
Supplementary material for the article “On the use of the modified power series family of distributions in a cure rate model context”

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In the sequel, we present additional tables for simulation studies 1 and 2 of the article “On the use of the modified power series family of distributions in a cure rate model context”.

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Additional Tables for simulation study 1: parameters recovery

Table A1. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) for the Bocr model, when $n = 400$. True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$ and $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$ for the high and low cure rate levels, respectively.

γ	ν	Cure rate	Parameter	Bias	SE	RMSE	CP
-2	1.0	High (APC=74%)	β_0	-0.004	0.227	0.229	0.952
			β_1	-0.011	0.228	0.229	0.949
			β_2	0.005	0.151	0.153	0.951
			γ	-0.068	0.257	0.280	0.948
			ν	0.019	0.106	0.108	0.949
	1.3	Low (APC=60%)	β_0	-0.004	0.172	0.169	0.955
			β_1	0.004	0.172	0.172	0.946
			β_2	0.006	0.106	0.106	0.951
			γ	-0.037	0.229	0.222	0.947
			ν	0.017	0.079	0.079	0.949
-4	1.0	High (APC=73%)	β_0	0.015	0.178	0.178	0.943
			β_1	-0.004	0.222	0.217	0.954
			β_2	-0.009	0.150	0.150	0.949
			γ	-0.030	0.198	0.202	0.952
			ν	0.019	0.106	0.108	0.948
	1.3	Low (APC=58%)	β_0	0.008	0.143	0.140	0.952
			β_1	-0.002	0.169	0.167	0.948
			β_2	0.008	0.106	0.106	0.955
			γ	-0.030	0.177	0.176	0.954
			ν	0.018	0.088	0.092	0.943

γ	ν	Cure rate	Parameter	Bias	SE	RMSE	CP
-4	1.0	High (APC=90%)	β_0	0.277	0.987	0.916	0.958
			β_1	-0.013	0.389	0.366	0.955
			β_2	-0.008	0.223	0.223	0.956
			γ	-0.004	1.287	1.103	0.976
			ν	0.142	0.225	0.258	0.903
	1.3	Low (APC=80%)	β_0	0.344	0.576	0.621	0.950
			β_1	-0.067	0.267	0.261	0.959
			β_2	-0.012	0.156	0.152	0.952
			γ	0.047	0.890	0.868	0.959
			ν	0.035	0.144	0.143	0.946
-4	1.0	High (APC=83%)	β_0	0.011	0.621	0.626	0.927
			β_1	0.009	0.294	0.283	0.958
			β_2	0.004	0.175	0.172	0.953
			γ	-0.032	0.884	0.898	0.947
			ν	0.028	0.217	0.233	0.923
	1.3	Low (APC=71%)	β_0	0.057	0.369	0.372	0.971
			β_1	-0.001	0.211	0.212	0.950
			β_2	-0.002	0.126	0.125	0.958
			γ	-0.028	0.613	0.596	0.948
			ν	0.068	0.137	0.141	0.930

Table A2. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) for the Hacr model, when $n = 200$. True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$ and $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$ for the high and low cure rate levels, respectively.

γ	ν	Cure rate	Parameter	Bias	SE	RMSE	CP
-2	1.0	High (APC=74%)	β_0	-0.012	0.309	0.309	0.941
			β_1	0.014	0.307	0.317	0.952
			β_2	0.024	0.183	0.180	0.953
			γ	-0.121	0.411	0.411	0.952
			ν	0.057	0.145	0.159	0.929
	1.3	Low (APC=60%)	β_0	0.022	0.214	0.199	0.965
			β_1	0.141	0.205	0.243	0.928
			β_2	0.160	0.108	0.183	0.933
			γ	0.051	0.353	0.312	0.971
			ν	-0.006	0.117	0.108	0.969
-4	1.0	High (APC=89%)	β_0	0.010	0.250	0.255	0.946
			β_1	0.000	0.297	0.302	0.950
			β_2	0.022	0.179	0.187	0.933
			γ	-0.078	0.305	0.318	0.938
			ν	0.051	0.157	0.167	0.930
	1.3	Low (APC=59%)	β_0	0.024	0.193	0.184	0.956
			β_1	0.137	0.196	0.234	0.915
			β_2	0.061	0.108	0.184	0.937
			γ	0.060	0.287	0.262	0.966
			ν	-0.017	0.138	0.124	0.976
-4	1.0	High (APC=82%)	β_0	0.497	0.835	0.942	0.939
			β_1	-0.102	0.501	0.493	0.951
			β_2	-0.032	0.278	0.284	0.941
			γ	0.114	1.241	1.123	0.964
			ν	0.093	0.284	0.346	0.911
	1.3	Low (APC=70%)	β_0	0.155	0.502	0.559	0.911
			β_1	-0.007	0.324	0.291	0.970
			β_2	0.136	0.163	0.203	0.918
			γ	0.146	1.007	0.996	0.961
			ν	0.001	0.174	0.134	0.965

