

RESEARCH

Supplementary Materials. Metropolitan age-specific mortality trends at borough and neighbourhood level: The case of Mexico City

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1 Supplementary tables

1.1 Initial parameters

Table 1 Initial variogram parameter values for mortality rates.

	Time	Space	Joint		Time	Space	Joint
Global				School			
nugget	1.05	0.42	0.73		0.01	0.01	0.01
sill	1.97	2.19	2.08		0.01	0.01	0.01
range	12.00	13.27	12.64		12.00	13.27	12.64
stAni	0.00	0.00	0.00		0.00	0.00	0.00
Post-productive				Pre-school			
nugget	9.03	10.58	9.81		0.02	0.03	0.03
sill	20.77	18.16	19.46		0.04	0.03	0.03
range	12.00	13.27	12.64		12.00	13.27	12.64
stAni	0.00	0.00	0.00		0.02	0.02	0.02
Productive				Infant			
nugget	0.23	0.12	0.17		13.02	21.31	17.16
sill	0.37	0.34	0.36		53.59	28.40	40.99
range	12.00	13.27	12.64		12.00	13.27	12.64
stAni	0.01	0.01	0.01		0.00	0.00	0.00

stAni: spatio-temporal anisotropy

1.2 Adjusted models

Table 2: wMSE for the tested covariance models.

Model	Joint	Variogram model type: temporal + spatial								
		Exp+Exp	Sph+Sph	Gau+Gau	Exp+Gau	Exp+Sph	Gau+Exp	Gau+Sph	Sph+Exp	Sph+Gau
metric separable productSum sumMetric		5.3871475	6.4569342	5.6881438	Pre-school ($x10^{-5}$)					
		6.7138056	6.7234295	6.8297716	6.7138056	6.7234295	6.8297716	6.7138056	6.7234295	6.8297716
		8.3793946	8.3626384	8.4044303	8.3793946	8.3626384	8.4044303	8.3793946	8.3626384	8.4044303
	Exp	5.4396971	5.4393540	5.4770666	5.4396971	5.4393540	5.4770666	5.4396971	5.4393540	5.4770666
	Gau	5.7304361	5.7322290	5.7700965	5.7304361	5.7322290	5.7700965	5.7304361	5.7322290	5.7700965
	Sph	6.3862806	6.4159186	6.4315148	6.3862806	6.4159186	6.4315148	6.3862806	6.4159186	6.4315148
	Exp	5.4138608	5.4150930	5.4470521	5.4138608	5.4150930	5.4470521	5.4138608	5.4150930	5.4470521
	Gau	5.7102259	5.7156773	5.7444414	5.7102259	5.7156773	5.7444414	5.7102259	5.7156773	5.7444414
	Sph	6.6455263	6.3675970	6.4072491	6.6455263	6.3675970	6.4072491	6.6455263	6.3675970	6.4072491
	metric separable productSum sumMetric					Infant				
		374.8430	232.6356	358.6417						
		314.3353	314.3352	314.3353	314.3353	314.3352	314.3353	314.3353	314.3352	314.3353
		309.4312	308.8565	308.1254	309.4312	308.8565	308.1254	309.4312	308.8565	308.1254
Exp		127.7998	131.6038	114.1761	118.1797	108.3609	101.2647	118.1797	108.3609	101.2647
Gau		84.1927	84.2396	82.8559	85.0690	83.4854	82.9303	85.0690	83.4854	82.9303
Sph		128.9818	115.4067	101.4309	128.9891	115.4161	101.4154	128.9891	115.4161	101.4154
Exp		121.4418	108.5406	108.3578	121.4419	108.5406	108.3578	121.4419	108.5406	108.3578
Gau		88.9448	113.7449	94.8973	88.9453	113.7446	94.8909	88.9453	113.7446	94.8909
Sph		117.8648	177.9010	110.4694	117.8649	177.8975	110.4694	117.8649	177.8975	110.4694

2 Supplementary figures

Sample variogram and fitted covariance models

The winner permutations taken by one, two or three variograms (Exponential, Gaussian and/or Spherical) for independent spatio, temporal and joint spatio-temporal models according to the covariance structure (metric, separable, productSum, sumMetric and simpleSumMetric) are presented for global, post-productive, productive, school, pre-school and infant mortalities in Supplementary Figures 1-6 respectively.

