A comparison of design-based and model-based approaches for finite population spatial data – Supplementary Material.

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1. Numerical Study Tables

Recall the four design-analysis combinations and the parameter configurations, summarized in Table 1 and 2, respectively.

	Design	Model
IRS	IRS-Design	IRS-Model
GRTS	GRTS-Design	GRTS-Model

Table 1: Types of Sampling Design and Analysis combinations considered in the simulation study. The rows give the two types of sampling designs while the columns give the two types of analyses.

Sample Size (n)	50	100	200
Layout	Random	Gridded	-
Proportion of Dependent Error	0	0.5	0.9
Response Type	Normal	Lognormal	-

Table 2: Simulation parameters. Total variability for all scenarios was 2 so that the partial sill was 0, 1, or 1.8.

Next we present a summary table for each of the 36 simulation scenarios.

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Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0	50	-0.0001	0.1939	0.9475
IRS-Model	Gridded	Normal	0	50	-0.0001	0.1960	0.9370
GRTS-Design	Gridded	Normal	0	50	-0.0010	0.1930	0.9175
GRTS-Model	Gridded	Normal	0	50	-0.0016	0.1936	0.9405

Table 3: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0	50	0.0077	1.0498	0.8355
IRS-Model	Gridded	Lognormal	0	50	-0.0274	1.2011	0.8230
GRTS-Design	Gridded	Lognormal	0	50	0.0092	0.9618	0.7910
GRTS-Model	Gridded	Lognormal	0	50	-0.0069	0.9808	0.8100

Table 4: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0	50	0.0045	0.1948	0.9410
IRS-Model	Random	Normal	0	50	0.0048	0.1966	0.9360
GRTS-Design	Random	Normal	0	50	0.0056	0.1943	0.9000
GRTS-Model	Random	Normal	0	50	0.0057	0.1947	0.9365

Table 5: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0	50	0.0116	0.9684	0.8205
IRS-Model	Random	Lognormal	0	50	-0.0235	1.0055	0.8150
GRTS-Design	Random	Lognormal	0	50	-0.0005	0.9151	0.8075
GRTS-Model	Random	Lognormal	0	50	-0.0175	0.9426	0.8240

Table 6: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0.5	50	-0.0006	0.1571	0.9600
IRS-Model	Gridded	Normal	0.5	50	-0.0005	0.1509	0.9435
GRTS-Design	Gridded	Normal	0.5	50	0.0006	0.1463	0.9240
GRTS-Model	Gridded	Normal	0.5	50	0.0006	0.1443	0.9445

Table 7: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0.5	50	0.0154	0.8578	0.8700
IRS-Model	Gridded	Lognormal	0.5	50	-0.0209	0.9091	0.8490
GRTS-Design	Gridded	Lognormal	0.5	50	-0.0046	0.8302	0.8400
GRTS-Model	Gridded	Lognormal	0.5	50	-0.0167	0.8301	0.8495

Table 8: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0.5	50	0.0089	0.1720	0.9385
IRS-Model	Random	Normal	0.5	50	0.0074	0.1580	0.9310
GRTS-Design	Random	Normal	0.5	50	0.0060	0.1460	0.9145
GRTS-Model	Random	Normal	0.5	50	0.0059	0.1439	0.9365

Table 9: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0.5	50	0.0006	0.8479	0.8670
IRS-Model	Random	Lognormal	0.5	50	-0.0447	0.8845	0.8485
GRTS-Design	Random	Lognormal	0.5	50	0.0022	0.8663	0.8230
GRTS-Model	Random	Lognormal	0.5	50	-0.0044	0.8620	0.8470

Table 10: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0.9	50	-0.0021	0.1185	0.9790
IRS-Model	Gridded	Normal	0.9	50	-0.0023	0.0925	0.9475
GRTS-Design	Gridded	Normal	0.9	50	-0.0004	0.0957	0.9280
GRTS-Model	Gridded	Normal	0.9	50	0.0015	0.0874	0.9300

Table 11: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0.9	50	0.0191	0.6345	0.9310
IRS-Model	Gridded	Lognormal	0.9	50	0.0043	0.6031	0.8850
GRTS-Design	Gridded	Lognormal	0.9	50	-0.0072	0.6496	0.8890
GRTS-Model	Gridded	Lognormal	0.9	50	-0.0144	0.5873	0.8890

Table 12: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0.9	50	-0.0022	0.1451	0.9445
IRS-Model	Random	Normal	0.9	50	-0.0016	0.1018	0.9350
GRTS-Design	Random	Normal	0.9	50	-0.0022	0.0963	0.9235
GRTS-Model	Random	Normal	0.9	50	-0.0016	0.0881	0.9360

