

Supplemental Tables and Figures

Table S1: Standardized bias in fitted coefficients when survival times are generated with target median of 35, random censoring, and using mixed covariates varying the survival time bounds (20-300, 20-150, 20-50), percent of censored observations (none, 20%, 50%, and 80%), and shape parameter of the baseline hazard (ν , 2, 1, or 0.5).

Survival Time Bounds	Percent Censored	$Z1 \sim N(50, 100)$			$Z2 \sim Bern(0.5)$		
		Shape Parameter (ν)			Shape Parameter (ν)		
		0.5	1	2	0.5	1	2
20-300	0%	0.89	3.96	-5.39	4.07	-3.97	0.93
	20%	-2.07	0.67	-15.05	4.41	-2.64	6.52
	50%	-4.66	0.36	-14.16	7.31	2.5	8.63
	80%	-6.75	-3.72	-14.08	-0.72	4.52	9.69
20-150	0%	-1.97	-3.11	-2.59	4.81	-2.22	1.78
	20%	-1.48	-8.02	-7.67	5.36	3.19	6.26
	50%	-2.19	-8.03	-11.65	4.95	1.99	16.52
	80%	-3.06	-2.46	-11.08	4.66	3.71	9.69
20-50	0%	-40.9	-32.89	-14.21	44.5	38.18	19.36
	20%	-43.84	-33.46	-20.00	45.05	39.21	23.08
	50%	-41.88	-34.71	-28.56	44.12	39.33	30.36
	80%	-33.86	-23.01	-21.95	30.8	26.35	14.15

Table S2: Standardized bias in fitted coefficients when survival times are generated bounded between 20 and 50, target median of 35, and using mixed covariates contrasting random versus traditional censoring varying the percent of censored observations (none, 20%, 50%, and 80%) and the shape parameter of the baseline hazard (ν , 2, 1, or 0.5)

Censoring Type	Percent Censored	$Z1 \sim N(50, 100)$			$Z2 \sim Bern(0.5)$		
		Shape Parameter (ν)			Shape Parameter (ν)		
		0.5	1	2	0.5	1	2
Random							
	0%	-40.90	-32.89	-14.21	44.50	38.18	19.36
	20%	-43.84	-33.46	-20.00	45.05	39.21	23.08
	50%	-41.88	-34.71	-28.56	44.12	39.33	30.36
	80%	-33.86	-23.01	-21.95	30.80	26.35	14.15
Traditional							
	0%	-40.90	-32.89	-14.21	44.5	38.18	19.36
	20%	-32.97	-24.3	-10.08	32.07	27.80	14.83
	50%	-15.69	-15.25	-3.57	14.34	14.54	3.79
	80%	-5.34	-6.33	-3.17	2.40	5.24	-2.07

Table S3: Median survival times for data generated bounded between 20 and 300 varying the target median (35, 75, and 150), the censoring method (administrative, random, traditional), and the shape parameter of the baseline hazard (ν , 2, 1, 0.5).

A: Two Normal random variables

Censoring Type	Target Median	Shape Parameter	Min	25th	Mean	Standard Deviation	Median	75th	Max
Traditional									
	35	0.5	38.5	42	43.0	1.6	41	44	48
		1	33	35	36.0	1.0	35	37	40
		2	31	32	32.6	0.7	30	33	35
	75	0.5	42	46.5	47.9	1.9	44	49	54.5
		1	49	54	55.3	2.1	49	57	62
		2	53	58	59.0	1.8	51	60	65
	150	0.5	44	49	51.0	2.2	49	52.5	59
		1	62	69	70.8	3.1	64	73	81
		2	95	105	107.1	3.6	92	109.5	120
Administrative									
	35	0.5	37	40	40.9	1.2	75	42	45
		1	33	34	34.6	0.8	54	35	37
		2	29	30	30.1	0.5	40	30	31
	75	0.5	40	43	44.3	1.4	86	45	49
		1	44	48	49.1	1.4	86	50	53
		2	48	50	51.0	1.1	77	52	54
	150	0.5	43	47.5	48.6	1.7	95	50	54
		1	57	62.5	64.0	2.2	116	65	71.5
		2	85	91	92.2	2.2	143	94	100
Random									
	35	0.5	64	72	74.9	4.3	43	78	89
		1	47	52.5	53.9	2.1	36	55	61
		2	37	40	40.2	1.0	33	41	43
	75	0.5	72	83	86.4	4.8	48	89.5	103
		1	74	83	85.8	4.0	55	88.5	100
		2	70	75	76.8	2.3	59	78	85
	150	0.5	77	91	94.9	5.3	51	98.5	113
		1	98	113	116.6	5.1	71	120	134.5
		2	131	140	142.9	4.3	107	146	156.5