Figure 1 Sample variogram and fitted covariance models for global mortality.

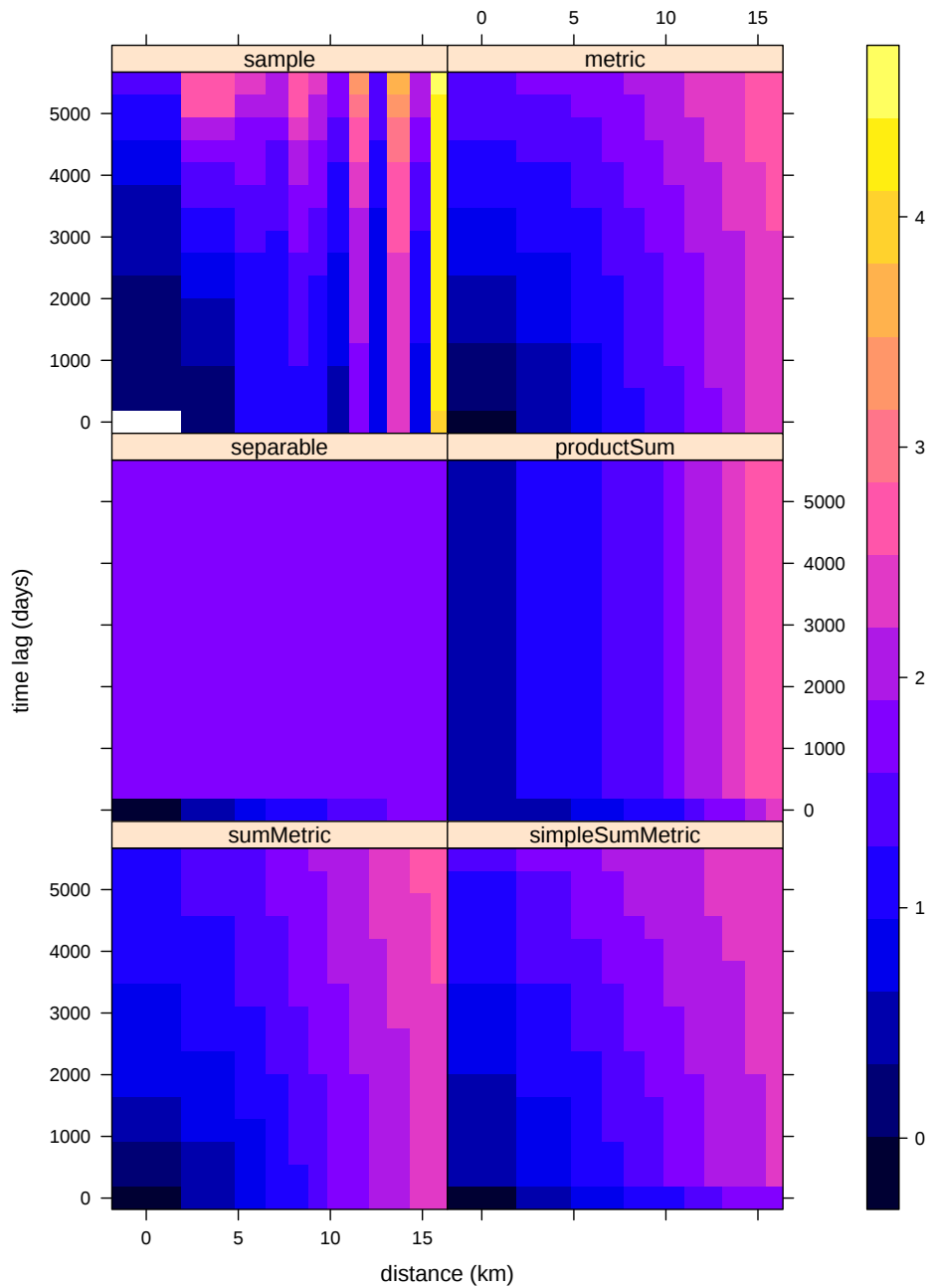


Figure 2 Sample variogram and fitted covariance models for post-productive mortality.

