Supplementary material for "Impact of model misspecification in shared frailty survival models"

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List of Figures

List of Tables

Results: Plots for alternative scenarios not included in the main manuscript

In the main manuscript we presented results for all simulated scenarios with a sample size consisting of 20 clusters of 150 individuals each. In Figures 1 to 6 we present the results for the scenarios with a sample size of 750 clusters with 2 individuals each.

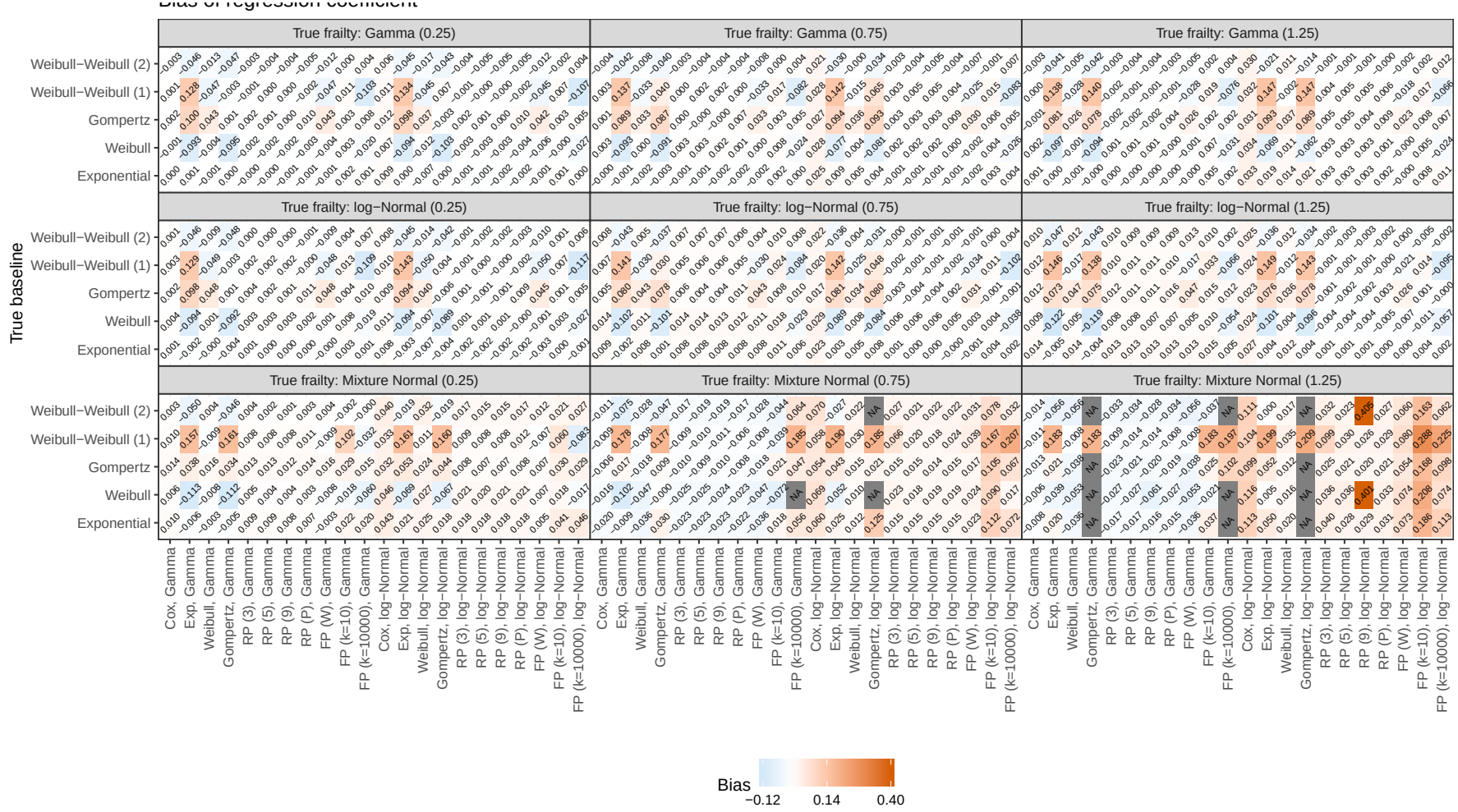

Figure 1: Bias of regression coefficient, scenario: 750 clusters of 2 individuals each. Colours represent positive and negative bias, and solid grey represents scenarios where no model converged.