Table A3. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) for the Hacr model, when $n = 400$. True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$ and $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$ for the high and low cure rate levels, respectively.

γ	ν	Cure rate	Parameter	Bias	SE	RMSE	CP
-2	1.0	High (APC=75%)	β_0	-0.001	0.214	0.214	0.954
			β_1	0.004	0.216	0.210	0.952
			β_2	0.009	0.130	0.128	0.952
			γ	-0.060	0.277	0.277	0.951
			ν	0.022	0.101	0.104	0.944
	1.3	Low (APC=60%)	β_0	0.014	0.153	0.151	0.952
			β_1	0.054	0.146	0.180	0.947
			β_2	0.064	0.076	0.085	0.946
			γ	0.031	0.254	0.225	0.959
			ν	-0.005	0.084	0.078	0.961
-4	1.0	High (APC=73%)	β_0	0.009	0.175	0.170	0.948
			β_1	-0.001	0.210	0.207	0.950
			β_2	0.019	0.128	0.129	0.951
			γ	-0.046	0.211	0.213	0.951
			ν	0.026	0.108	0.114	0.944
	1.3	Low (APC=59%)	β_0	0.015	0.137	0.135	0.955
			β_1	0.130	0.138	0.168	0.944
			β_2	0.032	0.075	0.123	0.953
			γ	0.056	0.209	0.191	0.964
			ν	-0.008	0.100	0.090	0.968
-4	1.0	High (APC=89%)	β_0	0.410	0.738	0.786	0.961
			β_1	-0.100	0.379	0.373	0.951
			β_2	-0.019	0.200	0.198	0.942
			γ	0.042	1.100	1.060	0.959
			ν	0.024	0.205	0.213	0.933
	1.3	Low (APC=77%)	β_0	0.031	0.399	0.395	0.937
			β_1	0.003	0.233	0.206	0.959
			β_2	0.051	0.107	0.129	0.941
			γ	0.049	0.868	0.875	0.952
			ν	-0.001	0.129	0.099	0.957
-4	1.0	High (APC=82%)	β_0	0.087	0.458	0.438	0.972
			β_1	-0.018	0.275	0.264	0.955
			β_2	0.003	0.155	0.156	0.953
			γ	-0.097	0.727	0.691	0.944
			ν	0.095	0.182	0.195	0.935
	1.3	Low (APC=69%)	β_0	0.092	0.259	0.249	0.952
			β_1	0.036	0.186	0.190	0.958
			β_2	0.055	0.087	0.092	0.948
			γ	0.033	0.588	0.560	0.959
			ν	-0.010	0.127	0.112	0.955

Table A4. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) for the RGPcr model, when $n = 200$. True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$ and $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$ for the high and low cure rate levels, respectively.