Table S3B: Mixed covariates (Normal + Bernoulli)

Censoring Type	Target Median	Shape Parameter	Min	25th	Mean	Standard Deviation	Median	75th	Max
Traditional	35	0.5	30	32	32.5	0.9	31	33	36
		1	27	28	28.6	0.6	27	29	30
		2	25	26	26.8	0.5	25	27	28
	75	0.5	34	36	37.2	1.2	35	38	41
		1	33	36	36.6	1.1	34	37	40
		2	38	41	41.7	1.2	38	42	45
	150	0.5	37	41	41.7	1.5	39	43	47
		1	46	50	51.3	1.9	46	52.5	57
		2	69	75	76.6	2.4	68	78	83.5
Administrative	35	0.5	29.5	31	31.1	0.7	50	32	33
		1	26	27	27.1	0.4	36	27	28
		2	25	25	25.2	0.4	31	25	26
	75	0.5	32.5	34	34.6	0.9	62	35	37
		1	32	34	34.4	0.8	54	35	37
		2	36	38	38.1	0.7	55	39	40
	150	0.5	36	38	39.0	1.2	73.5	40	43
		1	42	45	46.1	1.3	82.5	47	50
		2	61	67	67.7	1.6	103	69	72
Random	35	0.5	43	48	49.5	2.3	32.5	51	58
		1	33	36	36.3	1.0	29	37	39
		2	29	31	31.3	0.7	27	32	34
	75	0.5	52	60	61.9	3.3	37	64	74
		1	48	53	54.1	2.1	37	55.5	61
		2	50	54	54.7	1.6	42	56	60
	150	0.5	61	71	73.7	4.1	42	76	93
		1	71	80	82.7	4.0	51	85	95
		2	93	101	103.0	3.1	76.75	105	114

Table S4: Median run times for censoring type (administrative, random, traditional) when survival times are generated bounded between 20 and 300 and using mixed covariates varying the target median (35, 75, and 150) and the shape parameter of the baseline hazard (ν , 2, 1, 0.5).

Target Median	Shape Parameter (ν)	Censoring Type			
		Uncensored	Random	Traditional	Administrative
35	0.5	28.83	29.03	80.04	57.74
	1	15.59	15.71	55.47	32.77
	2	11.41	11.51	86.34	24.39
75	0.5	34.97	35.19	91.49	69.76
	1	26.55	26.74	81.57	55.03
	2	20.59	20.75	75	45.05
150	0.5	38.09	38.34	100.15	78.30
	1	39.28	39.53	108.31	80.77
	2	37.47	37.75	116.69	83.95