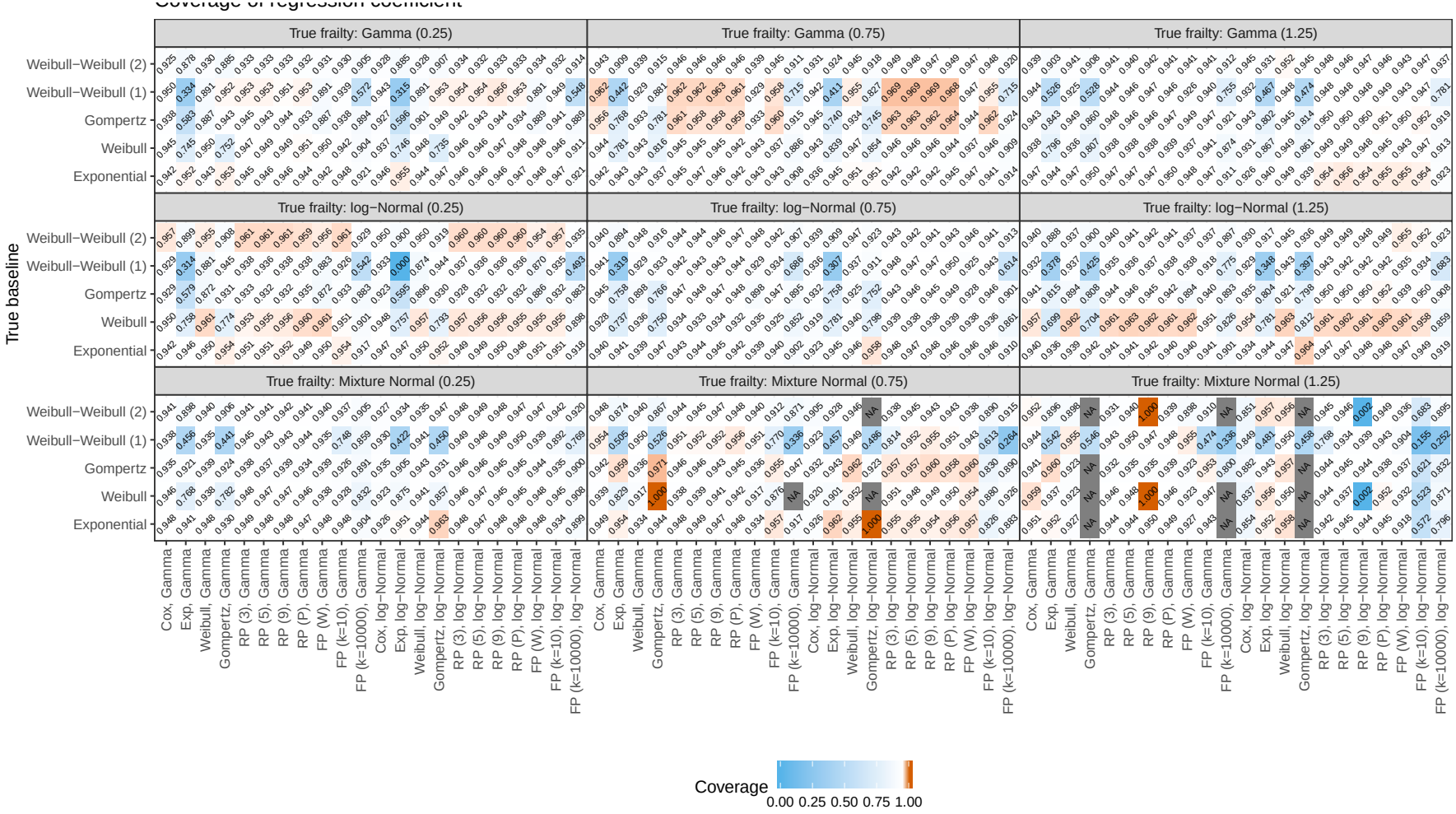

Figure 2: Coverage of regression coefficient, scenario: 750 clusters of 2 individuals each. Colours represent positive and negative bias, and solid grey represents scenarios where no model converged.