γ	ν	Cure rate	Parameter	Bias	SE	RMSE	CP
-2	1.0	High (APC=73%)	β_0	-0.016	0.337	0.361	0.940
			β_1	-0.018	0.325	0.324	0.954
			β_2	0.006	0.213	0.218	0.949
			γ	-0.166	0.399	0.495	0.929
			ν	0.046	0.151	0.158	0.929
	1.3	Low (APC=70%)	β_0	0.002	0.248	0.239	0.956
			β_1	-0.005	0.247	0.255	0.941
			β_2	0.030	0.150	0.151	0.952
			γ	-0.088	0.334	0.334	0.950
			ν	0.037	0.112	0.122	0.936
-4	1.0	High (APC=86%)	β_0	0.026	0.255	0.247	0.958
			β_1	-0.020	0.317	0.328	0.937
			β_2	0.007	0.211	0.216	0.948
			γ	-0.080	0.287	0.304	0.937
			ν	0.040	0.154	0.164	0.929
	1.3	Low (APC=68%)	β_0	0.018	0.204	0.203	0.950
			β_1	0.000	0.240	0.247	0.939
			β_2	0.021	0.147	0.149	0.942
			γ	-0.043	0.251	0.254	0.941
			ν	0.029	0.125	0.126	0.942
-4	1.0	High (APC=83%)	β_0	0.143	1.148	1.046	0.967
			β_1	-0.026	0.533	0.506	0.958
			β_2	-0.001	0.317	0.313	0.948
			γ	0.000	1.455	1.273	0.971
			ν	0.121	0.318	0.403	0.884
	1.3	Low (APC=81%)	β_0	0.204	0.631	0.743	0.917
			β_1	-0.078	0.352	0.346	0.953
			β_2	-0.022	0.213	0.216	0.949
			γ	0.179	0.926	1.002	0.955
			ν	0.122	0.192	0.214	0.916
-4	1.0	High (APC=77%)	β_0	0.008	0.747	0.737	0.964
			β_1	0.016	0.403	0.398	0.948
			β_2	0.010	0.247	0.249	0.947
			γ	-0.234	1.076	1.149	0.912
			ν	0.124	0.292	0.333	0.912
	1.3	Low (APC=77%)	β_0	0.097	0.441	0.447	0.956
			β_1	-0.012	0.288	0.294	0.949
			β_2	0.010	0.172	0.171	0.950
			γ	-0.115	0.722	0.727	0.945
			ν	0.113	0.190	0.212	0.920

Table A5. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) for the RGPcr model, when $n = 400$. True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$ and $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$ for the high and low cure rate levels, respectively.

γ	ν	Cure rate	Parameter	Bias	SE	RMSE	CP
-2	1.0	High (APC=74%)	β_0	-0.013	0.229	0.239	0.956
			β_1	-0.002	0.227	0.227	0.950
			β_2	0.004	0.152	0.154	0.950
			γ	-0.076	0.262	0.285	0.949
			ν	0.016	0.106	0.107	0.946
	1.3	Low (APC=70%)	β_0	0.002	0.171	0.171	0.947
			β_1	0.002	0.173	0.174	0.949
			β_2	0.015	0.106	0.105	0.952
			γ	-0.036	0.224	0.224	0.950
			ν	0.019	0.078	0.081	0.939
-4	1.0	High (APC=73%)	β_0	0.018	0.178	0.175	0.955
			β_1	-0.009	0.223	0.222	0.954
			β_2	-0.004	0.150	0.152	0.949
			γ	-0.040	0.199	0.203	0.938
			ν	0.019	0.107	0.107	0.952
	1.3	Low (APC=68%)	β_0	0.004	0.143	0.143	0.950
			β_1	0.001	0.169	0.168	0.950
			β_2	0.012	0.105	0.104	0.953
			γ	-0.014	0.174	0.175	0.946
			ν	0.010	0.086	0.085	0.952
-4	1.0	High (APC=86%)	β_0	0.032	0.985	0.887	0.959
			β_1	-0.019	0.387	0.362	0.955
			β_2	0.001	0.219	0.218	0.949
			γ	0.000	1.215	1.040	0.969
			ν	0.040	0.219	0.263	0.907
	1.3	Low (APC=83%)	β_0	0.105	0.546	0.623	0.931
			β_1	-0.046	0.257	0.253	0.952
			β_2	-0.014	0.150	0.152	0.949
			γ	0.069	0.815	0.873	0.951
			ν	0.072	0.133	0.145	0.921
-4	1.0	High (APC=81%)	β_0	-0.006	0.600	0.606	0.952
			β_1	0.014	0.286	0.288	0.949
			β_2	0.009	0.170	0.171	0.948
			γ	-0.038	0.827	0.857	0.934
			ν	0.075	0.202	0.218	0.927
	1.3	Low (APC=77%)	β_0	0.075	0.353	0.357	0.953
			β_1	-0.011	0.208	0.209	0.951
			β_2	0.005	0.123	0.123	0.950
			γ	-0.039	0.573	0.575	0.948
			ν	0.069	0.131	0.142	0.941

