Table 1: Mean squared errors and coverage probabilities for different data and models $(T=3,C=5,\sigma_{LS}=0,\sigma_e^2=0.1)$

			N=50			N=200			N=500	
	•	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	٢
Semi-N	MSE	0.014	0.014	0.013	0.004	0.004	0.004	0.002	0.002	
data	CP	0.970	0.803	0.816	0.955	0.792	0.804	0.944	0.794	
N-Semi	MSE	0.000	9000	0.006	0.065	0.001	0.001	0.006	0.000	0.000
data	CP	0.937	0.958	0.940	0.900	0.933	0.915	0.897	0.927	
Semi-Semi	MSE	0.000	0.007	0.007	0.003	0.002	0.002	0.001	0.001	0.001
data	C	0.965	0.970	0.970	0.968	0.975	0.965	0.953	0.945	0.943

Note. MSE: mean square error; CP: coverage probability. In the table, on the rows are the different types of generated data with sample size = 50, 200, and 500. On the columns are the four types of distributional models used to analyze the generated data. For each type of the generated data, four distributional models are fitted to them. The average MSE and CP for the six model parameters $(\beta_L, \beta_S, \sigma_L^2, \sigma_S^2, \sigma_L^2, \sigma_S^2)$ are obtained, as displayed in the table.

Table 2: Mean squared errors and coverage probabilities for different data and models $(T=3,C=5,\sigma_{LS}=0,\sigma_e^2=0.5)$

the state of the s	1	-	I carro	or a constant	101	100	arie modern) 5		3, CT 2, Ce	;
			N=50			N=200			N=500		
		Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	
Semi-N	MSE	0.031	0.055	0.033	9000	0.007	0.007	0.003	0.005		
data	C	0.955	0.849	928.0	0.946	0.869	0.879	0.942	0.842	0.879	
N-Semi	MSE	0.016	0.013	0.013	0.004	0.003	0.003	090.0	0.00		
data	CP	0.893	0.913	0.872	0.882	0.918	0.872	0.827	0.860	0.802	
Semi-Semi	MSE	0.012	0.012	0.012	0.004	0.004	0.004	0.001	0.001	0.001	
data	CP	0.983	0.975	0.983	0.948	0.943	0.948	0.955	0.950	0.955	

Table 3: Mean squared errors and coverage probabilities for different data and models $(T=3, C=5, \sigma_{LS}=0.3, \sigma_e^2=0.1)$

	Semi-Semi)02	0.614	001	0.692	0.001	920
0	Semi		0.0	0.0	0.0	0.0	0.0
N=50	N-Semi	0.002	0.604	0.001	0.753	0.001	0.943
	Semi-N	0.002	0.881	0.002	0.712	0.001	0.943
	Semi-Semi	0.004	0.637	0.001	0.777	0.003	0.948
N=200	N-Semi	0.005	0.636	0.001	0.832	0.003	0.950
	Semi-N	0.004	0.894	0.002	0.782	0.003	0.948
	Semi-Semi	0.018	0.684	900.0	0.907	0.011	0.965
N=50	N-Semi	0.018	0.672	0.000	0.923	0.011	0.970
	Semi-N	0.019	0.915	0.007	0.905	0.013	0.958
		MSE	CB	MSE	CP	MSE	C
		Semi-N	data	N-Semi	data	Semi-Semi	data

Table 4: Mean squared errors and coverage probabilities for different data and models $(T=3, C=5, \sigma_{LS}=0.3, \sigma_e^2=0.5)$

ui syua	וכם כווי	ore T. intenti squared errors and e	verage pr	COGGIIICO	or arrest	on data a	. T) GITTOTOTIL ARM MILA ITTOMOTIS (T	\sim - 0, \sim	$-$ 5, \circ $-$ 5, \circ $_{LS}$	$s=0.0, v_e$)
			N = 50			N=200			N=500		
		Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Se	
	MSE	0.030	090.0	0.030	0.08	0.016	0.00	0.004	0.010	0.004	
	CP	0.859	0.70	0.719	0.804	0.636	0.655	0.779	0.597	0.626	
	MSE	0.040	0.014	0.014	0.028	0.003	0.003	0.010	0.007	0.002	
	CP	0.897	0.928	0.888	0.840	0.893	0.828	0.775	0.818	0.735	
	MSE	0.023	0.022	0.021	0.004	0.004	0.004	0.001	0.001	0.001	
	G	0.965	0.968	0.970	0.953	0.955	0.950	0.970	0.968	0.963	