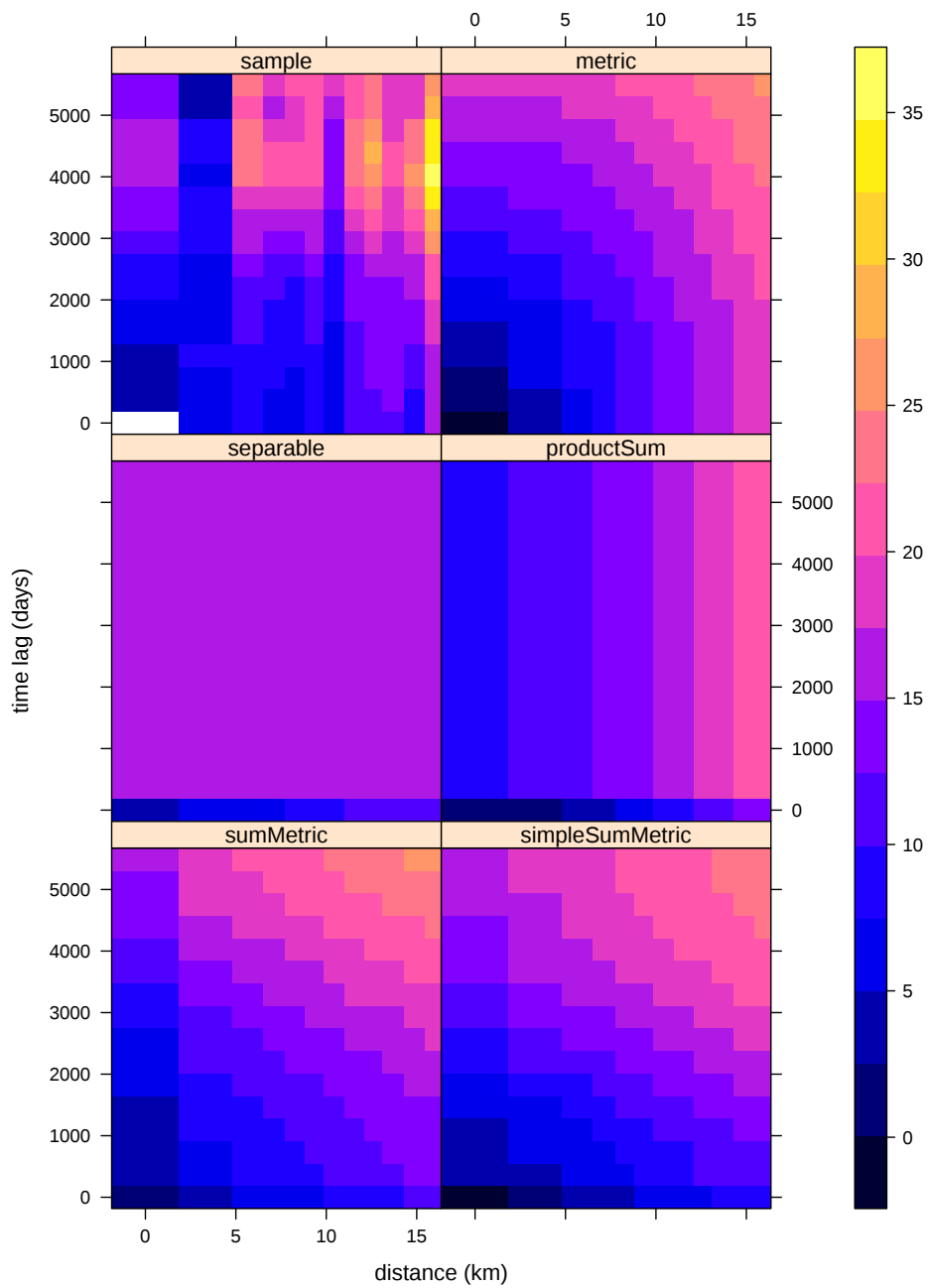


Figure 3 Sample variogram and fitted covariance models for productive mortality.

