Comparison of Spatial Modelling Approaches on PM₁₀ and NO₂ Concentration Variations: A Case Study in Surabaya City, Indonesia

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 Table S1. List of potential predictor variables collected from each database.

Data Source	Potential variables	Geo- format	Measurement	Expected Association
	A	ir Pollutan	t Database	
Environmental	PM ₁₀	point	On-site measurement (µg/m³)	+
Bureau of Surabaya City	NO_X	point	On-site measurement (ppm)	+
	M	eteorologic	al Database	
	Temperature	point	On-site measurement (°C)	-/+
	Relative humidity	point	On-site measurement (%)	-/+
Meteorological,	Wind speed	point	On-site measurement (km/h)	-/+
and Geophysical Bureau of	Wind direction	point	On-site measurement	-/+
Indonesia	Rainfall	point	On-site measurement (mm/d)	-/+
	Duration of solar radiation	point	On-site measurement (joule/cm²)	-/+
	GI	S – Land U	Jse Database	
City Development	Water reservoirs	point	Number within 250-5000m circular buffers (count)	-/+

Installation		Number within 250-5000m	
	point		-/+
facility		circular buffers (count)	
Sports	point	Number within 250-5000m	-/+
facility		circular buffers (count)	
Government		Number within 250-5000m	
facility	point	circular buffers (count)	-/+
Education		Number within 250-5000m	/.
facility	point	circular buffers (count)	-/+
Potential	Geo-	Measurement	Expected
variables	format		Association
GI	S – Land U	se Database	
Trading	noint	Number within 250-5000m	/ .
facility	point	circular buffers (count)	-/+
Worship	noint	Number within 250-5000m	/ 1
facility	point	circular buffers (count)	-/+
Office	point	Number within 250-5000m	-/+
facility		circular buffers (count)	
Social	noint	Number within 250-5000m	
facility	point	circular buffers (count)	-+
Terminal		Number within 250-5000m	
facility	point	circular buffers (count)	-/+
Public		Number within 250-5000m	,
facility	point	circular buffers (count)	-/+
T.		Number within 250-5000m	,
Tower	point	circular buffers (count)	-/+
	facility Government facility Education facility Potential variables GI Trading facility Worship facility Office facility Social facility Terminal facility Public	Sports facility Sports facility Government facility Education facility Potential Geovariables format Trading facility Worship facility Office facility Social facility Terminal facility Public facility Public facility Point facility Point facility Public facility Point facility Point facility Point facility Point facility	facilitypoint point facilitycircular buffers (count)Sports facilitypoint circular buffers (count)Government facilityNumber within 250-5000m circular buffers (count)Education facilityPoint circular buffers (count)Potential variablesGeo- MeasurementMeasurementTrading facilityNumber within 250-5000m circular buffers (count)Worship facilityNumber within 250-5000m circular buffers (count)Office facilityNumber within 250-5000m circular buffers (count)Social facilityNumber within 250-5000m circular buffers (count)Terminal facilityNumber within 250-5000m circular buffers (count)Terminal facilityNumber within 250-5000m circular buffers (count)Public Public facilityNumber within 250-5000m circular buffers (count)Number within 250-5000m circular buffers (count)Number within 250-5000m circular buffers (count)

		circular buffers (m ²)		
Swamp	polygon	Area within 250-5000m	-	
		circular buffers (m ²)		
	Area within 250-5000m	+		
	polygon	circular buffers (m ²)	· 	
Residential	polvgon	Area within 250-5000m	+	
GI	S – Land U	se Database		
variables	format	wieasurement	Association	
Potential	Geo-	Maggurament	Expected	
Services	porygon	circular buffers (m ²)	+	
Trade and		Area within 250-5000m	-	
Mangrove		circular buffers (m ²)		
Managas	mol	Area within 250-5000m		
Military Area	polygon	circular buffers (m ²)	-/+	
3.6°1°.	1	Area within 250-5000m		
Warehousing	polygon	circular buffers (m ²)	+	
Industry and		Area within 250-5000m		
facility	point	circular buffers (count)	-/+	
Penitentiary		Number within 250-5000m		
facility	point	circular buffers (count)	-/+	
		Number within 250-5000m		
			-/+	
Cleanliness		Number within 250-5000m		
substation	point	circular buffers (count)	-/+	
	Cleanliness Facility Health facility Penitentiary facility Industry and Warehousing Military Area Mangrove Trade and Services Potential variables GI Residential Major road	Cleanliness Facility Health facility Penitentiary facility Industry and Warehousing Military Area polygon Mangrove polygon Trade and Services Potential Geovariables format GIS – Land U Residential polygon	Cleanliness point Facility Health point facility Penitentiary point facility Industry and Warehousing Military Area polygon Mangrove Potential Geovariables Residential polygon Major road Major road Penitentiary point facility Facility Point circular buffers (count) Number within 250-5000m circular buffers (count) Number within 250-5000m circular buffers (count) Area within 250-5000m circular buffers (m²) Area within 250-5000m circular buffers (m²)	

	Green open	polygon	Area within 250-5000m		
	space		circular buffers (m ²)	-	
	D 11 C 11		Area within 250-5000m	,	
	Paddy field	polygon	circular buffers (m ²)	-/+	
			Area within 250-5000m	-/+	
	Shrubs	polygon	circular buffers (m ²)		
	D.		Area within 250-5000m		
	River	polygon	circular buffers (m ²)	-	
	F' 1 1	polygon	Area within 250-5000m		
	Fishpond		polygon	circular buffers (m ²)	-
			Area within 250-5000m		
	Moor	polygon	circular buffers (m ²)	-/+	
Satellite Database					
MODIS			Area within 250-5000m		
Greenness	NDVI	grid	circular buffers	1	
Database			(dimensionless)		