Additional Tables for simulation study 2: model misspecification

Table A6. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) when the data generation model is the Poer model (low cure rate case). True values are $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$.

α	ν	Parameter	Poer (True model)						Boer (Misspecified model)					
			$n = 200$			$n = 400$			$n = 200$			$n = 400$		
		Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	
-2	1.0	β_0	-0.105	1.005	1.150	0.938	-0.015	0.657	0.703	0.955	0.623	1.392	1.235	0.666
		β_1	-0.068	0.629	0.733	0.960	-0.022	0.561	0.599	0.952	0.138	0.614	0.582	0.934
		β_2	-0.053	0.699	0.806	0.942	-0.029	0.450	0.569	0.946	0.076	0.386	0.361	0.973
	-0.074	α	-0.614	0.738	0.962	-0.045	0.482	0.518	0.955	-0.394	1.806	1.527	0.921	-0.311
		ν	0.108	0.428	0.603	0.932	0.060	0.279	0.317	0.943	0.377	0.419	0.670	0.932
		β_0	-0.086	0.928	1.143	0.960	-0.054	0.872	0.886	0.957	0.599	1.085	1.050	0.723
1.3	1.0	β_1	-0.052	0.705	0.879	0.959	-0.028	0.524	0.575	0.953	0.204	0.427	0.427	0.454
		β_2	-0.051	0.708	0.792	0.956	-0.016	0.542	0.609	0.951	0.076	0.277	0.299	0.904
		α	-0.057	0.844	0.949	0.960	-0.022	0.592	0.637	0.954	-0.389	1.594	1.321	0.927
	-0.074	ν	0.089	0.313	0.379	0.924	0.070	0.221	0.267	0.943	0.274	0.313	0.427	0.937
		β_0	-0.076	0.860	0.969	0.954	-0.030	0.705	0.758	0.952	-0.075	0.989	0.808	0.856
		β_1	-0.062	0.655	0.784	0.960	-0.024	0.506	0.548	0.955	0.155	0.448	0.460	0.898
-4	1.0	β_2	-0.035	0.641	0.756	0.956	-0.023	0.553	0.608	0.953	0.040	0.278	0.254	0.955
		α	-0.063	0.597	0.706	0.955	-0.037	0.459	0.513	0.949	-0.950	1.445	1.509	0.956
		ν	0.087	0.357	0.433	0.943	0.039	0.261	0.292	0.948	0.295	0.369	0.471	0.948
	-0.074	β_0	-0.068	0.837	1.045	0.960	-0.021	0.649	0.737	0.957	0.160	0.656	0.579	0.857
		β_1	-0.057	0.780	0.817	0.961	-0.042	0.637	0.716	0.954	0.198	0.321	0.364	0.861
		β_2	-0.041	0.801	0.943	0.958	-0.035	0.444	0.481	0.951	0.078	0.206	0.225	0.895
	-0.074	α	-0.042	0.649	0.752	0.963	-0.011	0.490	0.526	0.955	-1.023	1.083	1.410	0.923
		ν	0.096	0.281	0.296	0.954	0.058	0.210	0.215	0.953	0.337	0.282	0.431	0.853
		β_0	-0.068	0.837	1.045	0.960	-0.021	0.649	0.737	0.957	0.160	0.656	0.579	0.857

Table A7. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) when the data generation model is the Locr model (high cure rate case). True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$.

