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Original Article

Supplementary Table 1. Relative bias and relative rMSE of the AM, GM, GSD, and X95 as estimated by five censoring data analysis methods for datasets generated by a combination of censoring rate and sample size

Sample size	Percent censored	Parameter	True value	Relative bias					Relative rMSE				
				LOD/2 substitution	MLE	ROS	β-substitution	Bayesian	LOD/2 substitution	MLE	ROS	β-substitution	Bayesian
30	10	AM	6.976	-0.8	-1.6	0.7	-0.6	-1.2	28.5	25.8	26.7	28.4	25.3
		GM	3.760	-1.0	0.4	2.0	-1.3	0.3	20.4	20.6	21.2	20.3	20.7
		GSD	3.040	1.4	0.3	1.0	1.2	0.9	13.4	15.6	16.9	16.7	14.9
		X95	23.410	-6.4	1.9	4.6	-0.2	2.7	39.1	33.4	35.4	34.7	32.6
	40	AM	6.976	-0.6	-1.1	2.7	-0.3	-0.8	28.6	26.4	28.1	28.4	25.8
		GM	3.760	5.7	1.4	4.2	0.0	1.1	20.3	23.1	25.3	23.2	22.9
		GSD	3.040	-12.0	0.4	1.9	1.1	1.1	15.7	21.5	25.0	21.1	19.6
		X95	23.410	-6.1	1.7	6.1	-0.8	2.6	39.4	36.0	39.4	35.1	34.3
	70	AM	6.976	5.9	0.5	8.1	0.0	-0.6	28.3	26.8	31.4	28.0	26.8
		GM	3.760	37.5	5.3	13.2	1.9	1.6	41.7	34.3	45.7	34.7	31.2
		GSD	3.040	-33.8	3.0	6.8	4.9	3.9	34.9	41.2	53.0	40.0	31.1
		X95	23.410	-6.1	0.7	7.6	-3.2	2.0	39.4	38.7	43.4	34.9	35.5
	90	AM	6.976	49.1	37.7	51.2	18.9	7.0	54.8	69.7	86.0	37.7	30.2
		GM	3.760	140.2	84.6	94.9	38.4	13.7	141.1	159.9	180.9	86.2	47.6
		GSD	3.040	-50.6	2.5	28.9	11.5	5.3	50.9	193.2	274.9	108.7	50.8
		X95	23.410	4.0	5.0	20.3	1.3	6.9	36.0	36.0	49.2	31.2	33.0
60	10	AM	6.976	-0.9	-1.3	-0.1	-0.8	-1.1	20.0	17.8	18.1	20.0	17.7
		GM	3.760	-1.1	0.3	1.2	-0.5	0.3	14.1	14.2	14.4	14.0	14.2
		GSD	3.040	1.2	-0.5	-0.1	-0.1	-0.2	9.7	10.8	11.4	12.3	10.5
		X95	23.410	-5.1	0.0	1.5	-0.9	0.5	28.5	22.4	23.2	25.0	22.2
	40	AM	6.976	-1.1	-1.1	1.0	-0.7	-0.8	20.1	18.2	18.9	19.9	18.0
		GM	3.760	4.6	0.6	2.0	-0.1	0.4	14.0	15.8	17.0	16.0	15.7
		GSD	3.040	-11.5	-0.2	0.5	0.0	0.2	13.6	14.5	16.6	14.8	13.9
		X95	23.410	-5.0	0.1	2.4	-1.1	0.7	28.5	24.1	25.8	25.3	23.6
	70	AM	6.976	5.4	-0.3	3.4	-0.4	-0.4	20.3	18.5	19.9	19.7	18.4
		GM	3.760	36.6	2.6	5.9	1.3	1.4	38.7	24.6	29.4	25.5	23.3
		GSD	3.040	-33.6	0.8	2.3	1.4	1.5	34.1	25.9	29.3	25.0	23.1
		X95	23.410	-5.0	-0.5	3.1	-2.3	0.3	28.5	26.0	27.9	25.4	24.8
	90	AM	6.976	43.9	12.5	21.1	5.0	-0.8	47.3	37.4	44.9	28.5	25.0
		GM	3.760	135.1	33.8	42.5	15.8	3.5	135.6	91.1	102.5	64.6	42.6
		GSD	3.040	-51.8	3.1	15.6	9.5	5.6	52.0	61.8	112.8	62.6	37.5
		X95	23.410	-3.5	-2.4	5.6	-5.1	-2.4	26.8	26.0	29.0	26.0	25.6
100	10	AM	6.976	-0.1	-0.4	0.5	0.1	-0.2	15.8	13.9	14.3	15.8	13.8
		GM	3.760	-1.1	0.4	0.9	-0.1	0.4	10.9	10.9	11.0	10.9	11.0
		GSD	3.040	1.8	-0.1	0.2	0.2	0.1	7.9	8.6	9.3	10.0	8.5
		X95	23.410	-2.2	0.6	1.6	0.1	0.9	22.9	17.5	18.3	19.9	17.4
	40	AM	6.976	-0.4	-0.2	1.1	0.1	0.0	15.8	14.4	14.8	15.6	14.3
		GM	3.760	4.6	0.5	1.2	0.2	0.4	11.1	12.2	13.3	12.2	12.1
		GSD	3.040	-11.0	0.1	0.9	0.2	0.4	12.4	11.9	13.5	12.2	11.6
		X95	23.410	-2.2	0.6	2.3	-0.1	1.0	22.9	19.2	20.3	20.3	18.9