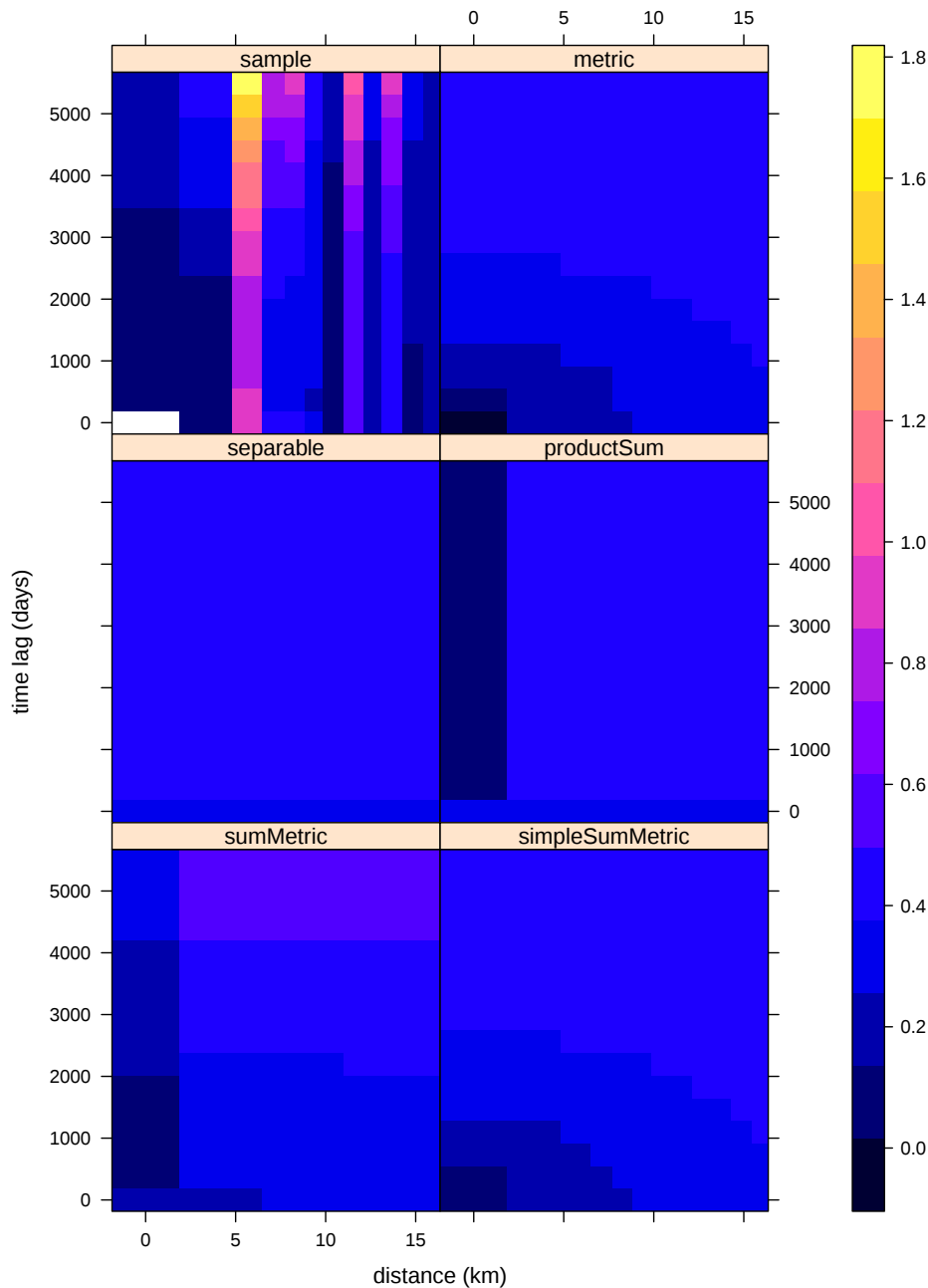


Figure 4 Sample variogram and fitted covariance models for school mortality.