Table 5: Mean squared errors and coverage probabilities for different data and models $(T=5, C=5, \sigma_{LS}=0, \sigma_e^2=0.1)$

there is the are all the are of the continue to the area are are the area are the a	1	-	I can a c	To Carrier	101	100	arie modern) ;		3, 0 ED 3, 0 e	
			N=50			N=200			N=500		
		Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	
Semi-N	MSE	0.016	0.015	0.015	0.004	0.004	0.004	0.002	0.002	0.002	
data	C	0.957	0.672	0.674	0.953	0.677	989.0	0.934	0.642	0.642	
N-Semi	MSE	0.00	0.007	0.007	0.003	0.001	0.001	0.001	0.001	0.001	
data	CP	0.892	0.940	0.885	0.882	0.943	0.893	0.903	0.948	0.907	
Semi-Semi	MSE	0.013	0.008	0.008	0.003	0.002	0.002	0.001	0.001	0.001	
data	CP	0.965	0.973	0.970	0.968	0.975	0.973	0.943	0.960	0.955	

Table 6: Mean squared errors and coverage probabilities for different data and models $(T=5, C=5, \sigma_{LS}=0, \sigma_e^2=0.5)$

	1								
N=50	N=50				N=200			N = 500	
_	1	Š	emi-Semi	Semi-N	N-Semi	Semi-Semi	ш	N-Semi	Semi-Semi
MSE 0.021 0.021	0.021		0.020	9000	9000	9000	0.00	0.002	
CP 0.953 0.845	0.845		0.841	0.939	0.822	0.819		0.833	
MSE 0.018 0.008	0.008		0.008	0.003	0.007	0.002	0.002	0.001	0.001
0.870 0.948		•	0.872	898.0	0.938	0.865	0.872	0.937	0.870
MSE 0.015 0.011	0.011		0.011	0.004	0.003	0.003	0.001	0.001	0.001
0.620	0.968		968	0.948	096.0	0.953	0.953	0.960	0.958

Table 7: Mean squared errors and coverage probabilities for different data and models $(T=5, C=5, \sigma_{LS}=0.3, \sigma_e^2=0.1)$

•			,							
			N=50			N = 200	_		N=500	_
		Semi-N	N-Semi	-		N-Semi		Semi-N	N-Semi	Semi-Semi
Semi-N	MSE	0.017	0.016	1	1	0.012		0.002	0.002	0.002
data	CP	0.934	0.598			0.608		0.937	0.587	0.587
N-Semi	MSE	0.006	0.005	0.005	0.002	0.001	0.001	0.001	0.001	0.001 0.001
data	CP	0.877	0.938	0.877		0.913		0.752	0.852	0.737
Semi-Semi	MSE	0.010	0.009	0.008		0.002		0.001	0.001	0.001
data	σ٥	0.058	0.060	0 058		0.050		0.055	0.058	0 055

Table 8: Mean squared errors and coverage probabilities for different data and models $(T=5, C=5, \sigma_{LS}=0.3, \sigma_e^2=0.5)$

core of them address are all the man and a supplied that the supplied the supplied that the supplied the supplied that t			d carre	- Common	101	מינו ממימ מ)	0,00	0.00)
			N=50			N=200			N=500		
		Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Š	
Semi-N	MSE	0.024	0.024	0.022	0.005	900.0	0.005		0.035		
data	C	0.907	969.0	0.704	0.882	0.677	0.687	0.884	0.647		
N-Semi	MSE	0.013	0.008	0.008	0.005	0.002	0.002	0.007	0.001	0.001	
data	C	0.888	0.962	0.887	0.812	0.935	0.807	0.757	0.865	0.753	
Semi-Semi	MSE	0.010	0.009	0.00	0.005	0.003	0.002	0.001	0.001	0.001	
data	CP	0.975	0.975	0.973	0.965	0.955	0.958	096.0	0.983	0.975	

Table 9: Mean squared errors and coverage probabilities for different data and models ($T=3, C=20, \sigma_{LS}=0, \sigma_e^2=0.1$)