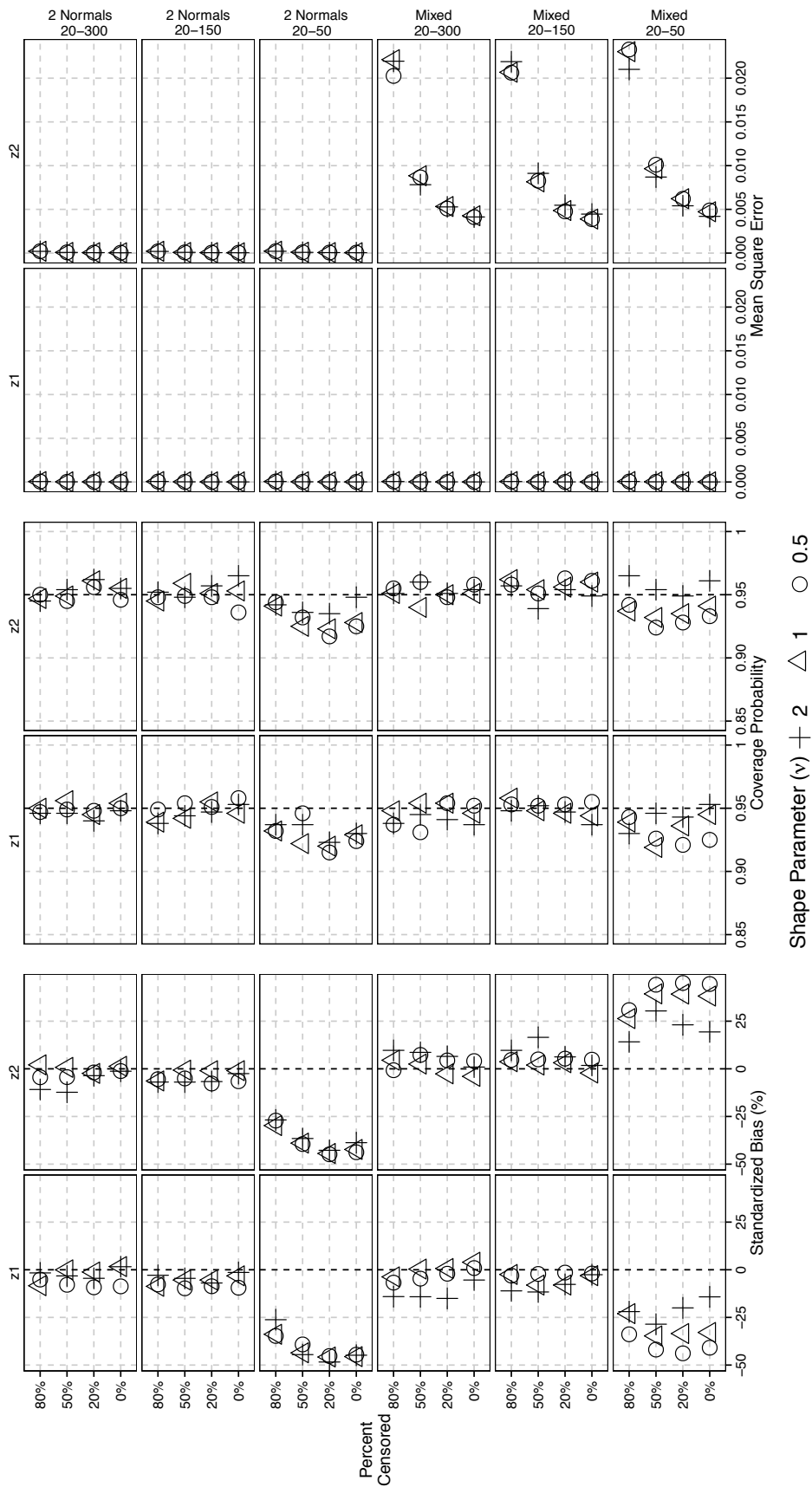


Figure S1: Standardized bias, coverage probability and MSE of fitted coefficients for each of the survival time bounds (20-300, 20-150, 20-50) when the target median is equal to 35, varying the combination of covariates (2 Normals: both Normal random variables or mixed: Normal + Bernoulli), percent of censored observations (none, 20%, 50%, and 80%), and the shape parameter of the baseline hazard $(\nu, 2, 1, 0.5)$. Covariates and effect sizes as follow: $z1 : N(50, 10^2)$ $\beta = 0.02$ and $z2 : N(30, 5^2)$ $\beta = 0.04$; Mixed, $z1 : N(50, 10^2)$ $\beta = -0.5$ and $z2 : Bern(0.5)$ $\beta = -0.5$. A: With random censoring.