α	ν	Parameter	Locr (True model)						Haer (Misspecified model)						
			$n = 200$			$n = 400$			$n = 200$			$n = 400$			
		Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	Bias	SE	RMSE	CP		
-2	1.0	β_0	-0.083	0.479	0.548	0.953	-0.046	0.296	0.353	0.950	-0.152	0.417	0.430	0.944	-0.183
		β_1	-0.074	0.803	1.043	0.961	-0.056	0.586	0.630	0.955	0.202	0.322	0.392	0.881	0.210
		β_2	-0.047	0.323	0.502	0.963	0.000	0.196	0.216	0.956	0.093	0.204	0.217	0.910	0.075
	-0.3	α	-0.107	0.398	0.511	0.941	-0.077	0.274	0.340	0.943	-1.152	0.660	1.316	0.583	-1.069
		ν	0.043	0.183	0.199	0.961	0.026	0.137	0.128	0.957	0.248	0.192	0.301	0.826	0.195
		β_0	-0.074	0.419	0.490	0.953	-0.043	0.254	0.300	0.952	-0.130	0.291	0.305	0.882	-0.138
-4	1.0	β_1	-0.082	0.434	0.514	0.954	-0.037	0.361	0.431	0.952	0.371	0.219	0.441	0.568	0.389
		β_2	-0.055	0.290	0.321	0.958	-0.001	0.174	0.213	0.952	0.153	0.132	0.193	0.705	0.147
		α	-0.041	0.311	0.415	0.932	-0.029	0.208	0.286	0.945	-1.826	0.692	1.911	0.141	-1.783
	-0.3	ν	0.047	0.161	0.170	0.958	-0.035	0.103	0.119	0.953	0.460	0.193	0.487	0.270	0.426
		β_0	0.042	0.278	0.308	0.935	0.021	0.188	0.185	0.947	-0.039	0.264	0.283	0.961	-0.035
		β_1	-0.020	0.339	0.353	0.957	0.016	0.246	0.238	0.952	0.146	0.304	0.354	0.916	0.137
-1.3	1.0	β_2	0.013	0.255	0.254	0.962	0.011	0.185	0.168	0.956	0.079	0.195	0.206	0.947	0.078
		α	-0.052	0.318	0.356	0.943	-0.034	0.213	0.256	0.949	-1.011	0.405	1.098	0.237	-0.910
		ν	0.081	0.180	0.195	0.946	0.041	0.125	0.125	0.949	0.309	0.212	0.379	0.664	0.281
	-0.3	β_0	0.019	0.231	0.236	0.957	0.002	0.164	0.169	0.954	-0.104	0.220	0.249	0.881	-0.108
		β_1	0.000	0.296	0.315	0.943	0.000	0.228	0.219	0.948	0.376	0.210	0.424	0.565	0.358
		β_2	0.016	0.223	0.220	0.961	0.009	0.158	0.155	0.958	0.159	0.129	0.191	0.737	0.152
	-0.3	α	-0.043	0.251	0.297	0.945	-0.010	0.190	0.241	0.949	-1.794	0.480	1.857	0.020	-1.715
		ν	0.052	0.147	0.149	0.939	0.046	0.107	0.116	0.943	0.579	0.223	0.613	0.196	0.548
		β_0	0.015	0.231	0.236	0.957	0.002	0.164	0.169	0.954	-0.104	0.220	0.249	0.881	-0.108

Table A8. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) when the data generation model is the Locr model (low cure rate case). True values are $(\beta_0, \beta_1, \beta_2) = (0.6190, -0.6190, -0.2007)$.