Supplementary Table 1. Continued

Sample size	Percent censored	Parameter	True value	Relative bias					Relative rMSE				
				LOD/2 substitution	MLE	ROS	β-substitution	Bayesian	LOD/2 substitution	MLE	ROS	β-substitution	Bayesian
100	70	AM	6.976	6.1	0.2	2.6	0.1	0.3	16.7	14.6	15.5	15.6	14.6
		GM	3.760	36.7	1.4	3.4	0.5	0.8	37.9	19.3	23.3	20.0	18.8
		GSD	3.040	−33.1	1.0	2.0	1.3	1.5	33.5	18.6	21.8	18.5	17.7
		X95	23.410	−2.2	0.4	2.7	−0.7	0.9	22.9	20.4	21.5	20.4	19.9
	90	AM	6.976	44.2	5.0	11.5	2.3	0.2	46.4	24.9	29.8	22.6	20.7
		GM	3.760	135.1	14.1	22.2	7.6	3.1	135.4	58.5	68.6	49.5	38.6
		GSD	3.040	−51.5	3.9	11.1	6.4	5.0	51.7	41.0	122.3	40.9	31.7
		X95	23.410	−1.9	−1.3	3.6	−3.2	−1.4	22.4	20.8	22.4	21.1	20.8
300	10	AM	6.976	−0.1	0.0	0.3	0.1	0.1	9.3	8.2	8.3	9.2	8.2
		GM	3.760	−1.5	0.1	0.3	0.0	0.1	6.5	6.4	6.4	6.4	6.4
		GSD	3.040	2.1	0.1	0.2	0.1	0.2	5.0	5.1	5.4	6.0	5.1
		X95	23.410	−0.6	0.4	0.8	0.2	0.5	13.7	10.2	10.5	11.8	10.2
	40	AM	6.976	−0.4	0.0	0.5	0.1	0.1	9.3	8.3	8.5	9.2	8.4
		GM	3.760	4.3	0.3	0.5	0.1	0.2	7.3	7.2	7.6	7.4	7.2
		GSD	3.040	−10.7	0.0	0.3	0.0	0.1	11.2	6.8	7.5	7.1	6.7
		X95	23.410	−0.6	0.3	0.9	0.0	0.4	13.7	10.9	11.4	11.9	10.9
	70	AM	6.976	6.1	0.2	1.0	0.2	0.2	10.9	8.4	8.6	9.1	8.4
		GM	3.760	36.5	0.8	1.2	0.5	0.6	37.0	11.2	13.4	11.5	11.1
		GSD	3.040	−32.9	0.1	0.7	0.2	0.3	33.1	10.2	11.9	10.2	10.0
		X95	23.410	−0.6	0.1	1.0	−0.2	0.4	13.7	11.6	12.0	12.1	11.5
	90	AM	6.976	44.1	1.1	3.4	0.7	0.5	44.9	11.8	14.7	12.5	11.8
		GM	3.760	134.9	3.6	6.2	2.4	2.0	135.0	26.7	34.6	27.2	25.0
		GSD	3.040	−51.3	1.1	2.5	1.6	1.6	51.4	19.3	24.0	19.4	18.1
		X95	23.410	−0.6	−0.4	1.2	−1.0	−0.4	13.7	11.9	12.3	12.3	11.9

rMSE: root mean square of error, AM: arithmetic mean, GM: geometric mean, GSD: geometric standard deviation, X95: 95th percentile
LOD: limit of detection, MLE: maximum likelihood estimation, ROS: regression on order statistics