

Table S1 Station location of the Continuous Air Quality Monitoring (CAQM) in Peninsular Malaysia and East Malaysia

Malaysian Part	Station Code	Latitude	Longitude	Region	Category
Peninsular Malaysia	CA01R	6.4299	100.2111	Northern	Sub Urban
	CA02K	6.3315	99.8585	Northern	Sub Urban
	CA03K	6.1371	100.3469	Northern	Sub Urban
	CA04K	5.6296	100.4677	Northern	Sub Urban
	CA05K	5.4016	100.5896	Northern	Sub Urban
	CA06P	5.3982	100.4039	Northern	Urban
	CA07P	5.3294	100.4435	Northern	Urban
	CA08P	5.3562	100.3079	Northern	Sub Urban
	CA09P	5.3371	100.2164	Northern	Sub Urban
	CA10A	4.8989	100.6791	Northern	Sub Urban
	CA11A	4.6294	101.1167	Northern	Urban
	CA12A	4.5533	101.0802	Northern	Sub Urban
	CA13A	4.2003	100.6634	Northern	Rural
	CA14A	3.6878	101.5245	Northern	Sub Urban
	CA15W	3.2124	101.6822	Central	Urban

CA16W	3.2124	101.6822	Central	Sub Urban
CA17W	3.1062	101.7179	Central	Sub Urban
CA18B	2.9148	101.6901	Central	Rural
CA19B	3.3213	101.2562	Central	Industry
CA20B	3.1332	101.6080	Central	Sub Urban
CA21B	3.1047	101.5562	Central	Urban
CA22B	3.0149	101.4131	Central	Sub Urban
CA23N	2.8167	101.6232	Central	Urban
CA24N	2.8217	101.8115	Central	Sub Urban
CA25N	2.7234	101.9685	Central	Sub Urban
CA26M	2.3709	102.2246	Southern	Rural
CA27M	2.2585	102.1727	Southern	Urban
CA28M	2.1909	102.2571	Southern	Sub Urban
CA29J	2.4939	102.8627	Southern	Sub Urban
CA31J	1.9193	102.8666	Southern	Sub Urban
CA32J	2.0379	103.3121	Southern	Rural
CA33J	1.4946	103.7360	Southern	Sub Urban
CA34J	1.4701	103.8935	Southern	Urban
CA35J	1.3895	104.1496	Southern	Industry

	CA36J	1.5641	104.2253	Southern	Sub Urban
	CA66J	2.2948	102.5716	Southern	Sub Urban
	CA37C	2.9266	103.4192	Eastern	Rural
	CA38C	3.4716	102.3764	Eastern	Sub Urban
	CA39C	3.9484	102.3666	Eastern	Sub Urban
	CA40C	3.8192	103.2966	Eastern	Sub Urban
	CA41C	3.9606	103.3822	Eastern	Industry
	CA42T	4.2621	103.4258	Eastern	Urban
	CA43T	4.5981	103.4348	Eastern	Industry
	CA44T	5.3081	103.1204	Eastern	Sub Urban
	CA45T	5.7484	102.5156	Eastern	Sub Urban
	CA46D	5.8112	102.1345	Eastern	Industry
	CA47D	6.1474	102.2492	Eastern	Sub Urban
	CA48S	4.2498	117.9359	Sabah	Sub Urban
	CA49S	5.8645	118.0911	Sabah	Sub Urban
	CA50S	5.8797	116.0564	Sabah	Sub Urban
	CA51S	5.5382	115.8506	Sabah	Industry
	CA52S	5.3393	116.1637	Sabah	Background
	CA53L	5.3360	115.2342	Sabah	Sub Urban

East Malaysia

CA54Q	5.2981	115.2321	Sarawak	Rural
CA55Q	4.4948	114.0434	Sarawak	Rural
CA56Q	4.4247	114.0124	Sarawak	Sub Urban
CA57Q	3.5371	113.2952	Sarawak	Industrial
CA58Q	3.1771	113.0411	Sarawak	Sub Urban
CA59Q	2.8832	112.0197	Sarawak	Rural
CA60Q	2.0145	112.9274	Sarawak	Rural
CA61Q	2.3144	111.8319	Sarawak	Sub Urban
CA62Q	2.1328	111.5229	Sarawak	Rural
CA63Q	1.2197	111.4648	Sarawak	Rural
CA64Q	1.4549	110.4915	Sarawak	Rural
CA65Q	1.5622	110.3890	Sarawak	Urban

Table S2 Descriptive table average of particulate matter over Malaysia based on regions and its respective ratio of PM_{2.5} to PM₁₀

Station code	Region	PM _{2.5} (µg/m ³)				PM ₁₀ (µg/m ³)				Ratio PM _{2.5} to PM ₁₀ (mean)
		Ave	Min	Max	Std	Ave	Min	Max	Std	
CA01R	Northern	13.1	3.1	119.8	8.2	21.4	6.6	139.5	10.0	0.61
CA02K	Northern	12.6	2.1	69.4	6.2	22.6	5.6	76.9	7.7	0.56
CA03K	Northern	14.7	2.5	115.6	9.0	21.5	5.6	130.1	10.4	0.68
CA04K	Northern	17.8	3.9	89.3	8.4	24.3	6.3	102.1	9.4	0.73
CA05K	Northern	16.1	3.6	75.9	7.3	24.0	8.2	92.5	8.1	0.67
CA06P	Northern	20.7	6.8	93.1	8.1	28.3	8.9	113.6	10.3	0.73
CA07P	Northern	18.7	5.2	82.0	8.7	27.5	7.1	104.8	11.5	0.68