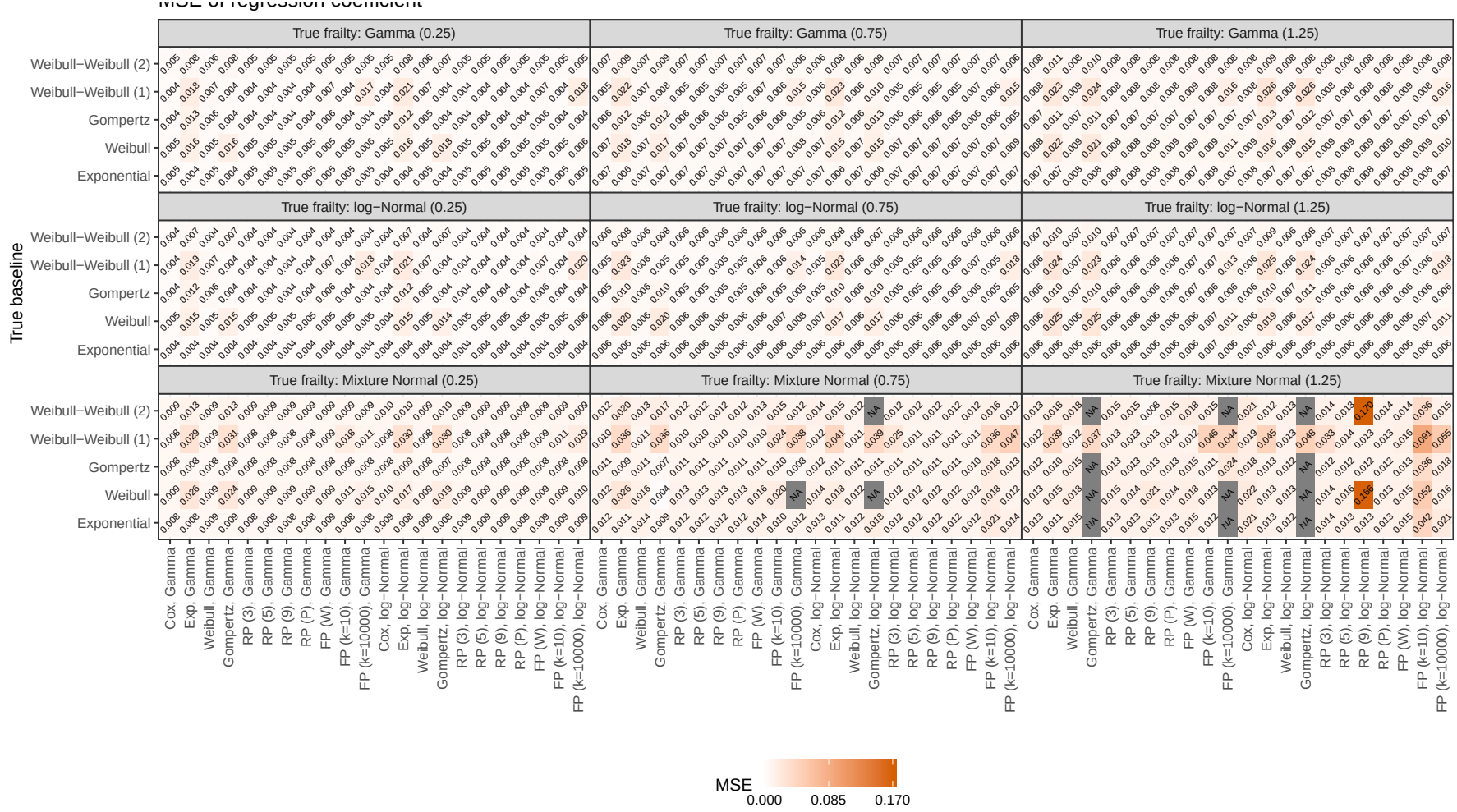

Figure 3: Mean squared error of regression coefficient, scenario: 750 clusters of 2 individuals each. Colours represent positive and negative bias, and solid grey represents scenarios where no model converged.