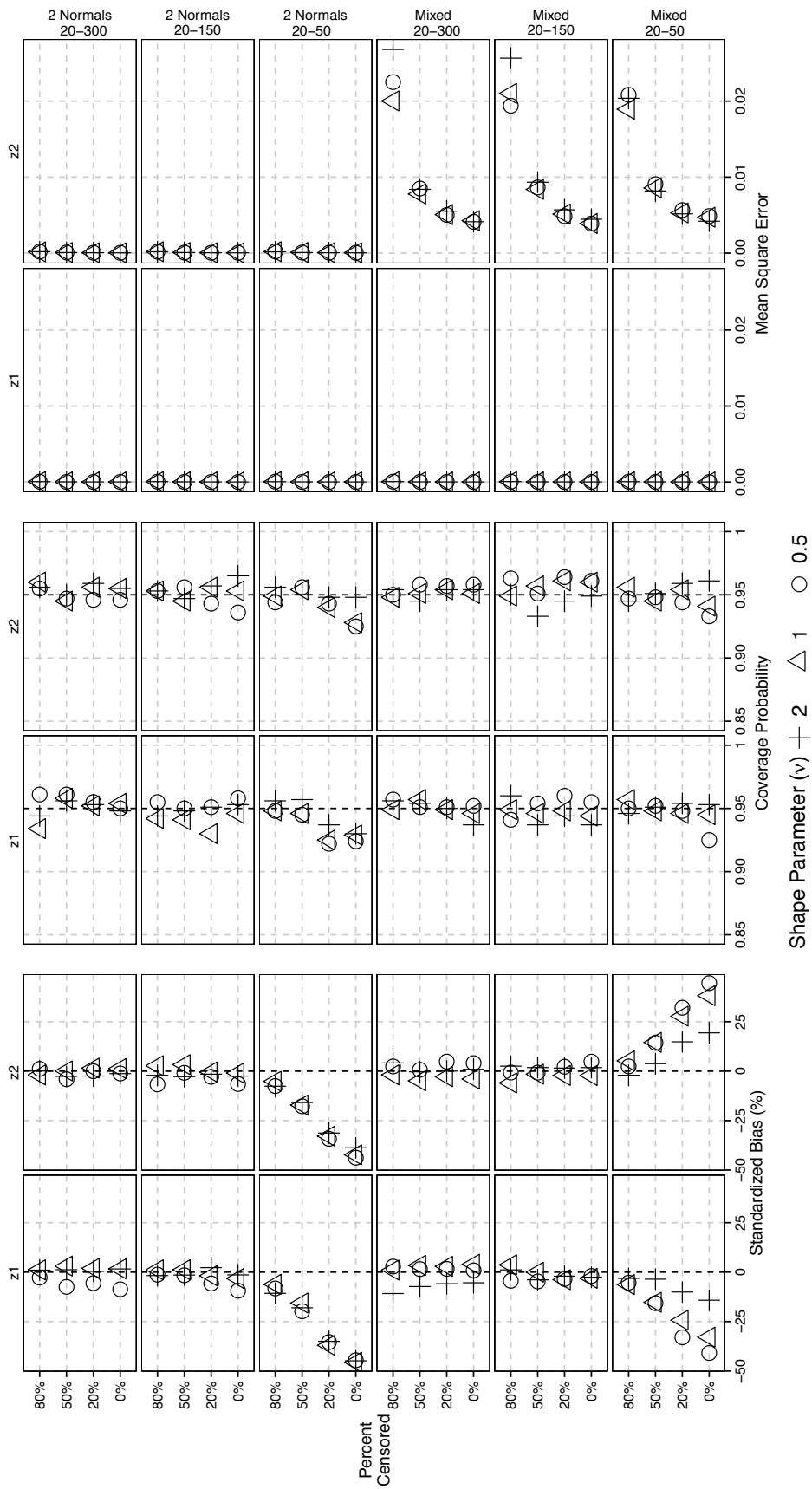


Figure S1B: With traditional censoring.