CA08P	Northern	17.5	2.6	83.1	7.6	24.4	5.3	100.4	9.0	0.72
CA09P	Northern	14.4	2.7	85.7	7.9	20.8	5.5	100.5	8.8	0.69
CA10A	Northern	19.5	3.9	90.8	9.8	33.9	7.4	120.4	13.6	0.58
CA11A	Northern	18.7	6.7	81.6	6.8	28.7	9.9	101.8	9.8	0.65
CA12A	Northern	20.2	7.6	96.1	7.6	33.8	14.5	121.9	10.0	0.60
CA13A	Northern	17.9	4.6	79.9	7.9	26.7	9.7	100.1	9.9	0.67
CA14A	Northern	9.4	2.6	30.3	4.1	14.7	5.7	40.5	4.9	0.64
Ave:		16.5			7.7	25.2				0.66
CA15W	Central	21.3	5.0	108.3	7.8	28.5	6.0	81.7	10.2	0.76
CA16W	Central	23.0	6.2	66.9	7.4	33.1	11.4	79.5	9.4	0.69
CA17W	Central	22.4	7.2	72.4	7.7	30.7	11.0	87.3	9.1	0.73
CA18B	Central	18.9	4.6	84.6	8.5	25.8	7.6	103.9	10.1	0.73

CA19 B	Central	25.8	8.0	62.0	7.3	35.9	11.5	78.7	9.2	0.72
CA20 B	Central	25.2	8.2	62.8	7.6	34.5	11.8	78.9	9.8	0.73
CA21 B	Central	28.2	9.1	157.8	12.7	41.3	13.5	180.6	16.8	0.68
CA22 B	Central	23.1	7.1	80.4	9.2	33.1	9.6	140.1	12.0	0.70
CA23 N	Central	26.8	7.5	72.7	9.2	36.5	12.5	93.0	12.1	0.73
CA24 N	Central	16.7	4.6	50.1	6.5	23.4	7.7	61.6	7.6	0.71
CA25 N	Central	17.5	5.4	43.1	6.3	24.1	9.9	52.7	7.3	0.73
Ave:		22.6			8.2	31.6			10.3	0.72
CA26 M	Souther n	18.4	4.6	49.4	8.5	24.1	8.5	57.1	9.8	0.75
CA27 M	Souther n	20.1	5.3	62.3	8.1	29.6	11.0	72.6	9.3	0.68
CA28 M	Souther n	18.7	0.8	111.6	8.6	25.6	4.8	126.2	10.8	0.73
CA29J	Souther n	15.6	2.6	35.2	6.0	23.3	7.0	55.3	7.8	0.67

CA31J	Southern	16.5	2.0	40.1	7.2	24.3	5.5	53.0	8.1	0.68
CA32J	Southern	15.4	3.2	35.6	6.3	22.9	6.7	44.3	7.2	0.67
CA33J	Southern	20.5	5.3	45.0	6.6	29.3	8.2	58.7	8.5	0.70
CA34J	Southern	18.6	4.7	39.9	6.3	29.5	6.9	60.9	9.7	0.63
CA35J	Southern	14.6	4.5	36.9	5.1	25.6	9.4	62.7	8.5	0.57
CA36J	Southern	12.1	2.6	30.6	4.6	19.4	4.5	39.7	6.1	0.62
CA66J	Southern	17.2	3.7	41.9	6.3	28.6	7.6	54.1	8.0	0.60
Ave:		16.9			6.7	25.6			8.5	0.66
CA37C	Eastern	14.9	2.6	78.6	8.0	24.4	5.0	92.6	9.2	0.61
CA38C	Eastern	17.3	3.7	58.3	7.6	27.4	9.1	69.1	9.1	0.63
CA39C	Eastern	12.6	1.7	44.4	7.6	20.1	4.7	58.0	9.0	0.63
CA40C	Eastern	14.5	2.8	54.1	7.6	21.6	5.4	66.7	9.4	0.67

CA41 C	Eastern	17.9	3.4	61.6	7.4	28.6	7.3	74.3	9.4	0.62
CA42T	Eastern	16.3	3.4	77.5	7.9	24.7	6.3	88.3	9.9	0.66
CA43T	Eastern	12.5	2.1	34.3	5.8	21.7	5.9	47.7	7.9	0.58
CA44T	Eastern	17.3	2.8	53.2	7.3	25.3	6.1	91.9	9.4	0.68
CA45T	Eastern	14.3	2.6	50.8	6.9	22.1	4.9	63.5	8.2	0.65
CA46 D	Eastern	17.8	3.2	55.2	8.5	27.5	6.0	70.1	10.7	0.65
CA47 D	Eastern	17.5	3.2	84.1	9.8	27.2	8.0	99.9	11.6	0.64
Ave:		15.7			7.7	24.6			9.4	0.64
CA48S	Sabah	7.8	3.0	20.1	2.2	15.1	6.6	32.5	3.6	0.51
CA49S	Sabah	10.3	3.0	21.5	2.7	18.0	6.9	39.9	4.0	0.57
CA50S	Sabah	11.9	2.2	59.9	7.3	23.2	8.0	79.2	8.0	0.52
CA51S	Sabah	8.2	1.9	31.5	4.7	16.2	6.4	40.4	5.3	0.52
CA52S	Sabah	12.2	3.7	31.8	5.1	21.0	8.7	42.4	6.0	0.58
CA53L	Sabah	13.1	1.1	49.9	7.9	19.6	5.3	59.8	8.8	0.67
Ave:		10.6			5.0	18.9			5.9	0.56
CA54 Q	Sarawa k	9.5	3.2	32.3	4.4	17.1	5.6	62.8	6.0	0.56
CA55 Q	Sarawa k	12.1	3.0	178.5	12.5	20.3	8.1	217.0	14.7	0.60