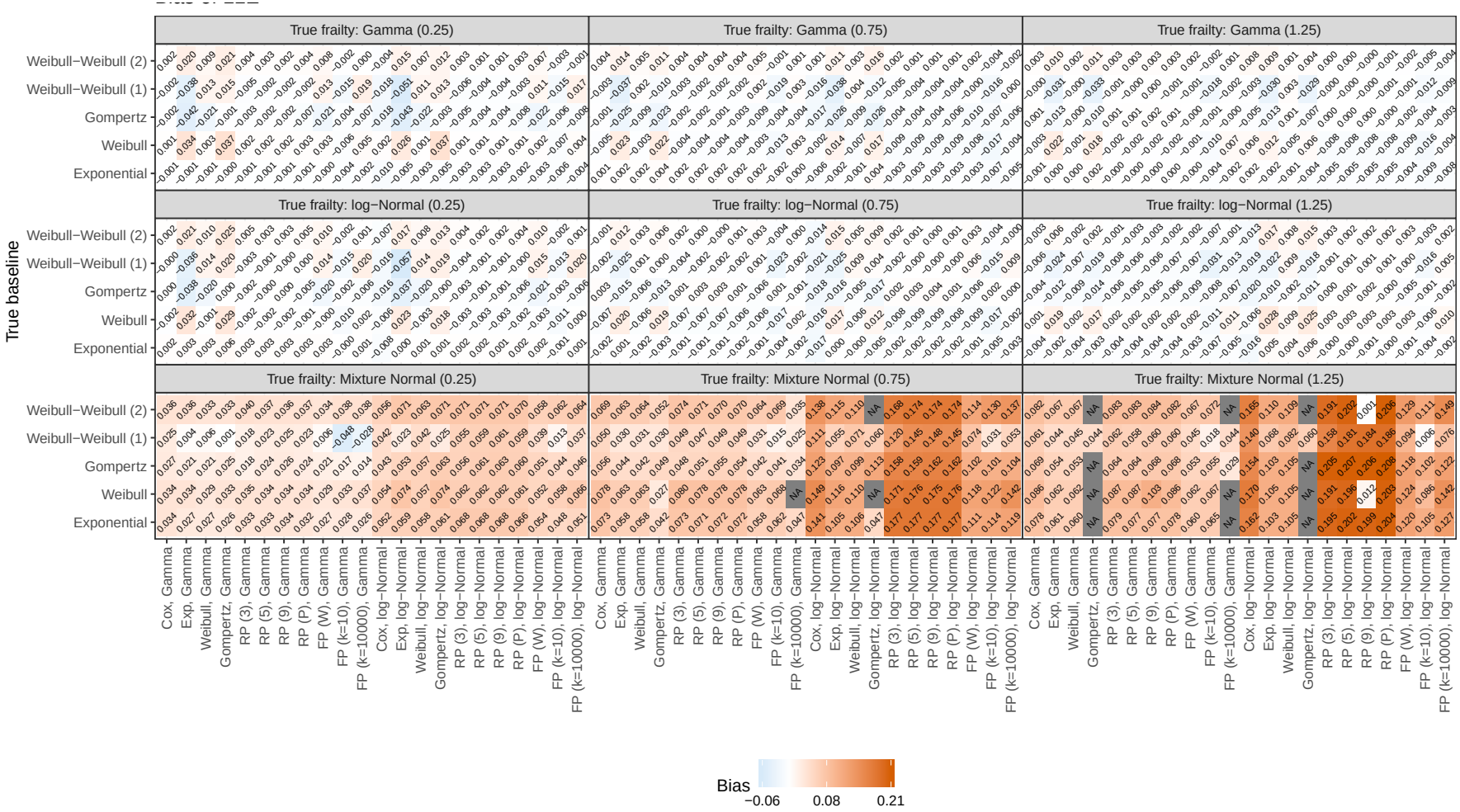

Figure 4: Bias of LLE, scenario: 750 clusters of 2 individuals each. Colours represent positive and negative bias, and solid grey represents scenarios where no model converged.

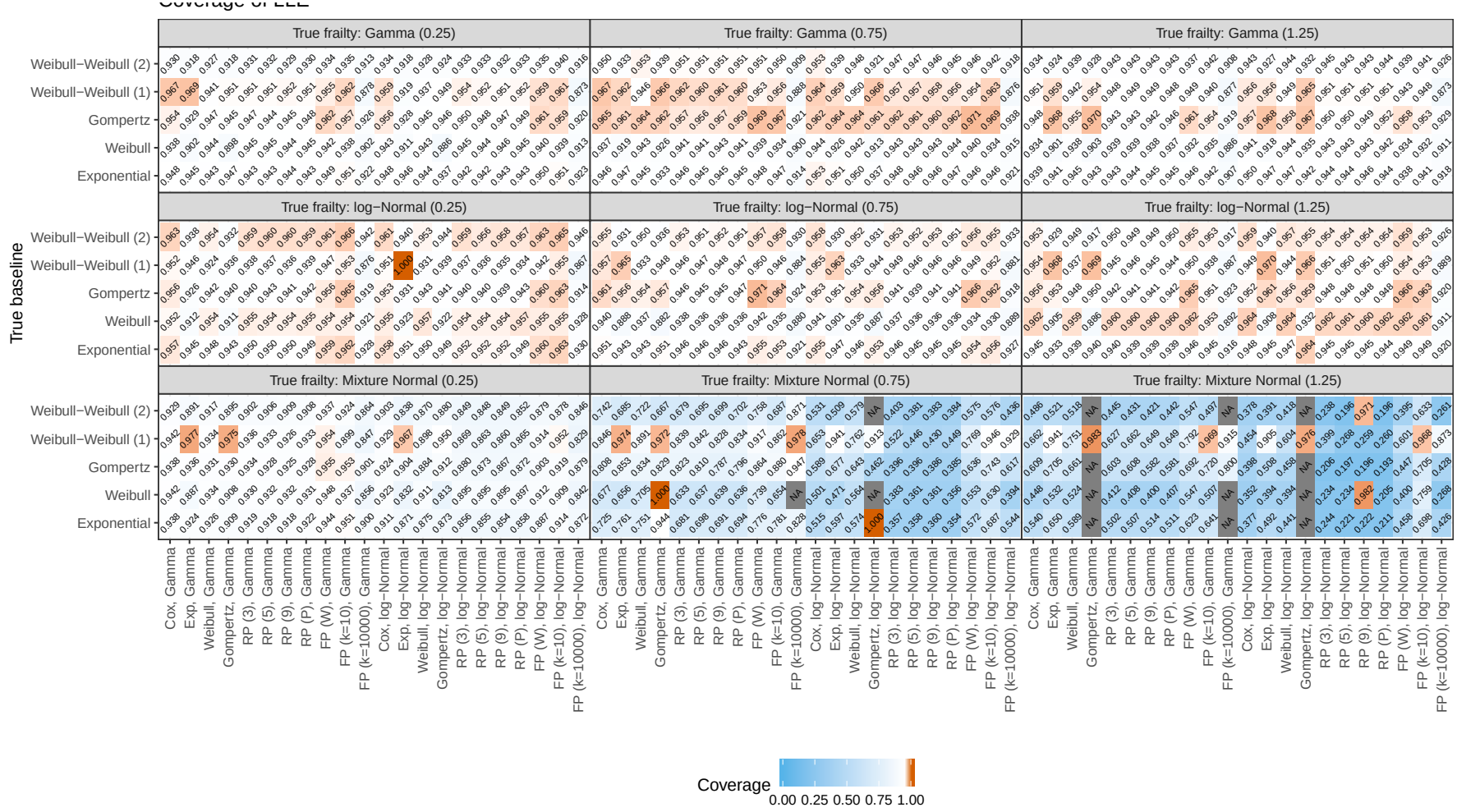

Figure 5: Coverage of LLE, scenario: 750 clusters of 2 individuals each. Colours represent positive and negative bias, and solid grey represents scenarios where no model converged.