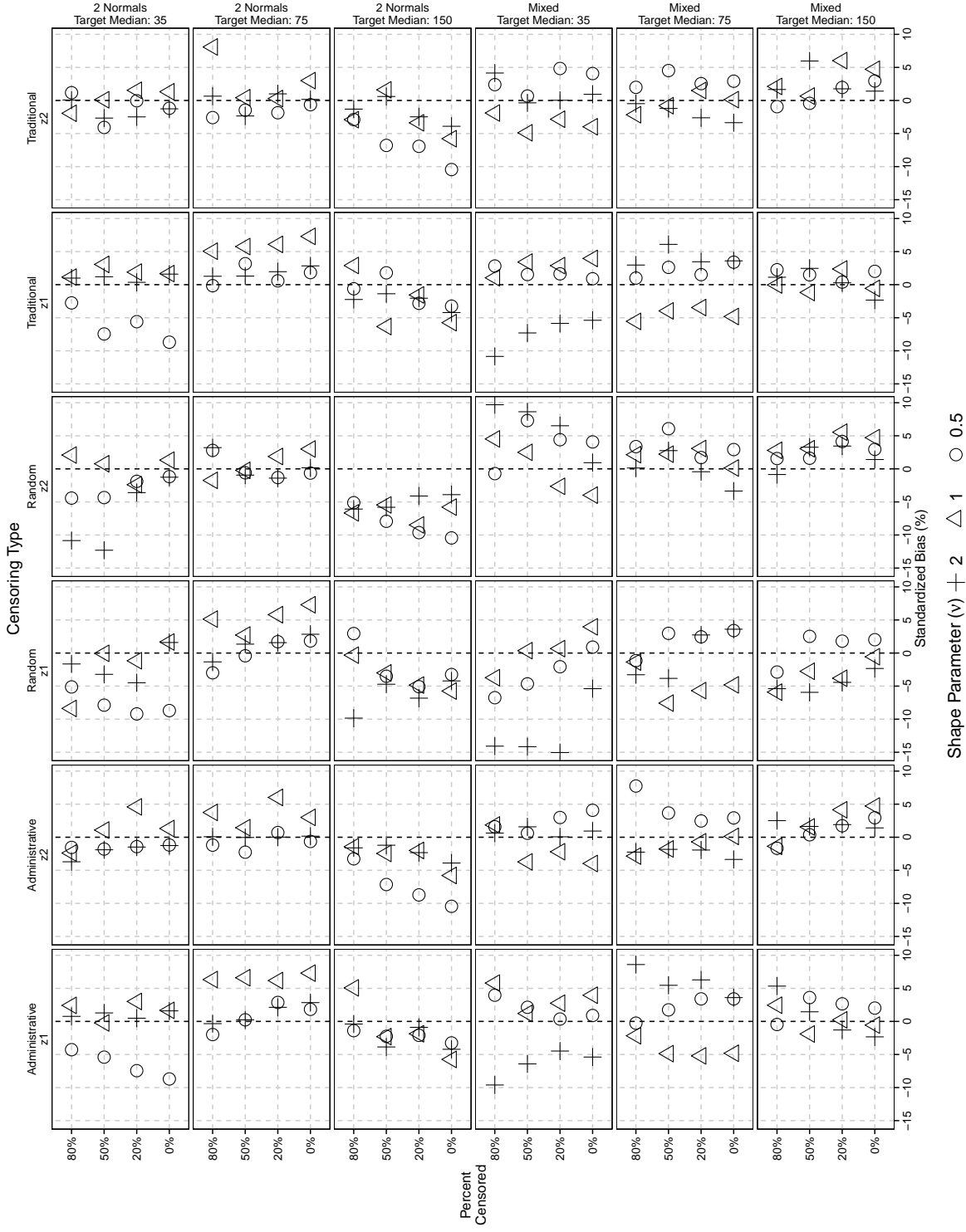


Figure S2: Performance of algorithm when generating times bounded between 20 and 300, varying the censoring type (administrative, random, and traditional), combination of covariates (2 Normals: both Normal random variables or mixed: Normal + Bernoulli), percent of censored observations (none, 20%, 50%, and 80%), target median (35, 75, 150), and the shape parameter of the baseline hazard (ν , 2, 1, 0). Covariates and effect sizes as follow: 2 Normals, $z_1 : N(50, 10^2)$ $\beta = 0.02$ and $z_2 : N(30, 5^2)$ $\beta = 0.04$; Mixed, $z_1 : N(50, 10^2)$ $\beta = 0.02$ and $z_2 : Bern(0.5)$ $\beta = -0.5$. A: Standardized bias.