CA56	Sarawa	14.4	3.3	53.1	7.5	22.1	6.6	67.8	8.8	0.65
Q	k									
CA57	Sarawa	12.7	3.8	105.5	7.9	23.6	9.2	111.9	9.5	0.54
Q	k									
CA58	Sarawa	16.0	3.2	81.2	8.4	26.3	7.3	98.3	11.3	0.61
Q	k									
CA59	Sarawa	12.9	3.4	109.6	11.3	22.9	6.3	143.4	15.5	0.56
Q	k									
CA60	Sarawa	9.7	2.3	80.4	6.3	17.3	5.0	79.6	7.0	0.56
Q	k									
CA61	Sarawa	15.8	3.5	96.2	10.2	24.0	7.7	110.6	11.5	0.66
Q	k									
CA62	Sarawa	12.1	2.7	63.6	8.4	20.1	7.7	78.4	9.7	0.61
Q	k									
CA63	Sarawa	10.6	1.8	64.4	8.7	18.5	3.9	73.1	9.3	0.57
Q	k									
CA64	Sarawa	12.1	3.2	70.7	9.2	19.9	7.3	82.6	10.2	0.61
Q	k									
CA65	Sarawa	15.6	3.6	81.3	11.2	23.0	4.7	92.2	13.3	0.68
Q	k									
Ave:		12.8			8.8	21.3			10.6	0.60

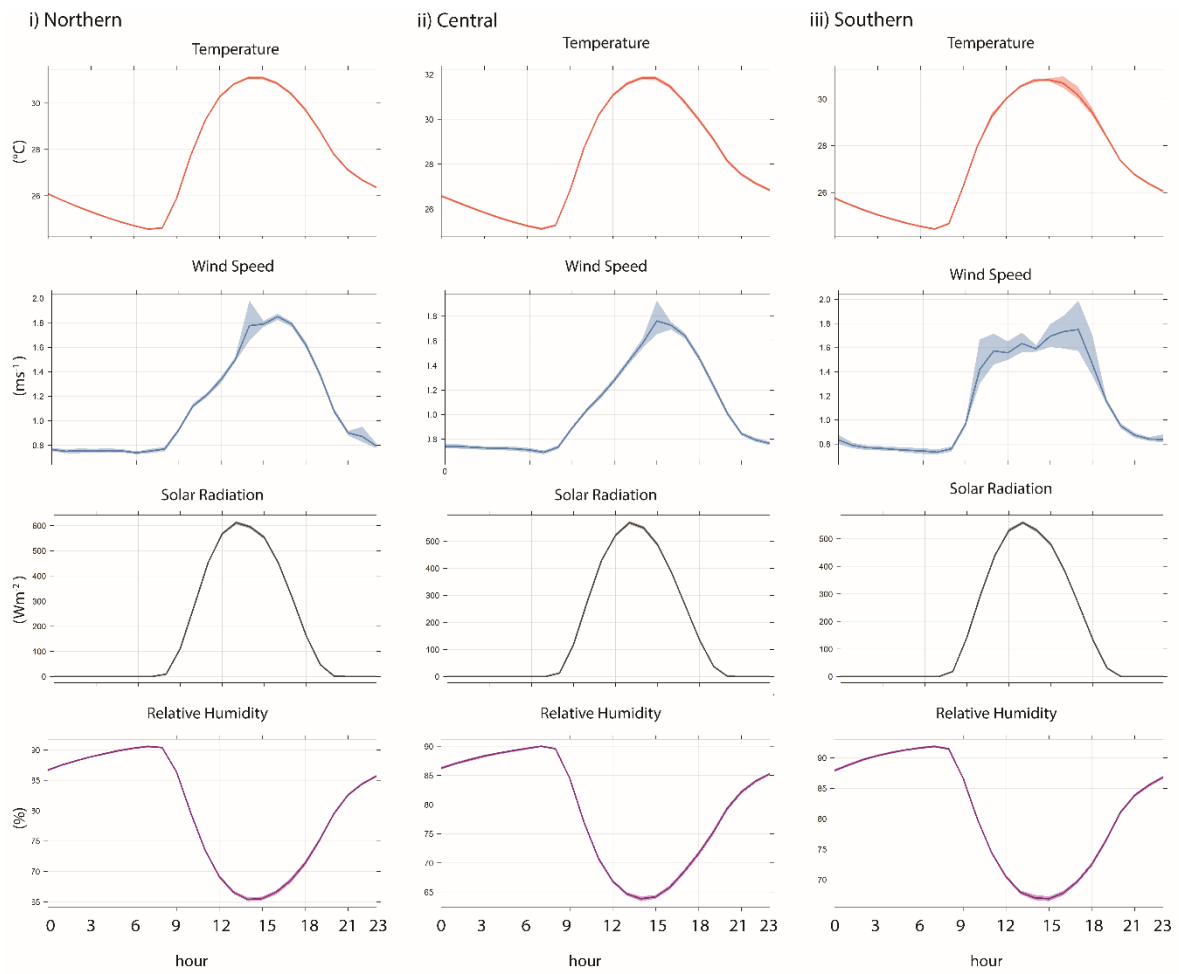


Fig. S3 (a): The diurnal variation of meteorological aspects based on (i) Northern region, (ii) Central region and (iii) Southern region

