145	NA
Auto Rickshaws (Passenger)	1,98,137	1,05,399	1,13,074	1,13,240	1,14,891	1,14,869	93,578	NA
Taxis	91,073	1,18,308	1,18,060	1,09,780	1,22,476	1,12,401	85,033	NA
Buses	34,365	35,206	35,285	32,218	33,302	33,294	17,522	NA
Other Passenger Vehicles	6,368	59,759	76,231	81,422	85,477	91,887	1,14,504	NA
Tractors, All goods Vehicles & Others	2,81,159	3,00,437	3,15,080	2,46,861	2,63,112	2,74,324	2,61,518	NA
Total	97,04,741	1,03,82,757	1,09,86,015	1,13,91,551	1,18,92,877	1,22,53,350	79,17,898	NA

Table ST2: Industry-wise Registered Factories in Delhi (Source: Economic Survey of NCT of Delhi 2022-23)

Industry	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Food Product	304	326	330	333	340	345	350	142	141	137
Beverages, Tobacco and Tobacco Product	43	45	46	44	44	49	53	34	34	36
Textiles products	1975	2007	2033	2012	2013	2020	2008	1519	1514	1507
Wood products, Furniture and Fixtures	261	263	265	266	269	269	273	98	97	99
Paper and Paper products Printing publishing & Allied	721	758	765	771	776	785	795	587	594	595
Leather and Leather Fur products (except repair)	285	296	298	298	300	301	303	139	140	145
Rubber, Plastic, Petroleum Coal Products	628	654	666	666	662	674	699	754	754	754
Chemical & Chemical products (except Petroleum & Coal)	293	294	295	291	290	293	290	173	174	172
Non-metallic Mineral products	80	82	82	82	82	82	73	11	12	12
Basic Metal & Alloy Industry	524	526	525	523	519	524	517	775	770	756
Metal products and Parts Machinery & Transport Equipment - Machine tools including Electrical Appliances	1814	1872	1913	1890	1890	1902	1928	757	760	759
Electricity, Gas and Stream Water Works and Supply	103	104	104	104	109	126	132	195	206	206
Wholesale Trade in Fuel, Chemicals, Perfumery, Ceramics Glass	35	59	73	95	91	97	99	0	2	5
Public Administration and Defense Services	2	2	9	9	9	9	9	47	47	46
Sanitary Services	12	14	17	17	18	20	20	31	31	30
Repair of Capital Goods & Repair Services	512	529	540	550	556	563	570	219	224	217
Miscellaneous unspecified Group	965	990	1007	1003	1010	1000	1002	3141	3143	3137
Total	8557	8821	8968	8954	8978	9059	9121	8622	8643	8613

Table ST3: Sampling Stations and Parameters

WHO Standards			Indian Standards		
Pollutant	Time Weighted Average	Standard (μgm^{-3})	Time Weighted Average	Industrial, Residential, Rural and other Areas (μgm^{-3})	Ecological Sensitive Area (Notified by Central Govt.) (μgm^{-3})
Nitrogen dioxide (NO_2)	Annual*	40	Annual*	40	30
	24 hrs**	200	24 hrs**	80	80
Particulate Matter - 10 (PM_{10})	Annual*	10	Annual*	60	60
	24 hrs**	25	24 hrs**	100	100
Particulate Matter - 2.5 ($\text{PM}_{2.5}$)	Annual*	20	Annual*	40	40
	24 hrs**	50	24 hrs**	60	60
Ozone	Peak Season	60	8 hrs	100	100
	8 Hours	100	1 hr	180	180

Benzene	NA	NA	Annual	05	05
Toluene	NA	NA	NA	NA	NA

Table ST4: Burden of diseases (PM_{2.5}) in Delhi using the AirQ+ model.

	Burden of Diseases (PM_{2.5})							
	2019		2020		2021		2022	
Mortality	Estimated Attributable Proportion Central% (Lower% - Upper%)	Relative Risk (RR) Central (RR) (Lower - Upper)	Estimated Attributable Proportion Central% (Lower% - Upper%)	Relative Risk (RR) Central (RR) (Lower - Upper)	Estimated Attributable Proportion Central% (Lower% - Upper%)	Relative Risk (RR) Central (RR) (Lower - Upper)	Estimated Attributable Proportion Central% (Lower% - Upper%)	Relative Risk (RR) Central (RR) (Lower - Upper)
ALRI	37.63% (27.60% - 46.88%)	1.60 (1.38 – 1.88)	35.63% (25.71% - 45.04%)	1.55 (1.35 – 1.82)	37.60% (27.58% - 46.86%)	1.60 (1.38 – 1.88)	36.11% (26.15% - 45.54%)	1.57 (1.35 – 1.84)
COPD	45.56% (38.42% - 52.82%)	1.84 (1.62 – 2.12)	43.30% (39.09% - 50.55%)	1.76 (1.56 – 2.02)	45.53% (38.39% - 52.80%)	1.84 (1.62 – 2.12)	43.84% (36.65% - 51.14%)	1.78 (1.58 – 2.05)
IHD	56.16% (45.56% - 64.54%)	2.28 (1.84 – 2.82)	55.98% (45.55% - 64.50%)	2.27 (1.84 – 2.82)	56.16% (45.56% - 64.54%)	2.28 (1.84 – 2.82)	56.06% (45.55% - 64.56%)	2.28 (1.84 – 2.82)
Stroke	65.00% (54.83% - 72.32%)	2.96 (2.86 – 3.61)	64.83% (54.52% - 72.11%)	2.84 (2.20 – 3.59)	65.00% (54.83% - 72.32%)	2.86 (2.21 – 3.61)	64.91% (54.69% - 72.23%)	2.85 (2.21 – 3.60)
LC	33.61% (25.09% - 41.21%)	1.51 (1.34 – 1.70)	32.98% (24.77% - 40.42%)	1.49 (1.33 - 1.68)	33.60% (25.09% - 41.21%)	1.51(1.33 – 1.70)	33.15% (24.76% - 40.65%)	1.50 (1.33 – 1.68)
NCDs +ALRI	41.70% (33.36% - 48.99%)	1.72 (1.50 – 1.96)	40.05% (31.95% - 47.19%)	1.67 (1.47 – 1.89)	41.68% (33.35% - 48.97%)	1.71 (1.50 – 1.96)	40.46% (32.30% - 47.63%)	1.68 (1.48 – 1.91)

Lung cancer (LC), Acute lower respiratory infection (ALRI), Chronic obstructive pulmonary disease (COPD), Ischaemic heart disease (IHD), Non-accidental deaths (NCDs +ALRI)