				OCHVI			007=N			00C=N		
			Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	
	Semi-N	MSE	0.017	0.016	0.016	0.004	0.004	0.004	0.001	0.002	0.001	
	data	C	0.962	0.784	0.792	0.951	0.784	0.793	0.951	0.784	0.791	
	N-Semi	MSE	0.009	0.007	0.007	0.010	0.002	0.002	0.020	0.001	0.001	
	data	CP	0.925	0.943	0.932	0.897	0.922	0.900	0.872	0.935	0.910	
	Semi-Semi	MSE	0.010	0.009	0.00	0.003	0.002	0.002	0.001	0.001	0.001	
	data	C	0.940	0.948	0.945	0.955	0.955	0.958	0.948	0.950	0.950	
CD.	CE. moon carrows summer (D. sources and hability) In the table on the earth and different trings of accounted date with		CD. Correct	dord oron	hility In t	0140+04	440	L 04+ 040 01	ttowort tr	30 00 cc	to to boton	+ 1,11

Note. MSE: mean square error; CP: coverage probability. In the table, on the rows are the different types of generated data with sample size = 50, 200, and 500. On the columns are the four types of distributional models used to analyze the generated data. For each type of the generated data, four distributional models are fitted to them. The average MSE and CP for the six model parameters $(\beta_L, \beta_S, \sigma_L^2, \sigma_S^2, \sigma_L, \sigma_S^2, \sigma_S^2)$ are obtained, as displayed in the table.

Table 10: Mean squared errors and coverage probabilities for different data and models $(T=3,C=20,\sigma_{LS}=0,\sigma_e=0.5)$

, C1		Semi-Semi	0.003	0.876	0.001	0.832	0.001	0.945
	N=500	N-Semi	0.004	0.843	0.001	0.888	0.001	0 948
		Semi-N	0.003	0.942	0.007	0.855	0.002	0.943
		7			0.004			0.955
	N = 200	N-Semi	0.00	0.874	0.004	0.913	0.003	0.953
					0.028			0.048
		Semi-Semi	0.036	0.877	0.011	0.913	0.012	0.983
0	N=50	N-Semi	0.045	0.863	0.011	0.947	0.014	0860
		Semi-N	0.034	0.957	0.024	0.923	0.014	0 978
			MSE	CP	MSE	CP	MSE	J.
-			Semi-N	data	N-Semi	data	Semi-Semi	data

Table 11: Mean squared errors and coverage probabilities for different data and models ($T=3, C=20, \sigma_{LS}=0.3, \sigma_e^2=0.1$)

1					0.001			0.061
	N=500	N-Semi	0.002	0.617	0.001	0.780	0.001	0.958
		N-iməS	0.002	0.894	0.005	0.747	0.001	0.973
		Semi-Semi	0.004	0.659	0.001	0.777	0.002	0.963
	N=200	N-Semi	0.004	0.662	0.001	0.835	0.002	0.965
					0.012			0960
					0.007			086
)	N = 50	N-Semi	0.015	0.670	0.007	0.913	0.008	0.80
		Semi-N	0.016	0.910	0.019	0.895	0.009	0 985
		•	MSE	C	MSE	C	MSE	<u>ل</u>
•			Semi-N	data	N-Semi	data	Semi-Semi	data

Table 12: Mean squared errors and coverage probabilities for different data and models $(T=3, C=20, \sigma_{LS}=0.3, \sigma_e^2=0.5)$ 0.005 0.617 $0.002 \\ 0.755$ $0.002 \\ 0.833$ N-Semi 0.010 0.614 Semi-N 0.004 0.772 0.009 Semi-Semi 0.008 0.671 $0.003 \\ 0.833$ N=200 N-Semi 0.014 0.649 $\begin{array}{c} 0.003 \\ 0.897 \end{array}$ Semi-N 0.007 0.819 $0.042\\0.857$ Semi-Semi 0.032 0.714 $0.013 \\ 0.873$ N-Semi 0.038 0.705 $\begin{array}{c} 0.013 \\ 0.927 \end{array}$ $0.015 \\ 0.887$ MSE CP N-Semi data Semi-N data