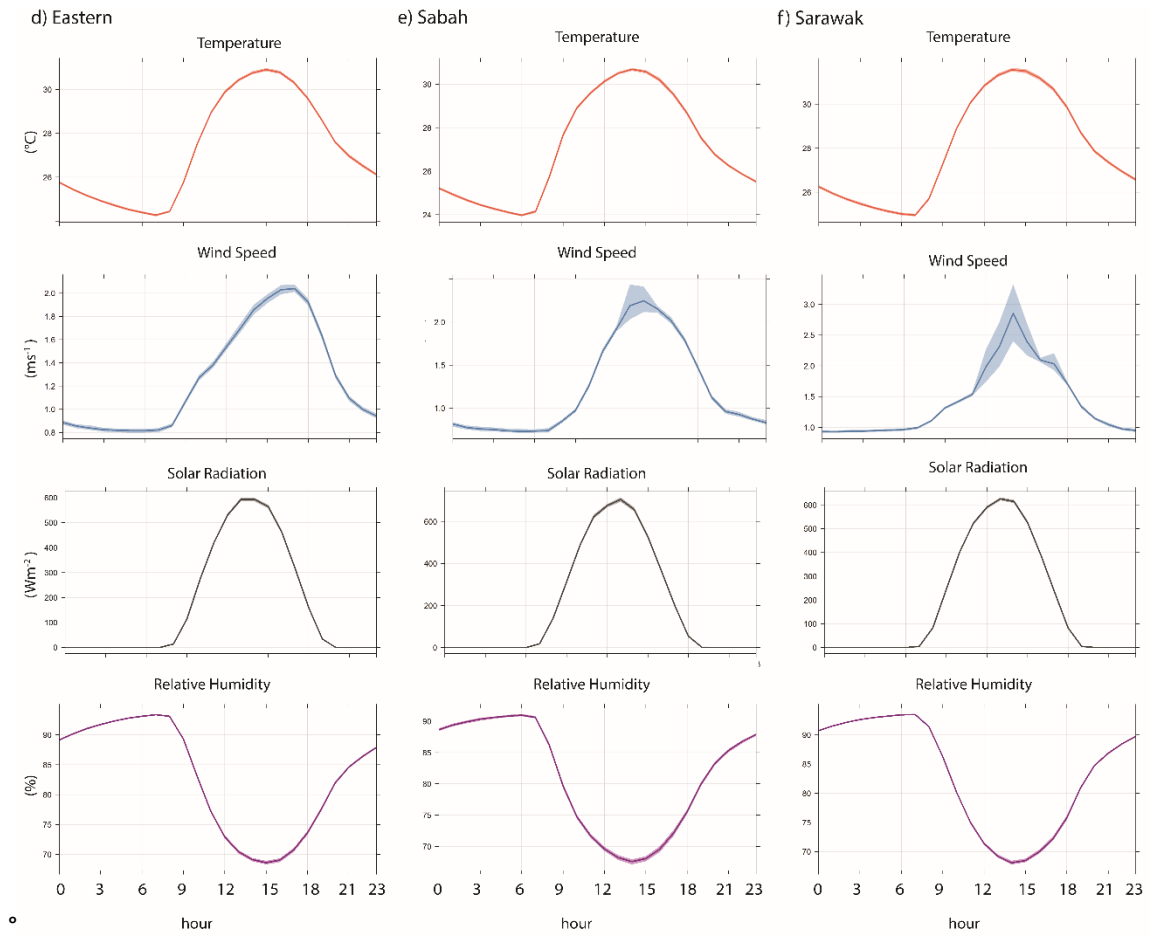


Fig. S3 (b): The diurnal variation of meteorological aspects based on (i) Eastern region, (ii) Sabah region and (iii) Sarawak region