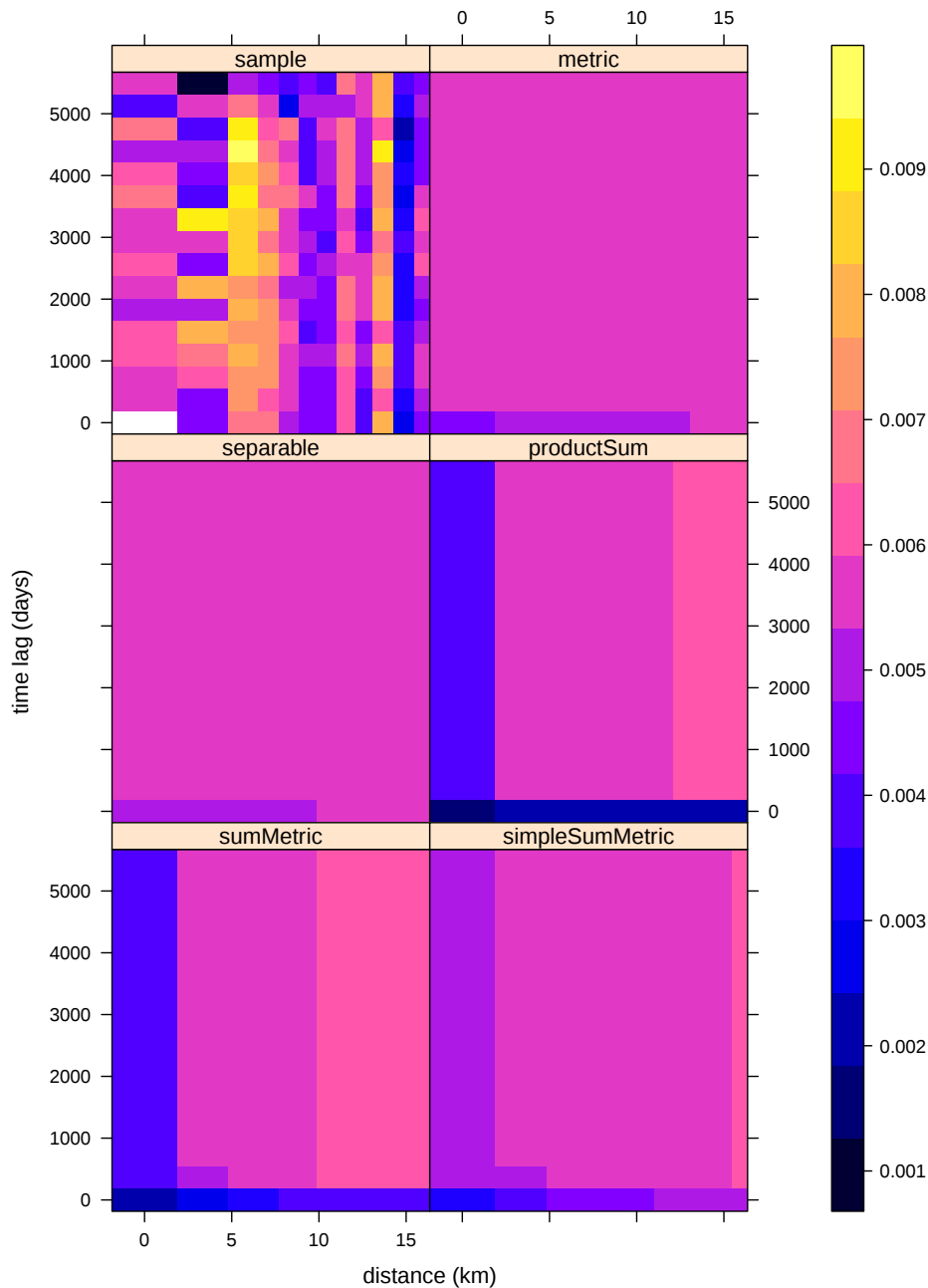


Figure 5 Sample variogram and fitted covariance models for pre-school mortality.