α	ν	Parameter	Locr (True model)						Haer (Misspecified model)					
			$n = 200$			$n = 400$			$n = 200$			$n = 400$		
		Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	
-2	1.0	β_0	-0.067	0.855	0.947	0.930	-0.044	0.617	0.729	0.944	0.705	1.259	1.257	0.661
		β_1	-0.087	0.518	0.659	0.937	-0.042	0.418	0.575	0.951	0.257	0.602	0.609	0.902
		β_2	-0.077	0.676	0.755	0.944	-0.042	0.501	0.540	0.946	0.090	0.384	0.389	0.936
	1.3	α	-0.024	0.552	0.656	0.961	-0.023	0.307	0.327	0.955	-0.650	1.874	1.697	0.932
		ν	0.066	0.476	0.568	0.947	0.027	0.318	0.369	0.949	0.443	0.462	0.680	0.931
		β_0	-0.062	0.815	0.850	0.953	-0.028	0.530	0.583	0.950	0.883	0.986	1.176	0.674
-4	1.0	β_1	-0.062	0.559	0.672	0.945	-0.045	0.530	0.577	0.948	0.305	0.453	0.516	0.812
		β_2	-0.067	0.607	0.660	0.951	-0.017	0.767	0.805	0.950	0.096	0.298	0.317	0.934
		α	-0.044	0.365	0.492	0.957	-0.029	0.654	0.708	0.952	-0.631	1.686	1.489	0.941
	1.3	ν	0.059	0.360	0.461	0.943	0.043	0.253	0.292	0.948	0.388	0.366	0.548	0.903
		β_0	-0.050	0.476	0.564	0.935	-0.034	0.235	0.273	0.948	0.105	0.832	0.703	0.851
		β_1	-0.083	0.481	0.551	0.962	-0.054	0.358	0.400	0.953	0.244	0.438	0.479	0.856
-2	0.5	β_2	-0.067	0.578	0.625	0.964	-0.028	0.357	0.400	0.958	0.092	0.260	0.266	0.922
		α	-0.038	0.546	0.626	0.930	-0.025	0.392	0.398	0.947	-1.334	1.461	1.817	0.919
		ν	0.070	0.386	0.464	0.939	0.042	0.279	0.304	0.952	0.411	0.392	0.576	0.885
	1.3	β_0	-0.059	0.911	1.011	0.957	-0.049	0.556	0.564	0.951	0.248	0.609	0.549	0.884
		β_1	-0.071	0.381	0.422	0.955	-0.029	0.242	0.258	0.952	0.330	0.309	0.451	0.716
		β_2	-0.048	0.585	0.646	0.936	-0.051	0.424	0.465	0.942	0.123	0.200	0.236	0.844
-4	0.5	α	-0.043	0.290	0.374	0.944	-0.042	0.133	0.138	0.948	-1.699	1.399	2.029	0.849
		ν	0.099	0.294	0.351	0.941	0.056	0.219	0.245	0.942	0.494	0.345	0.582	0.747

Table A9. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) when the data generation model is the Bincr($q = 1$) model (high cure rate case). True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$.

α	ν	Parameter	Bincr($q = 1$) (True model)						RGPCr($q = 2$) (Misspecified model)									
			$n = 200$			$n = 400$			$n = 200$			$n = 400$						
		Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	Bias	SE	RMSE	CP					
-2	1.0	β_0	-0.024	0.430	0.411	0.961	0.019	0.245	0.230	0.959	-0.049	0.299	0.322	0.940	-0.052	0.225	0.225	0.952
		β_1	-0.044	0.368	0.379	0.943	-0.014	0.260	0.270	0.945	0.227	0.288	0.391	0.847	0.214	0.218	0.301	0.809
		β_2	0.008	0.263	0.259	0.957	0.002	0.183	0.190	0.954	0.109	0.159	0.184	0.864	0.112	0.125	0.158	0.862
	1.3	α	-0.053	0.412	0.378	0.960	0.049	0.224	0.236	0.956	-0.961	0.505	1.091	0.500	-0.843	0.348	0.923	0.253
		ν	0.022	0.161	0.179	0.955	0.017	0.113	0.128	0.951	0.315	0.200	0.375	0.680	0.257	0.126	0.283	0.506
		β_0	0.025	0.294	0.293	0.959	0.013	0.195	0.201	0.947	0.087	0.156	0.194	0.906	0.041	0.109	0.131	0.884
-4	1.0	β_1	-0.021	0.312	0.303	0.956	-0.019	0.218	0.234	0.950	0.461	0.161	0.490	0.293	0.474	0.109	0.485	0.073
		β_2	-0.015	0.230	0.217	0.952	-0.004	0.164	0.148	0.951	0.175	0.086	0.184	0.330	0.186	0.057	0.187	0.087
		α	0.094	0.266	0.281	0.959	0.061	0.183	0.225	0.954	-1.270	0.388	1.328	0.053	-1.276	0.283	1.324	0.008
	1.3	ν	0.006	0.130	0.128	0.956	-0.001	0.091	0.089	0.954	0.511	0.169	0.531	0.094	0.509	0.123	0.517	0.015
		β_0	0.057	0.260	0.283	0.958	-0.009	0.192	0.199	0.954	-0.053	0.267	0.263	0.930	-0.030	0.177	0.205	0.920
		β_1	-0.025	0.348	0.363	0.960	-0.001	0.239	0.238	0.955	0.209	0.276	0.359	0.867	0.194	0.194	0.296	0.803