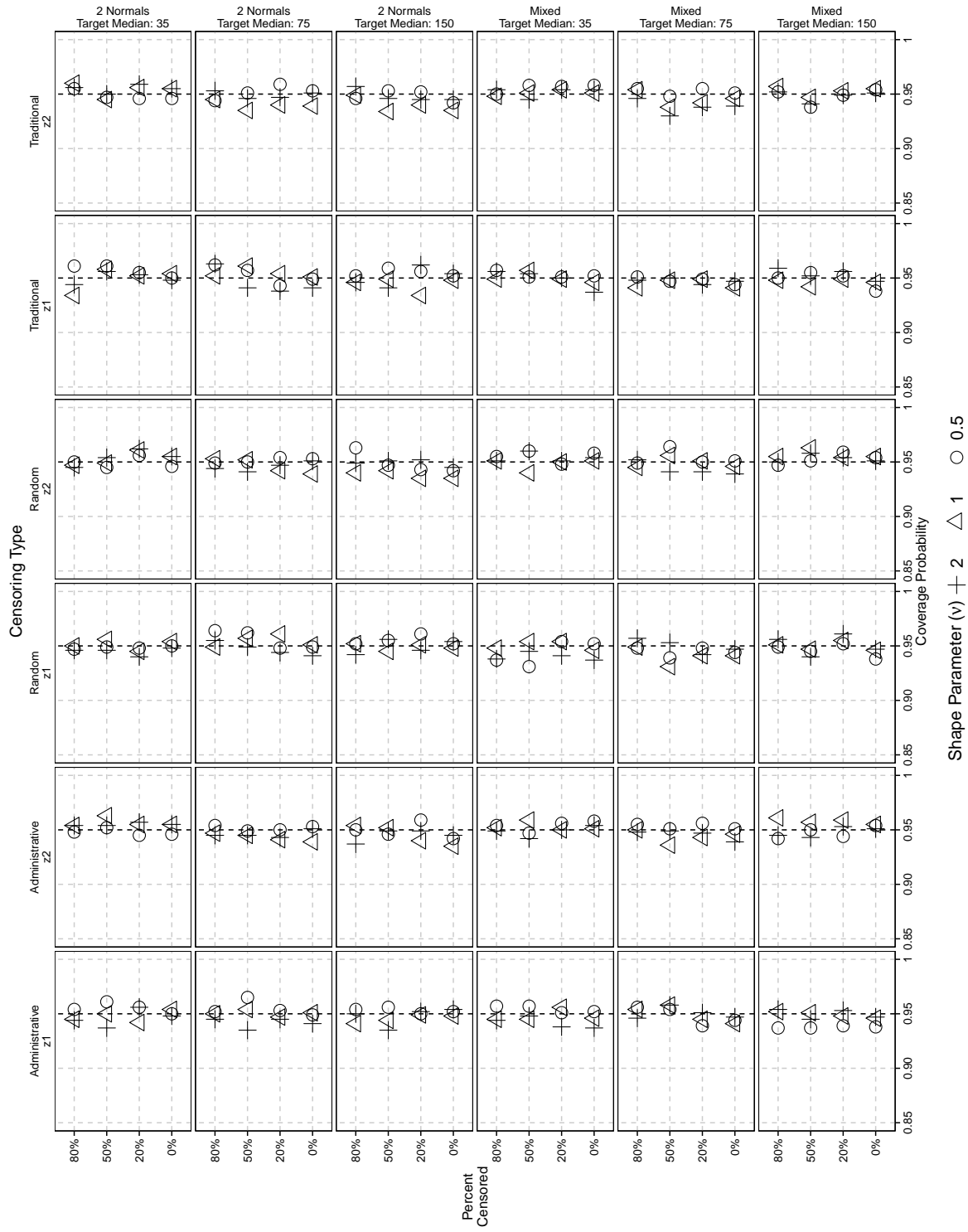


Figure S2B: Coverage probability.