Figure 6: Mean squared error of LLE, scenario: 750 clusters of 2 individuals each. Colours represent positive and negative bias, and solid grey represents scenarios where no model converged.

Results: Convergence rates

Convergence rates of each model by simulated scenario are depicted in Figure 7.

Predicted marginal means (computed using the following Stata code) are presented in Figure 8.

```
. cd "Z:\jointmodels\projects\Misspecification in survival models with frailty terms\"
. use "convergence.dta", clear
. glm nonconverged i.model i.ss i.fv i.fv_dist i.baseline, ///
.       family(binomial) link(logit) vce(cluster si)
. margins i.model i.ss i.fv i.fv_dist i.baseline
```

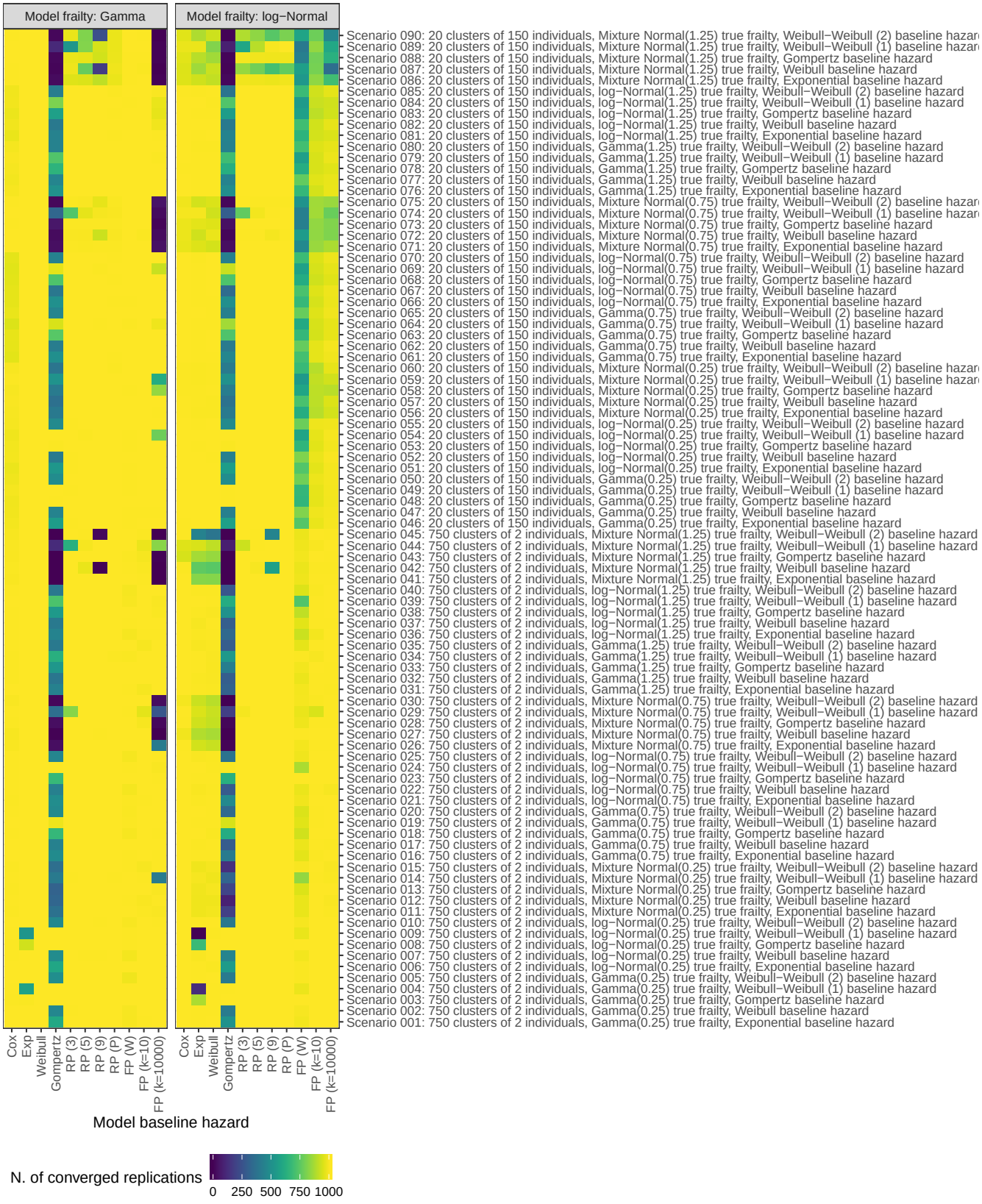

Figure 7: Convergence rates by simulated scenario for each model.