Table 13: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0.9	50	-0.0279	0.7417	0.9080
IRS-Model	Random	Lognormal	0.9	50	-0.0479	0.6787	0.8720
GRTS-Design	Random	Lognormal	0.9	50	-0.0101	0.5712	0.8995
GRTS-Model	Random	Lognormal	0.9	50	-0.0079	0.5143	0.8935

Table 14: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0	100	-0.0031	0.1343	0.9430
IRS-Model	Gridded	Normal	0	100	-0.0035	0.1349	0.9405
GRTS-Design	Gridded	Normal	0	100	0.0016	0.1327	0.9200
GRTS-Model	Gridded	Normal	0	100	0.0015	0.1327	0.9395

Table 15: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0	100	0.0123	0.6517	0.8595
IRS-Model	Gridded	Lognormal	0	100	0.0037	0.6698	0.8540
GRTS-Design	Gridded	Lognormal	0	100	0.0175	0.6309	0.8275
GRTS-Model	Gridded	Lognormal	0	100	0.0108	0.6450	0.8460

Table 16: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0	100	0.0058	0.1363	0.9350
IRS-Model	Random	Normal	0	100	0.0062	0.1373	0.9315
GRTS-Design	Random	Normal	0	100	0.0033	0.1351	0.9175
GRTS-Model	Random	Normal	0	100	0.0033	0.1350	0.9460

Table 17: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0	100	-0.0187	0.6427	0.8595
IRS-Model	Random	Lognormal	0	100	-0.0394	0.6726	0.8565
GRTS-Design	Random	Lognormal	0	100	0.0049	0.6366	0.8445
GRTS-Model	Random	Lognormal	0	100	0.0011	0.6431	0.8585

Table 18: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0.5	100	-0.0005	0.1070	0.9640
IRS-Model	Gridded	Normal	0.5	100	-0.0006	0.1041	0.9335
GRTS-Design	Gridded	Normal	0.5	100	-0.0010	0.1014	0.9145
GRTS-Model	Gridded	Normal	0.5	100	-0.0011	0.1006	0.9365

Table 19: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0.5	100	0.0156	0.5285	0.9060
IRS-Model	Gridded	Lognormal	0.5	100	0.0020	0.5346	0.8800
GRTS-Design	Gridded	Lognormal	0.5	100	0.0061	0.4945	0.8595
GRTS-Model	Gridded	Lognormal	0.5	100	0.0015	0.4965	0.8705

Table 20: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0.5	100	0.0002	0.1169	0.9440
IRS-Model	Random	Normal	0.5	100	0.0023	0.1042	0.9450
GRTS-Design	Random	Normal	0.5	100	0.0030	0.1032	0.9140
GRTS-Model	Random	Normal	0.5	100	0.0024	0.1022	0.9335

Table 21: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0.5	100	-0.0020	0.5609	0.8895
IRS-Model	Random	Lognormal	0.5	100	-0.0209	0.5570	0.8835
GRTS-Design	Random	Lognormal	0.5	100	-0.0106	0.5261	0.8800
GRTS-Model	Random	Lognormal	0.5	100	-0.0199	0.5358	0.8875

Table 22: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0.9	100	0.0008	0.0702	0.9915
IRS-Model	Gridded	Normal	0.9	100	0.0016	0.0573	0.9510
GRTS-Design	Gridded	Normal	0.9	100	0.0002	0.0600	0.9315
GRTS-Model	Gridded	Normal	0.9	100	-0.0001	0.0540	0.9515

Table 23: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0.9	100	0.0165	0.4844	0.9595
IRS-Model	Gridded	Lognormal	0.9	100	0.0062	0.4274	0.8975
GRTS-Design	Gridded	Lognormal	0.9	100	0.0056	0.3959	0.9135
GRTS-Model	Gridded	Lognormal	0.9	100	-0.0015	0.3764	0.9200

Table 24: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0.9	100	-0.0034	0.1021	0.9425
IRS-Model	Random	Normal	0.9	100	-0.0015	0.0611	0.9480
GRTS-Design	Random	Normal	0.9	100	-0.0009	0.0614	0.9275
GRTS-Model	Random	Normal	0.9	100	-0.0004	0.0548	0.9410

Table 25: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0.9	100	-0.0048	0.5829	0.9275
IRS-Model	Random	Lognormal	0.9	100	-0.0287	0.5423	0.9205
GRTS-Design	Random	Lognormal	0.9	100	0.0010	0.4351	0.9180
GRTS-Model	Random	Lognormal	0.9	100	-0.0025	0.3975	0.9140