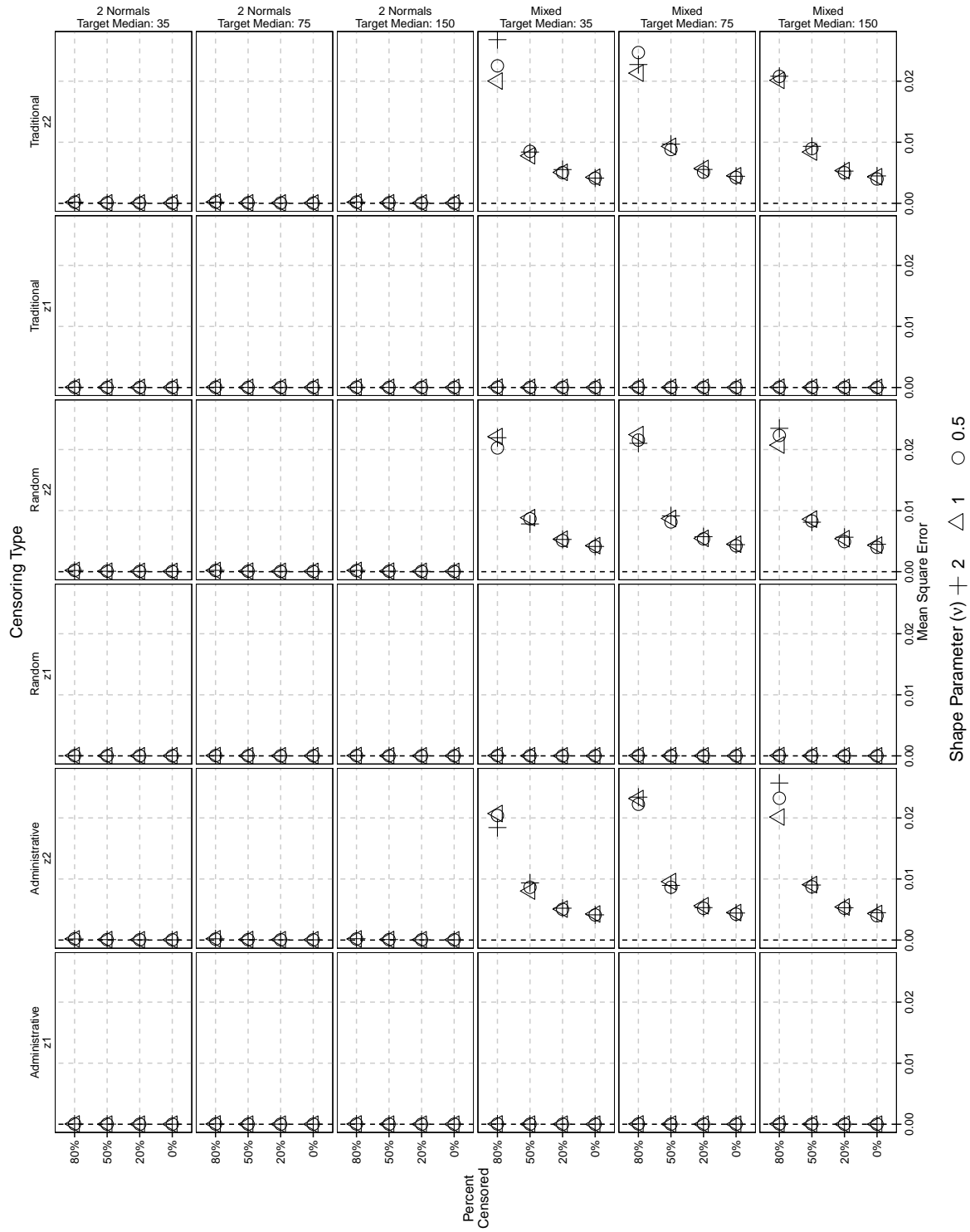


Figure S2C: Mean Square Error (MSE).