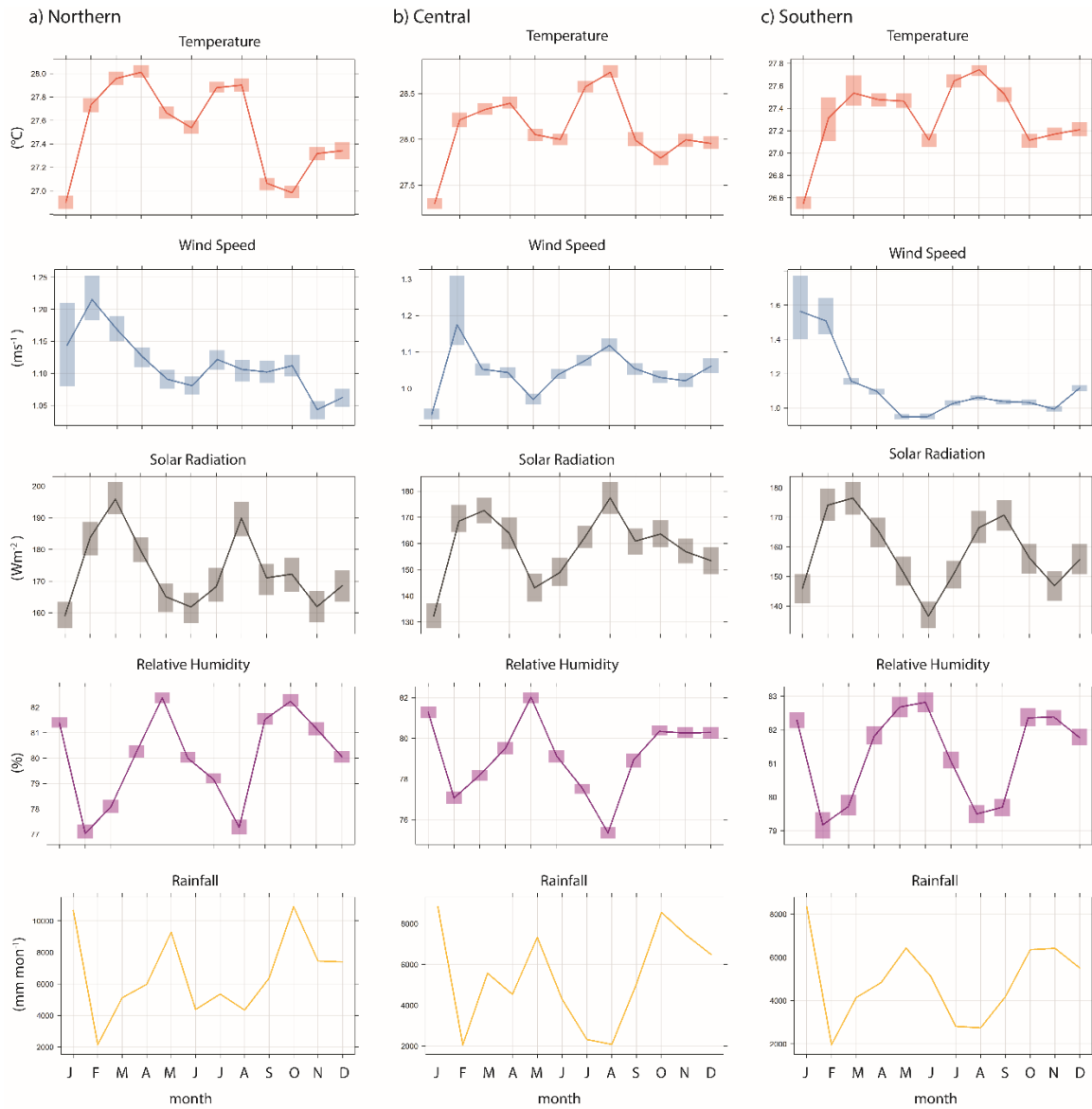


Fig. S4 (a): The monthly variation of meteorological aspects based on (i) Northern region, (ii) Central region and (iii) Southern region