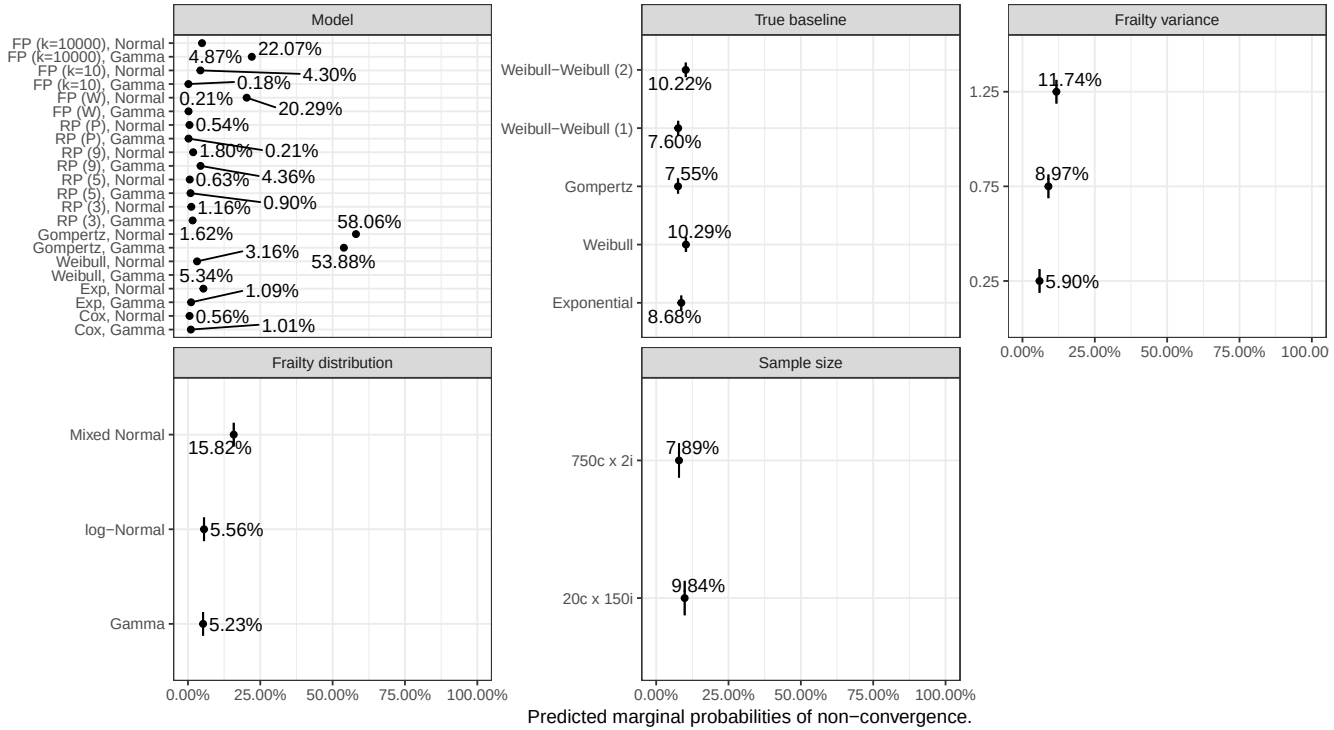

Figure 8: Predicted marginal probabilities of non-convergence, by factors included in the simulation study.

Convergence by average proportion of events is presented in Figure 9.

