

Supplementary Materials: Improving Victimization Risk Estimation: A Geographically Weighted Regression Approach

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The following Table S1 and Table S2 list the parameter values tested for the two-population case, along with fitness values obtained. Due to space constraints, Table S1 shows the fitness scores of the estimated risks for the first reference population, while Table S2 shows the fitness scores of the risk for the second population.

Table S1. Fitness scores for the estimated risk of the first reference population. Bold is used to indicate which parameters are change from one row to the next.

Parameters									Fit for Estimated R1		
Range (R1)	Range (P1)	Partial Sill (P1)	Nugget (P1)	Range (R2)	Range (P2)	Partial Sill (P2)	Nugget (P2)	ϵ_c	Fit (Naïve)	Fit (GWR)	Fit (Bayes)
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.71	0.01
50.00	7.00	16500.00	2500.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.71	0.01
50.00	7.00	16500.00	5000.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.75	0.01
50.00	7.00	16500.00	10000.00	10.00	36.00	180000.00	58000.00	15%	0.00	0.79	0.01
75.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.67	0.01
25.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.69	0.01
10.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.64	0.01
5.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.49	0.01
50.00	3.50	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.74	0.01
50.00	14.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.57	0.03
50.00	28.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.08	0.49	0.11
50.00	56.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.11	0.46	0.16
50.00	7.00	10000.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.68	0.01
50.00	7.00	20000.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.71	0.01
50.00	7.00	40000.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.01	0.65	0.01
50.00	7.00	80000.00	1250.00	10.00	36.00	180000.00	58000.00	15%	0.02	0.57	0.02
50.00	7.00	16500.00	1250.00	5.00	36.00	180000.00	58000.00	15%	0.01	0.70	0.01
50.00	7.00	16500.00	1250.00	20.00	36.00	180000.00	58000.00	15%	0.01	0.74	0.02
50.00	7.00	16500.00	1250.00	40.00	36.00	180000.00	58000.00	15%	0.01	0.71	0.01
50.00	7.00	16500.00	1250.00	80.00	36.00	180000.00	58000.00	15%	0.01	0.72	0.02
50.00	7.00	16500.00	1250.00	10.00	18.00	180000.00	58000.00	15%	0.01	0.72	0.01
50.00	7.00	16500.00	1250.00	10.00	9.00	180000.00	58000.00	15%	0.01	0.68	0.01
50.00	7.00	16500.00	1250.00	10.00	4.50	180000.00	58000.00	15%	0.01	0.70	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	90000.00	58000.00	15%	0.01	0.72	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	45000.00	58000.00	15%	0.01	0.69	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	22500.00	58000.00	15%	0.01	0.71	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	360000.00	58000.00	15%	0.01	0.66	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	29000.00	15%	0.01	0.65	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	14500.00	15%	0.01	0.71	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	7250.00	15%	0.01	0.69	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	116000.00	15%	0.01	0.69	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	5%	0.01	0.72	0.04
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	10%	0.01	0.70	0.02
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	50%	0.01	0.64	0.01
50.00	7.00	16500.00	1250.00	10.00	36.00	180000.00	58000.00	100%	0.01	0.63	0.01

Table S2. Fitness scores for the estimated risk of the second reference population. Bold is used to indicate which parameters are change from one row to the next.

Parameters								Fit for Estimated R2			
Range (R1)	Range (P1)	Partial Sill (P1)	Nugget (P1)	Range (R2)	Range (P2)	Partial Sill (P2)	Nugget (P2)	εc	Fit (Naïve)	Fit (GWR)	Fit (Bayes)
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.26	0.02
50.00	7.00	16,500.00	2,500.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.30	0.01
50.00	7.00	16,500.00	5,000.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.29	0.02
50.00	7.00	16,500.00	10,000.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.30	0.01
75.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.30	0.01
25.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.23	0.01
10.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.18	0.01
5.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.15	0.01
50.00	3.50	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.27	0.01
50.00	14.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.28	0.01
50.00	28.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.30	0.01
50.00	56.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.38	0.01
50.00	7.00	10,000.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.32	0.01
50.00	7.00	20,000.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.28	0.01
50.00	7.00	40,000.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.29	0.01
50.00	7.00	80,000.00	1,250.00	10.00	36.00	180,000.00	58,000.00	15%	0.01	0.25	0.01
50.00	7.00	16,500.00	1,250.00	5.00	36.00	180,000.00	58,000.00	15%	0.00	0.23	0.00
50.00	7.00	16,500.00	1,250.00	20.00	36.00	180,000.00	58,000.00	15%	0.01	0.26	0.01
50.00	7.00	16,500.00	1,250.00	40.00	36.00	180,000.00	58,000.00	15%	0.02	0.23	0.02
50.00	7.00	16,500.00	1,250.00	80.00	36.00	180,000.00	58,000.00	15%	0.01	0.23	0.01
50.00	7.00	16,500.00	1,250.00	10.00	18.00	180,000.00	58,000.00	15%	0.01	0.30	0.01
50.00	7.00	16,500.00	1,250.00	10.00	9.00	180,000.00	58,000.00	15%	0.01	0.29	0.01
50.00	7.00	16,500.00	1,250.00	10.00	4.50	180,000.00	58,000.00	15%	0.00	0.41	0.00
50.00	7.00	16,500.00	1,250.00	10.00	36.00	90,000.00	58,000.00	15%	0.01	0.34	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	45,000.00	58,000.00	15%	0.00	0.36	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	22,500.00	58,000.00	15%	0.01	0.43	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	360,000.00	58,000.00	15%	0.00	0.46	0.00
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	29,000.00	15%	0.01	0.23	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	14,500.00	15%	0.02	0.21	0.02
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	7,250.00	15%	0.02	0.11	0.03
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	116,000.00	15%	0.02	0.09	0.03
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	5%	0.01	0.42	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	10%	0.01	0.30	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	50%	0.01	0.28	0.01
50.00	7.00	16,500.00	1,250.00	10.00	36.00	180,000.00	58,000.00	100%	0.01	0.27	0.01