 $\begin{array}{c} 0.002 \\ 0.955 \end{array}$

 $0.002 \\ 0.955$

 $0.002 \\ 0.956$

 $\begin{array}{c} 0.003 \\ 0.958 \end{array}$

0.003 0.968

0.003 0.963

 $\begin{array}{c} 0.013 \\ 0.975 \end{array}$

 $0.014 \\ 0.980$

 $0.016 \\ 0.975$

MSE CP

Semi-Semi data

Table 13: Mean squared errors and coverage probabilities for different data and models $(T=5, C=20, \sigma_{LS}=0, \sigma_e^2=0.1)$

			N=50			N=200			N=500	
	-	Semi-N	N-Semi	Semi-Semi		N-Semi	- 1	Semi-N	N-Semi	7
Semi-N	MSE	0.016	0.015	0.015		0.004	1	0.001	0.001	
data	CP	0.950	0.675	0.684		0.683		0.944	0.655	
N-Semi	MSE	0.010	0.005	0.005		0.001		0.025	0.001	
data	CP	0.903	0.958	0.908		0.963		0.878	0.952	
Semi-Semi	MSE	0.009	0.007	0.007	0.003	0.002	0.002	0.001	0.001	0.001
040	Ę	070	0.00	070		0500		0700	0200	

Table 14: Mean squared errors and coverage probabilities for different data and models $(T=5, C=20, \sigma_{LS}=0, \sigma_e=0.5)$

1						000				1	
			N=50			N=200			N=500	_	
	-	Semi-N	N-Semi			N-Semi		Semi-N	N-Semi	Semi-Semi	
Semi-N	MSE	0.022	0.022	0.021		0.007			0.002	0.002	
data	C	0.957	0.836			0.840	0.852	0.945	0.835	0.838	
N-Semi	MSE	0.010	0.00	0.008	0.103	0.00			0.001	0.001 0.001	
data	CP	0.900	0.960	0.900		0.941			0.955	0.880	
Semi-Semi	MSE	0.013	0.012	0.012		0.003		0.001	0.001	0.001	
data	C	0.968	0.963	0.968		0.940			0.948	0.955	

Table 15: Mean squared errors and coverage probabilities for different data and models $(T=5, C=20, \sigma_{LS}=0.3, \sigma_e^2=0.1)$

			N=50			N=200			N=500	
		Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Semi	Semi-N	N-Semi	Semi-Sem
Semi-N	MSE	0.013	0.012	0.012	0.004	0.004	0.004	0.001	0.002	0.001
data	CP	0.952	0.613	0.609	0.936	0.604	0.607	0.938	0.614	0.611
N-Semi	MSE	0.008	0.006	900.0	0.015	0.003	0.005	0.003	0.001	0.001
data	CP	0.855	0.937	0.865	0.813	0.922	0.804	0.767	0.867	0.753
Semi-Semi	MSE	0.011	0.000	0.008	0.002	0.002	0.002	0.001	0.001	0.001
data	CP	0.968	0.960	996.0	096.0	0.958	0.968	0.968	0.958	0.963

0.003 0.649 0.001 0.878 0.003 0.775 0.006 0.671 0.002 0.832 0.009 0.656 0.002 0.925 0.006 0.881 0.003 0.831 0.020 0.695 0.009 0.870 0.023 0.690 **0.009 0.948** 0.009 0.872 MSE CP CP CP CP CP CP Semi-N data N-Semi data

 $0.001 \\ 0.755$

 $\begin{array}{c} 0.001 \\ 0.973 \end{array}$

 $0.001 \\ 0.973$

 $0.001 \\ 0.970$

 $\begin{array}{c} 0.003 \\ 0.955 \end{array}$

 $0.003 \\ 0.948$

 $0.004 \\ 0.958$

 $\begin{array}{c} 0.010 \\ 0.988 \end{array}$

 $0.011 \\ 0.985$

 $0.012 \\ 0.990$

Semi-Semi data

= 0.5)		
$_{LS}=0.3,\sigma_{e}^{2}$		Semi-Semi
$'=20, \sigma$	N=500	N-Semi
T=5, C		Semi-N
nd models (Semi-Semi
ent data aı	N=200	N-Semi
for differ		Semi-N
robabilities		Semi-Semi
overage pr	N=50	N-Semi
rors and co		Semi-N
le 16: Mean squared er		
Table		