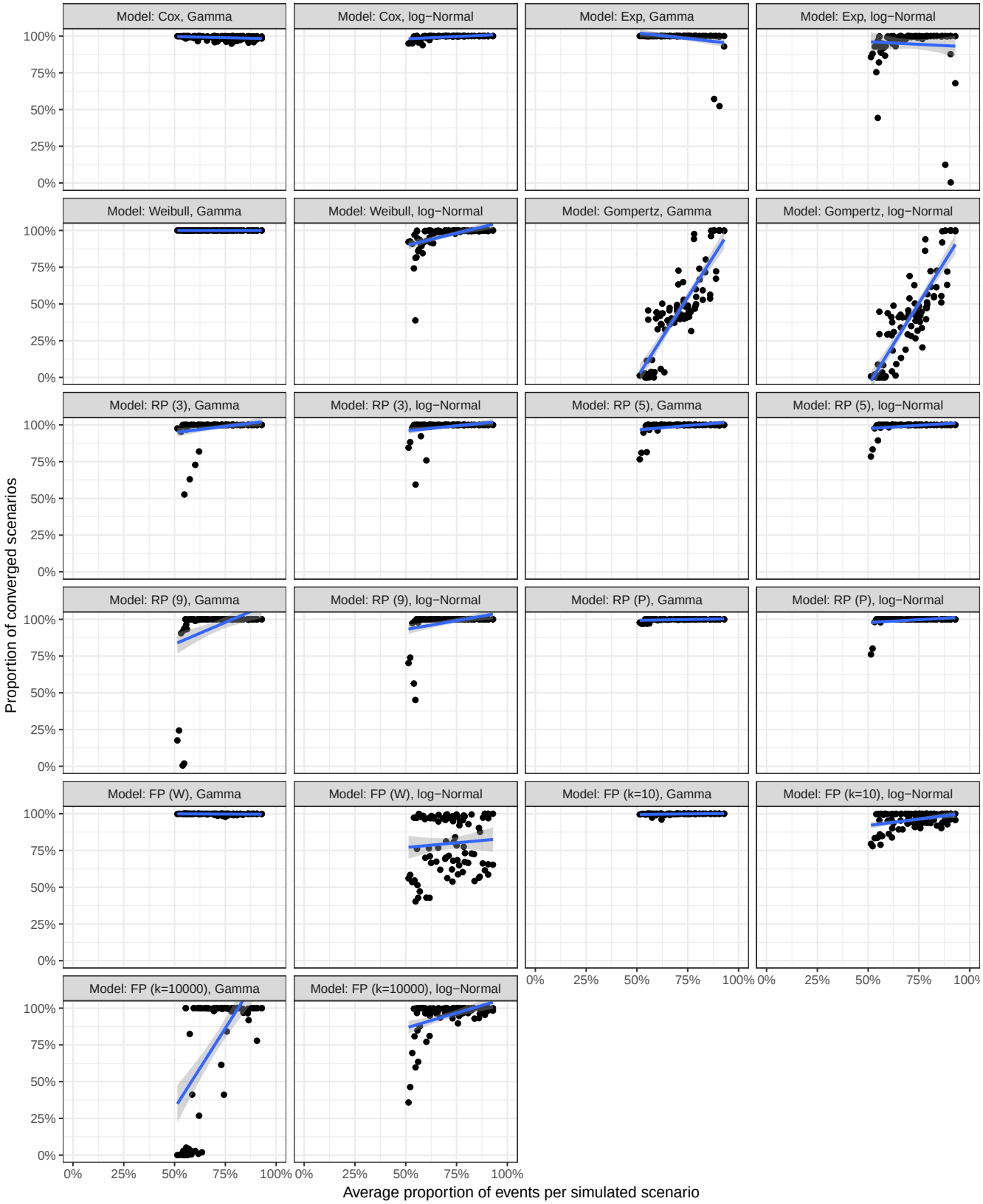

Figure 9: Proportion of converged scenarios by average proportion of events with superimposed regression line.