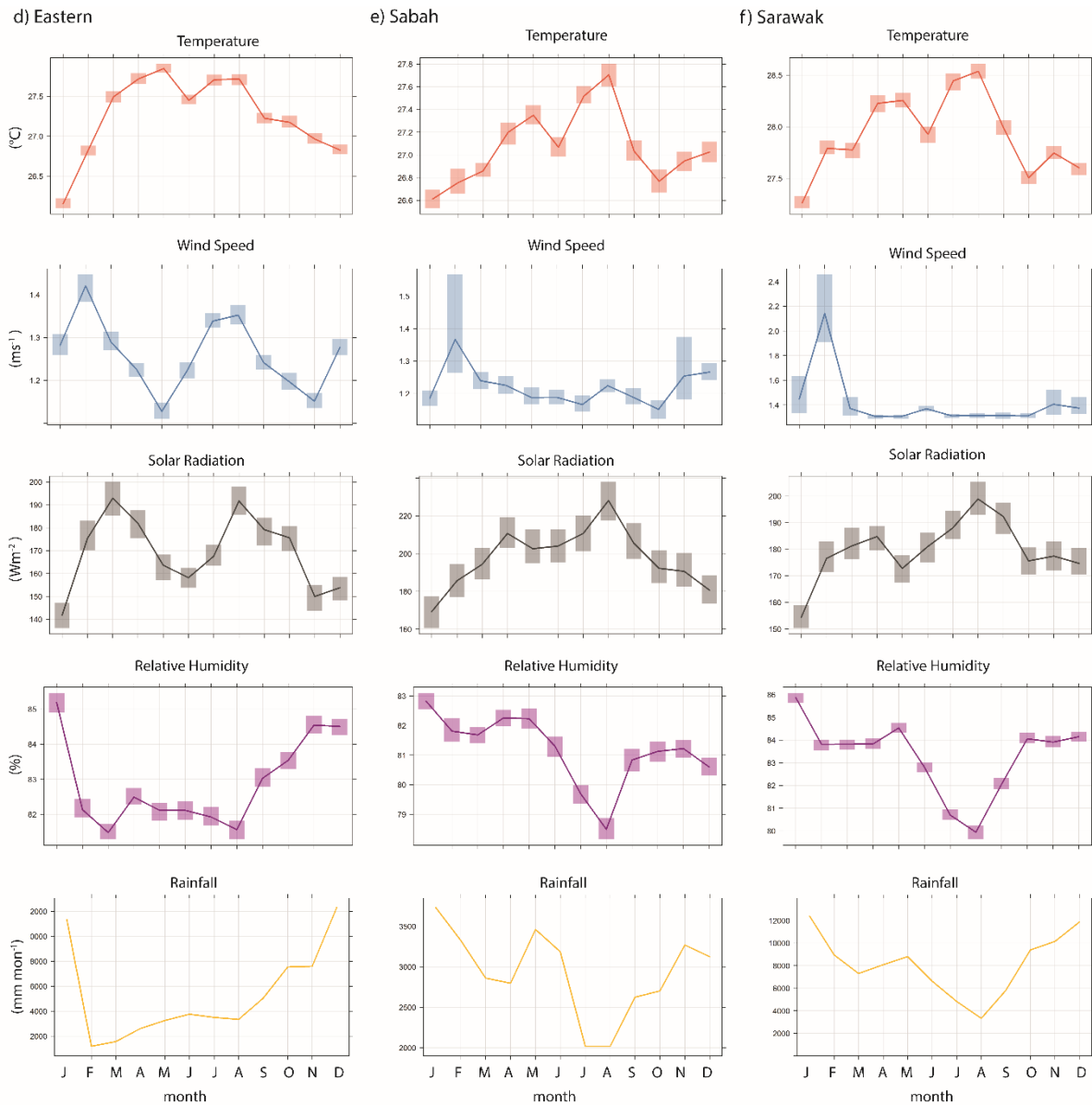


Fig. S4 (b): The monthly variation of meteorological aspects based on (i) Eastern region, (ii) Sabah region and (iii) Sarawak region

Table S5 (a) The Spearman's rank correlation of particulate matters, gases and meteorological parameter based during Northeast monsoon (NEM) season in Malaysia

	Northern		Central		Southern		Eastern		Sabah		Sarawak	
	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}
PM₁₀	1.00		1.00		1.00		1.00		1.00		1.00	
PM_{2.5}	0.93**	1.00	0.96**	1.00	0.92**	1.00	0.92**	1.00	0.82**	1.00	0.82**	1.00
SO₂	0.16**	0.16**	0.29**	0.28**	0.17**	0.19**	-0.01	-0.01	0.19**	0.15**	0.09**	0.13**
NO₂	0.41**	0.41**	0.49**	0.48**	0.37**	0.38**	0.30**	0.30**	0.40**	0.38**	0.44**	0.42**
O₃	-0.01	0.09**	-0.13**	-0.09**	-0.03	0.07**	-0.01	0.07**	-0.27**	-0.03**	-0.30**	-0.13**
CO	0.44**	0.44**	0.47**	0.48**	0.31**	0.31**	0.45**	0.46**	0.22**	0.23**	0.35**	0.36**
WS	-0.08**	-0.06**	-0.21**	-0.19**	-0.15	-0.11	-0.05	-0.06	-0.24**	-0.06**	-0.21**	-0.03**
RH	-0.11**	-0.18**	-0.02**	-0.03**	-0.04	-0.11	-0.21	-0.27	0.00	-0.24**	0.05**	-0.22**
Solar	-0.04**	-0.01	-0.11**	-0.11**	-0.08	-0.02	-0.07	0.02**	-0.16**	0.02**	-0.20**	0.07**
Temp	0.13**	0.20**	0.05**	0.06**	0.13**	0.22**	0.12**	0.16**	-0.06**	0.18**	-0.03**	0.25**
Rainfall	-0.04**	-0.05**	0.00	0.00	-0.08	-0.08	-0.09	-0.09	0.00	-0.02*	-0.04**	-0.05**

** Asterisk shows the correlation significant at the 0.01 level (2-tailed)

* Bold numbers indicate strong correlation between parameters

Table S5 (b) The Spearman's rank correlation of particulate matters, gases and meteorological parameter based during Southwest monsoon (SWM) season in Malaysia

	Northern		Central		Southern		Eastern		Sabah		Sarawak	
	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}
PM₁₀	1.00		1.00		1.00		1.00		1.00		1.00	
PM_{2.5}	0.94**	1.00	0.96**	1.00	0.93**	1.00	0.95**	1.00	0.92**	1.00	0.87**	1.00
SO₂	0.26**	0.26**	0.26**	0.23**	0.25**	0.25**	0.07**	0.07**	0.05**	0.06**	0.16**	0.12**
NO₂	0.42**	0.43**	0.46**	0.47**	0.40**	0.39**	0.30**	0.28**	0.41**	0.37**	0.33**	0.34**
O₃	0.05**	0.14**	-0.90	-0.17**	-0.07**	0.00	0.07**	0.16**	-0.07**	0.02**	-0.14**	0.06**
CO	0.46**	0.46**	0.50**	0.48**	0.29**	0.27**	0.46**	0.46**	0.25**	0.22**	0.27**	0.23**
WS	-0.09**	-0.07**	-0.21**	-0.20**	-0.05**	-0.06**	-0.06**	-0.03**	-0.13**	-0.04**	-0.23**	-0.11**
RH	-0.18**	-0.22**	-0.02**	-0.01	0.01	-0.02**	-0.09**	-0.17**	-0.12**	-0.26**	-0.02**	-0.23**
Solar	-0.05**	-0.03**	-0.17**	-0.17**	-0.11**	-0.07**	-0.06**	0.00	-0.09**	0.05**	-0.17**	-0.03**
Temp	0.19**	0.24**	0.03**	0.04**	0.10**	0.14**	0.10**	0.18**	0.11**	0.26**	-0.01	0.18**
Rainfall	-0.10**	-0.11**	-0.08**	-0.08**	-0.09**	-0.10**	-0.05**	-0.05**	-0.14**	-0.15**	-0.11**	-0.12**

** Asterisk shows the correlation significant at the 0.01 level (2-tailed)

* Bold numbers indicate strong correlation between parameters

Table S5 (c) The Spearman's rank correlation of particulate matters, gases and meteorological parameter based during Intermonsoon (ITM) season in Malaysia