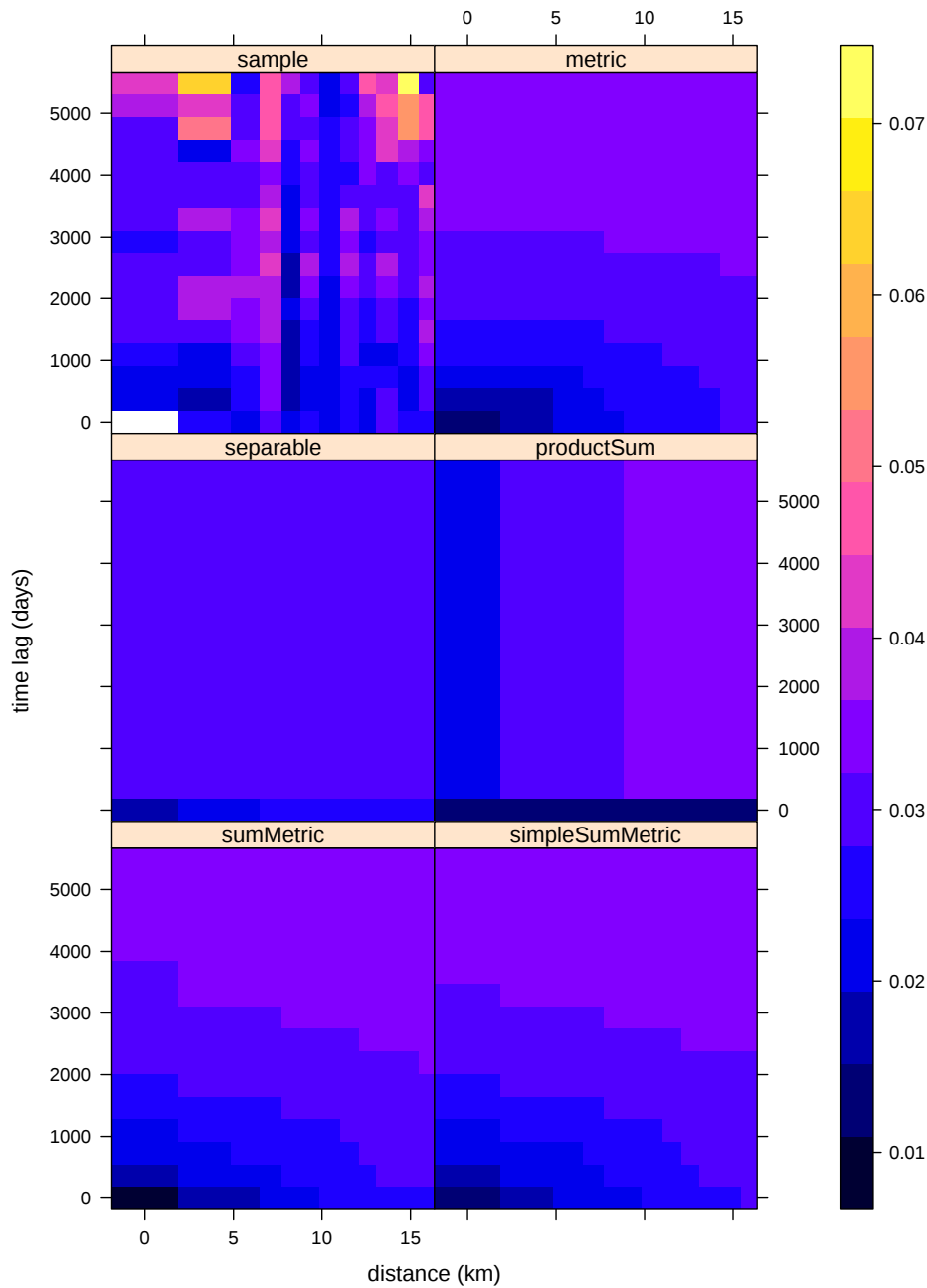


Figure 6 Sample variogram and fitted covariance models for infant mortality.