Table 26: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0	200	0.0005	0.0882	0.9455
IRS-Model	Gridded	Normal	0	200	0.0005	0.0882	0.9435
GRTS-Design	Gridded	Normal	0	200	0.0034	0.0882	0.9430
GRTS-Model	Gridded	Normal	0	200	0.0034	0.0882	0.9500

Table 27: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0	200	0.0109	0.4122	0.8815
IRS-Model	Gridded	Lognormal	0	200	0.0102	0.4128	0.8790
GRTS-Design	Gridded	Lognormal	0	200	-0.0128	0.4355	0.8825
GRTS-Model	Gridded	Lognormal	0	200	-0.0132	0.4362	0.8865

Table 28: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0	200	-0.0025	0.0869	0.9500
IRS-Model	Random	Normal	0	200	-0.0024	0.0872	0.9505
GRTS-Design	Random	Normal	0	200	0.0027	0.0875	0.9470
GRTS-Model	Random	Normal	0	200	0.0027	0.0876	0.9505

Table 29: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0	200	0.0166	0.4146	0.8975
IRS-Model	Random	Lognormal	0	200	0.0074	0.4479	0.8930
GRTS-Design	Random	Lognormal	0	200	-0.0044	0.4800	0.8870
GRTS-Model	Random	Lognormal	0	200	-0.0063	0.4820	0.8875

Table 30: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0.5	200	-0.0003	0.0682	0.9735
IRS-Model	Gridded	Normal	0.5	200	-0.0005	0.0664	0.9435
GRTS-Design	Gridded	Normal	0.5	200	0.0002	0.0661	0.9415
GRTS-Model	Gridded	Normal	0.5	200	0.0001	0.0656	0.9450

Table 31: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0.5	200	-0.0008	0.3556	0.9379
IRS-Model	Gridded	Lognormal	0.5	200	-0.0030	0.3540	0.9144
GRTS-Design	Gridded	Lognormal	0.5	200	-0.0001	0.3305	0.9029
GRTS-Model	Gridded	Lognormal	0.5	200	-0.0041	0.3287	0.9049

Table 32: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0.5	200	0.0039	0.0771	0.9464
IRS-Model	Random	Normal	0.5	200	0.0024	0.0684	0.9489
GRTS-Design	Random	Normal	0.5	200	-0.0001	0.0658	0.9374
GRTS-Model	Random	Normal	0.5	200	-0.0003	0.0652	0.9444

Table 33: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0.5	200	0.0091	0.3861	0.9164
IRS-Model	Random	Lognormal	0.5	200	-0.0048	0.3783	0.9069
GRTS-Design	Random	Lognormal	0.5	200	0.0012	0.4088	0.9029
GRTS-Model	Random	Lognormal	0.5	200	-0.0005	0.3941	0.9029

Table 34: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Normal	0.9	200	0.0002	0.0413	0.9965
IRS-Model	Gridded	Normal	0.9	200	-0.0008	0.0356	0.9475
GRTS-Design	Gridded	Normal	0.9	200	-0.0004	0.0381	0.9475
GRTS-Model	Gridded	Normal	0.9	200	-0.0000	0.0349	0.9490

Table 35: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Gridded	Lognormal	0.9	200	0.0026	0.2868	0.9835
IRS-Model	Gridded	Lognormal	0.9	200	-0.0016	0.2560	0.9154
GRTS-Design	Gridded	Lognormal	0.9	200	-0.0038	0.2341	0.9309
GRTS-Model	Gridded	Lognormal	0.9	200	-0.0062	0.2290	0.9239

Table 36: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Normal	0.9	200	-0.0037	0.0673	0.9410
IRS-Model	Random	Normal	0.9	200	-0.0012	0.0385	0.9505
GRTS-Design	Random	Normal	0.9	200	0.0002	0.0389	0.9370
GRTS-Model	Random	Normal	0.9	200	0.0005	0.0349	0.9435

Table 37: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.

Approach	Layout	Response	DE Prop	n	Bias	rMS(P)E	Coverage
IRS-Design	Random	Lognormal	0.9	200	0.0154	0.3554	0.9313
IRS-Model	Random	Lognormal	0.9	200	0.0008	0.2657	0.9238
GRTS-Design	Random	Lognormal	0.9	200	0.0058	0.2299	0.9218
GRTS-Model	Random	Lognormal	0.9	200	0.0043	0.2206	0.9147

Table 38: Approach, layout (Layout), response type (Response) roportion of dependent error (DE Prop), sample size (n), mean (prediction) bias (Bias), root-mean-squared-(prediction) error (rMS(P)E), and 95% interval coverage (Coverage) for a simulation scenario.