	Northern		Central		Southern		Eastern		Sabah		Sarawak	
	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}	PM ₁₀	PM _{2.5}
PM₁₀	1.00		1.00		1.00		1.00		1.00		1.00	
PM_{2.5}	0.92**	1.00	0.95**	1.00	0.91**	1.00	0.91**	1.00	0.80**	1.00	0.82**	1.00
SO₂	0.23**	0.25**	0.29**	0.28**	0.16**	0.19**	0.00	-0.01	0.13**	0.12**	0.09**	0.13**
NO₂	0.39**	0.41**	0.52**	0.51**	0.41**	0.42**	0.33**	0.31**	0.34**	0.36**	0.44**	0.42**
O₃	-0.03**	0.08**	-0.20**	-0.16**	-0.12**	0.00	-0.10**	-0.02*	-0.27**	0.02	-0.30**	-0.13**
CO	0.40**	0.42**	0.49**	0.48**	0.32**	0.32**	0.44**	0.43**	0.28**	0.30**	0.35**	0.36**
WS	-0.07**	-0.05**	-0.22**	-0.21**	-0.18**	-0.13**	-0.08**	-0.07**	-0.24**	-0.05**	-0.21**	-0.03**
RH	-0.10**	-0.18**	0.06**	0.05**	0.07**	-0.03**	-0.06**	-0.14**	0.03**	-0.23**	0.05**	-0.22**
Solar	-0.06**	-0.01	-0.16**	-0.15**	-0.13**	-0.05**	-0.13**	-0.05**	-0.19**	0.01	-0.20**	0.07**
Temp	0.13**	0.21**	-0.03**	-0.01	0.02**	0.13**	0.01*	0.08**	-0.08**	0.17**	-0.03**	0.25**
Rainfall	-0.07**	-0.07**	-0.03**	-0.03**	-0.03**	-0.03**	-0.09**	-0.08**	-0.06**	-0.08**	-0.04**	-0.05**

** Asterisk shows the correlation significant at the 0.01 level (2-tailed)

* Bold numbers indicate strong correlation between parameters

Table S6 (a) The Principal Component Analysis (PCA) results of PM, criteria gases and meteorological parameter during Northeast monsoon (NEM) season in Malaysia

Region	Northern			Central			Southern			Eastern			Sabah			Sarawak		
	Component			Component			Component			Component			Component			Component		
	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3
PM₁₀	0.09	0.93	-0.08	-0.01	0.96	0.18	0.06	0.89	-0.06	0.04	0.94	-0.05	-0.14	0.91	0.28	-0.11	0.95	-0.04
PM_{2.5}	0.10	0.95	-0.06	-0.02	0.97	0.15	0.11	0.90	-0.08	0.07	0.94	-0.06	-0.01	0.93	0.22	0.03	0.94	0.00
SO₂	0.16	0.11	0.78	0.25	0.00	0.72	0.21	0.36	-0.35	0.07	0.06	0.87	0.03	0.32	-0.16	0.12	0.08	<i>0.67</i>
NO₂	-0.30	<i>0.57</i>	<i>0.55</i>	-0.35	0.32	0.73	-0.33	<i>0.68</i>	-0.03	-0.35	<i>0.59</i>	0.39	-0.14	0.19	0.84	-0.37	0.65	0.19
O₃	0.85	0.01	-0.17	0.83	0.07	-0.19	0.81	0.00	-0.12	0.80	-0.02	-0.15	0.86	-0.04	-0.13	0.83	-0.20	-0.10
CO	-0.23	<i>0.64</i>	0.44	-0.40	0.35	<i>0.67</i>	-0.24	<i>0.60</i>	0.15	-0.12	0.75	0.31	-0.08	0.21	0.85	-0.12	0.43	0.71
WS	0.30	-0.05	-0.36	0.49	-0.17	-0.17	<i>0.50</i>	-0.12	-0.05	0.38	-0.13	-0.34	0.71	-0.19	-0.04	<i>0.50</i>	-0.28	-0.17
RH	-0.93	-0.03	-0.01	-0.91	0.00	-0.05	-0.90	0.04	0.01	-0.95	-0.04	-0.06	-0.90	-0.09	0.13	-0.91	-0.04	-0.05
Solar	0.84	-0.12	-0.03	0.83	-0.11	-0.01	0.81	-0.14	0.01	0.81	-0.13	-0.07	0.84	-0.10	-0.09	0.85	-0.07	-0.03
Temp	0.93	0.06	-0.02	0.90	0.05	0.02	0.77	0.10	0.04	0.92	0.02	0.09	0.93	0.05	0.03	<i>0.69</i>	0.03	0.44
Rainfall	0.02	0.03	-0.17	0.00	-0.01	-0.02	0.04	0.05	0.93	-0.03	-0.02	0.01	-0.02	-0.15	0.14	-0.06	-0.16	0.32
Eigenvalue	3.59	2.65	1.03	3.92	2.43	1.02	3.31	2.52	1.01	3.55	2.67	1.03	3.93	2.34	1.03	3.58	2.30	1.13
% of Variance	32.67	24.10	9.39	35.66	22.08	9.28	30.07	22.95	9.14	32.26	24.27	9.36	35.69	21.23	9.32	32.57	20.89	10.24
Cumulative %	32.67	56.77	66.16	35.66	57.74	67.02	30.07	53.02	62.16	32.26	56.53	65.90	35.69	56.92	66.24	32.57	53.46	63.70

Table S6 (b) The Principal Component Analysis (PCA) results of PM, criteria gases and meteorological parameter during Southwest monsoon (SWM) season in Malaysia