Table A10. Simulated bias (Bias), average of the asymptotic standard errors (SE), root of the estimated mean squared error (RMSE) and coverage probability of the 95% asymptotic confidence intervals (CP) when the data generation model is the Bincr($q = 1$) model (low cure rate case). True values are $(\beta_0, \beta_1, \beta_2) = (1.3863, -0.7673, -0.2136)$.

α	ν	Parameter	Bincr($q = 1$) (True model)						RGPcr($q = 2$) (Misspecified model)					
			$n = 200$			$n = 400$			$n = 200$			$n = 400$		
		Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	Bias	SE	RMSE	CP	
-2	1.0	β_0	0.113	0.809	0.867	0.960	0.095	0.648	0.657	0.956	0.722	0.893	1.105	0.704
		β_1	-0.077	0.810	0.878	0.960	-0.050	0.520	0.565	0.956	0.085	0.537	0.558	0.905
		β_2	0.003	0.484	0.532	0.956	-0.005	0.308	0.325	0.954	0.067	0.324	0.303	0.921
	-0.067	α	-0.452	0.484	0.484	0.959	-0.030	0.288	0.316	0.951	-0.470	1.393	1.447	0.890
		ν	0.110	0.387	0.435	0.940	0.063	0.273	0.294	0.948	0.428	0.386	0.617	0.922
		β_0	-0.015	0.643	0.760	0.962	-0.011	0.315	0.347	0.956	0.791	0.535	0.929	0.742
1.3	1.0	β_1	-0.086	0.617	0.633	0.951	-0.047	0.408	0.473	0.950	0.184	0.355	0.408	0.858
		β_2	-0.042	0.390	0.435	0.959	0.005	0.254	0.275	0.954	0.085	0.211	0.231	0.860
		α	-0.019	0.362	0.427	0.959	-0.004	0.287	0.305	0.955	-0.438	0.146	1.044	0.924
	-4	ν	0.087	0.263	0.314	0.960	0.081	0.202	0.200	0.956	0.421	0.264	0.507	0.738
		β_0	-0.080	0.315	0.353	0.936	-0.068	0.268	0.263	0.942	0.220	0.556	0.555	0.893
		β_1	-0.063	0.581	0.635	0.961	-0.052	0.389	0.389	0.954	0.175	0.399	0.454	0.875
-4	1.0	β_2	-0.021	0.363	0.406	0.960	-0.003	0.242	0.247	0.956	0.079	0.220	0.234	0.874
		α	-0.093	0.420	0.477	0.957	-0.043	0.243	0.255	0.955	-1.113	1.060	1.547	0.840
		ν	0.063	0.335	0.371	0.955	0.045	0.247	0.247	0.950	0.442	0.339	0.569	0.811
	-4	β_0	-0.087	0.909	0.933	0.957	-0.051	0.427	0.444	0.951	0.403	0.299	0.482	0.798
		β_1	-0.086	0.457	0.484	0.959	-0.051	0.287	0.311	0.952	0.271	0.246	0.399	0.731
		β_2	-0.021	0.297	0.315	0.951	-0.017	0.192	0.204	0.951	0.146	0.147	0.192	0.705
1.3	-4	α	-0.063	0.548	0.569	0.959	0.013	0.313	0.343	0.951	-1.433	0.803	1.627	0.580
		ν	0.072	0.254	0.253	0.953	0.040	0.198	0.200	0.949	0.661	0.266	0.705	0.288