

**How to cite this article:** Mukherjee U. K., Benjamin E. Bagozzi, Snigdhansu Chatterjee, (2022), A Bayesian Framework For Studying Climate Anomalies and Social Conflicts, *xxx.*, *xxxx;xx:x–x*.

## APPENDIX

**TABLE 1** Results of MCMC computation when using positive temperature anomalies on material conflict. Here  $\kappa$  and  $\rho = 2\kappa^{1/2}\phi$  have a *Uniform*(0.1, 3) hyperprior. Thus this case corresponds to using an infinite mixture of Matérn kernels.

	post.mean	sd	l2.5	median	u97.5	P(Par.<= 0)
(Intercept)	1.27	0.01	1.27	1.27	1.29	0.00
Language	0.62	0.07	0.51	0.66	0.69	0.00
Religion	-0.11	0.01	-0.13	-0.10	-0.09	1.00
Ethnic	0.09	0.02	0.07	0.09	0.12	0.00
HDI	-1.27	0.03	-1.31	-1.29	-1.21	1.00
Agriculture Exports	0.12	0.04	0.05	0.15	0.15	0.00
Manufacturing Exports	0.08	0.01	0.06	0.08	0.09	0.00
Commodity Exports	0.08	0.03	0.02	0.09	0.12	0.00
Pos. Temp. Anomaly	0.32	0.02	0.24	0.39	0.42	0.00

**TABLE 2** Results from MCMC computations on material conflict data for Matérn kernel parameters  $\kappa = 0.5$ ,  $\phi = 0.71$ .

	mean	sd	l2.5	median	u97.5	P(Par.<= 0)
(Intercept)	1.27	0.01	1.27	1.27	1.29	0.00
Language	0.62	0.07	0.51	0.66	0.69	0.00
Religion	-0.11	0.01	-0.13	-0.10	-0.09	1.00
Ethnic	0.09	0.02	0.07	0.09	0.12	0.00
HDI	-1.27	0.03	-1.31	-1.29	-1.21	1.00
Agriculture Exports	0.12	0.04	0.05	0.15	0.15	0.00
Manufacturing Exports	0.08	0.01	0.06	0.08	0.09	0.00
Commodity Exports	0.08	0.03	0.02	0.09	0.12	0.00
Pos. Temp. Anomaly	0.38	0.02	0.34	0.39	0.42	0.00

**TABLE 3** Results from MCMC computations on material conflict data with the linear covariance structure.

Variables	Post. Mean	Std. Dev.	L.95.C.I.	Median	U.95.C.I	$\mathbb{P}(\text{Par.} \leq 0)$
(Intercept)	0.86	0.12	0.64	0.80	1.27	0.00
Language	0.06	0.10	-0.12	0.03	0.46	0.06
Religion	-0.07	0.09	-0.29	-0.04	0.12	0.83
Ethnic	-0.08	0.12	-0.31	-0.06	0.03	0.56
HDI	-0.15	0.35	-1.16	-0.06	0.11	0.56
Agriculture Exports	0.12	0.08	0.05	0.12	0.31	0.00
Manufacturing Exports	-0.36	0.12	-0.43	-0.43	-0.00	0.98
Commodity Exports	0.25	0.13	-0.15	0.31	0.33	0.07
Pos. Temp. Anomaly	0.13	0.10	0.01	0.18	0.24	0.03

**TABLE 4** Results from MCMC computations on material conflict data for Absolute Exponential Kernel.

Variables	Post. Mean	Std. Dev.	L.95.C.I.	Median	U.95.C.I	$\mathbb{P}(\text{Par.} \leq 0)$
(Intercept)	0.75	0.03	0.66	0.76	0.76	0.00
Language	0.04	0.06	0.01	0.01	0.19	0.00
Religion	-0.11	0.03	-0.19	-0.10	-0.10	1.00
Ethnic	-0.12	0.06	-0.20	-0.08	-0.08	1.00
HDI	-0.22	0.06	-0.25	-0.25	-0.07	1.00
Agriculture Exports	-0.15	0.05	-0.18	-0.18	0.03	0.97
Manufacturing Exports	0.04	0.08	-0.07	0.09	0.09	0.31
Commodity Exports	0.02	0.02	0.01	0.01	0.02	0.01
Pos. Temp. Anomaly	0.07	0.03	0.00	0.07	0.08	0.02

**TABLE 5** Results from MCMC computations on material conflict data for Double Exponential Kernel (Gaussian Kernel).

Variables	Post. Mean	Std. Dev.	L.95.C.I.	Median	U.95.C.I	$\mathbb{P}(\text{Par.} \leq 0)$
(Intercept)	0.70	0.12	0.65	0.65	1.12	0.00
Language	0.00	0.15	-0.07	-0.07	0.50	0.76
Religion	-0.03	0.04	-0.12	-0.02	0.03	0.97
Ethnic	-0.09	0.09	-0.30	-0.06	0.04	0.97
HDI	-0.19	0.18	-0.99	-0.15	-0.15	1.00
Agriculture Exports	0.37	0.09	0.12	0.42	0.42	0.00
Manufacturing Exports	-0.27	0.11	-0.33	-0.30	0.21	0.95
Commodity Exports	0.04	0.08	-0.00	-0.00	0.28	0.76
Pos. Temp. Anomaly	0.03	0.07	0.01	0.01	0.35	0.00

**TABLE 6** Results of INLAhttps://www.r-inla.org/home computation on material conflict data.

Variables	Post. Mean	Std. Dev.	L.95.C.I.	Median	U.95.C.I
(Intercept)	5.54	0.27	5.02	5.54	6.06
Language	-1.38	0.25	-1.86	-1.38	-0.90
Religion	-1.25	0.28	-1.79	-1.25	-0.72
Ethnic	1.48	0.33	0.82	1.48	2.13
HDI	0.11	0.21	-0.29	0.11	0.52
Agriculture Exports	-0.01	0.00	-0.01	-0.01	-0.01
Manufacturing Exports	0.01	0.00	0.00	0.01	0.01
Commodity Exports	0.01	0.00	0.01	0.01	0.02
Pos. Temp. Anomaly	0.01	0.01	0.01	0.02	0.03

**TABLE 7** Results of JAGS computation for estimating the effect of positive temperature anomalies on material conflict.

Variables	Post. Mean	Std. Dev.	L.95.C.I.	Median	U.95.C.I
(Intercept)	0.41	0.02	0.37	0.41	0.44
Language	-0.73	0.09	-0.78	-0.75	-0.66
Religion	-0.54	0.03	-0.61	-0.53	-0.49
Ethnic	0.04	0.03	-0.01	0.04	0.13
HDI	-0.06	0.03	-0.13	-0.06	-0.02
Agriculture Exports	0.25	0.03	0.23	0.27	0.30
Manufacturing Exports	-0.06	0.01	-0.07	-0.06	-0.05
Commodity Exports	0.06	0.01	0.06	0.07	0.07
Pos. Temp. Anomaly	0.04	0.01	0.03	0.04	0.05