Region	Northern			Central			Southern			Eastern			Sabah			Sarawak		
	Component			Component			Component			Component			Component			Component		
	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3	F1	F2	F3
PM₁₀	0.05	0.89	-	-0.03	0.97	0.15	0.01	0.95	-0.04	0.08	0.91	0.04	-0.05	0.92	0.16	0.02	0.92	-0.24
PM_{2.5}	0.05	0.90	-	-0.04	0.98	0.09	0.04	0.95	-0.05	0.12	0.91	0.03	0.05	0.90	0.16	0.10	0.90	-0.24
SO₂	0.12	0.35	-	0.26	-0.04	0.71	0.21	0.21	0.76	0.07	0.03	0.93	0.00	0.20	0.83	0.10	0.07	0.75
NO₂	-0.40	<i>0.65</i>	-	-0.37	0.28	0.74	-0.35	<i>0.52</i>	<i>0.58</i>	-0.40	<i>0.61</i>	0.14	-0.25	<i>0.58</i>	-0.33	-0.39	<i>0.64</i>	0.15
O₃	0.86	0.08	-	0.85	-0.01	-0.19	0.84	-0.02	-0.18	0.84	0.02	-0.06	0.86	-0.03	-0.02	0.82	-0.12	-0.20
CO	-0.34	0.74	-	-0.40	0.36	<i>0.63</i>	-0.36	<i>0.51</i>	0.19	-0.16	0.78	0.03	-0.20	<i>0.65</i>	-0.41	-0.09	0.64	0.38
WS	<i>0.64</i>	-0.15	-	<i>0.53</i>	-0.09	-0.31	<i>0.59</i>	-0.12	-0.09	0.42	-0.18	-0.42	0.70	-0.21	-0.06	<i>0.55</i>	-0.33	-0.25
RH	-0.89	-0.16	-	-0.90	0.00	-0.09	-0.89	0.07	-0.06	-0.94	0.02	-0.05	-0.90	-0.04	-0.01	-0.89	-0.09	-0.09
Solar	0.82	-0.06	-	0.82	-0.11	-0.08	0.82	-0.11	0.02	0.80	-0.17	-0.08	0.84	-0.17	-0.01	0.81	-0.12	-0.02
Temp	0.90	0.17	-	0.92	0.03	0.08	0.88	0.11	0.14	0.92	0.05	0.05	0.91	0.06	-0.01	0.75	0.17	0.42
Rainfall	-0.03	-0.08	-	-0.06	-0.05	-0.05	-0.07	-0.16	0.42	0.02	-0.01	0.00	-0.05	-0.09	0.13	-0.06	-0.10	0.29
Eigenvalue	3.77	2.75	-	4.04	2.29	1.13	3.76	2.43	1.07	3.63	2.59	1.02	3.85	2.38	1.03	3.38	2.49	1.21
% of Variance	34.24	25.02	-	36.76	20.82	10.30	34.14	22.05	9.68	32.98	23.56	9.31	35.04	21.62	9.34	30.68	22.67	11.00
Cumulative %	34.24	59.26	-	36.76	57.58	67.89	34.14	56.19	65.87	32.98	56.54	65.85	35.04	56.66	66.00	30.68	53.35	64.35

Table S6 (c) The Principal Component Analysis (PCA) results of PM, criteria gases and meteorological parameter during Intermonsoon (ITM) season in Malaysia

Region	Northern		Central		Southern		Eastern		Sabah		Sarawak	
	Component		Component		Component		Component		Component		Component	
	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2	F1	F2
PM₁₀	0.06	0.95	-0.10	0.87	-0.01	0.90	-0.02	0.94	-0.15	<i>0.51</i>	-0.11	0.95
PM_{2.5}	0.09	0.96	-0.11	0.86	0.06	0.92	0.01	0.94	0.01	0.47	0.03	0.94
SO₂	0.10	0.13	0.17	0.46	0.19	0.29	0.05	0.09	0.01	-0.29	0.12	0.08
NO₂	-0.40	<i>0.50</i>	-0.41	0.71	-0.35	0.70	-0.37	<i>0.55</i>	-0.15	<i>0.77</i>	-0.37	<i>0.65</i>
O₃	0.87	0.02	0.85	-0.03	0.83	-0.08	0.83	-0.04	0.85	-0.08	0.83	-0.20
CO	-0.27	<i>0.55</i>	-0.45	<i>0.67</i>	-0.30	<i>0.63</i>	-0.15	<i>0.69</i>	-0.12	0.84	-0.12	0.43
WS	0.56	-0.09	0.54	-0.22	0.52	-0.22	0.49	-0.10	0.74	-0.09	0.50	-0.28
RH	-0.93	-0.04	-0.91	-0.04	-0.91	0.10	-0.95	-0.03	-0.90	0.09	-0.91	-0.04
Solar	0.84	-0.11	0.83	-0.07	0.83	-0.13	0.81	-0.13	0.84	-0.14	0.85	-0.07
Temp	0.93	0.08	0.92	0.08	0.91	0.06	0.93	0.03	0.92	0.03	0.69	0.03
Rainfall	-0.03	0.10	-0.03	-0.05	0.03	0.05	-0.02	-0.10	-0.07	-0.07	-0.06	-0.16
Eigenvalue	3.84	2.59	4.21	2.32	3.92	2.37	3.72	2.45	3.97	2.30	3.58	2.30
% of Variance	34.92	23.57	38.25	21.06	35.68	21.54	33.86	22.26	36.12	20.93	32.57	20.89
Cumulative %	34.92	58.49	38.25	59.31	35.68	57.22	33.86	56.12	36.12	57.05	32.57	53.46