Results: Treatment effect

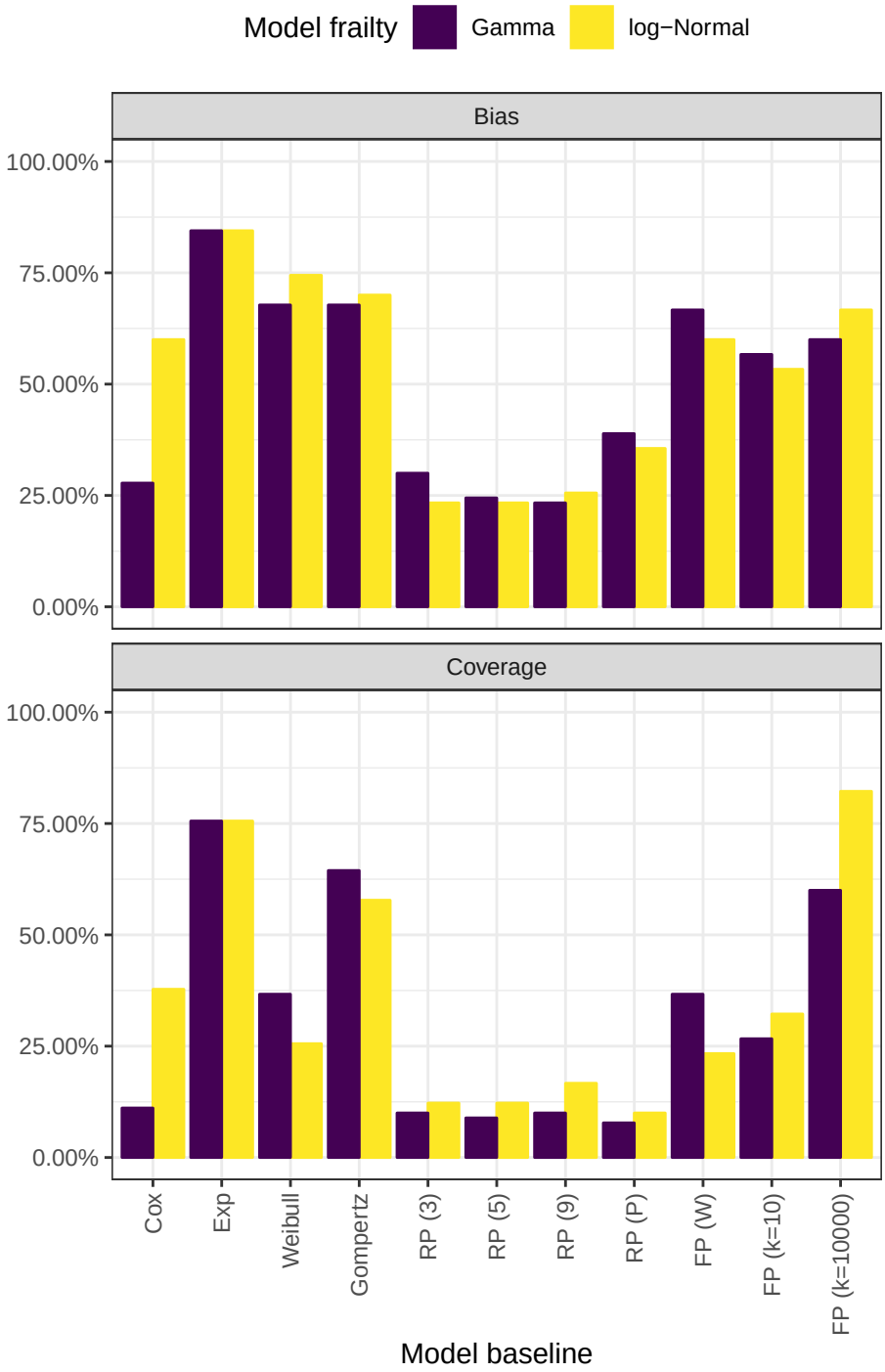

Figure 10: Percentage of simulated scenarios in which bias (top panel) or coverage (lower panel) for the estimated treatment effect was statistically different than the target value of 0 (for bias) or 95% (coverage), using Z tests based on Monte Carlo standard errors.

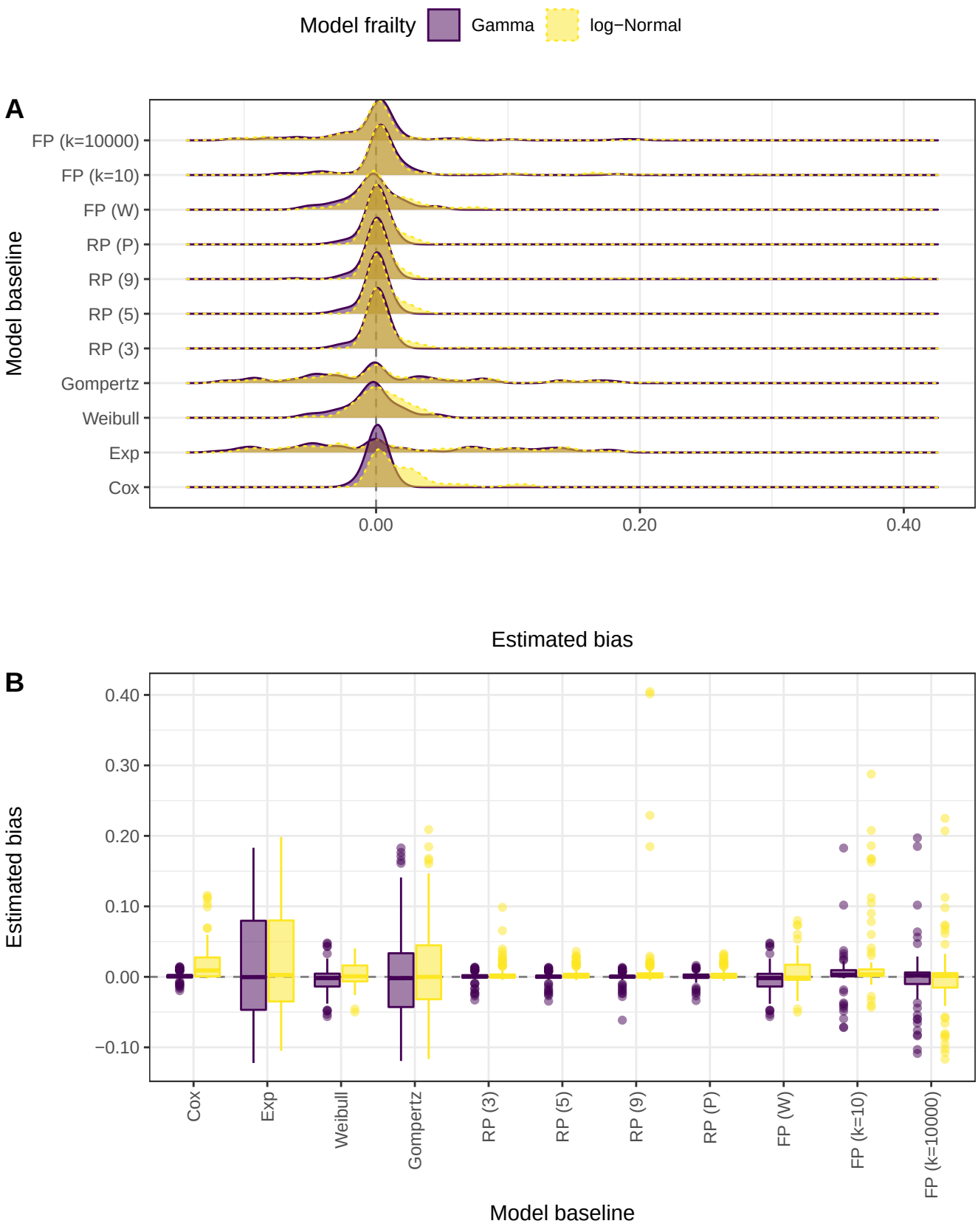

Figure 11: Bias distribution for the estimated treatment effect under each data-generating mechanisms by fitted model using ridgeline plots (panel A) or box plots (panel B).

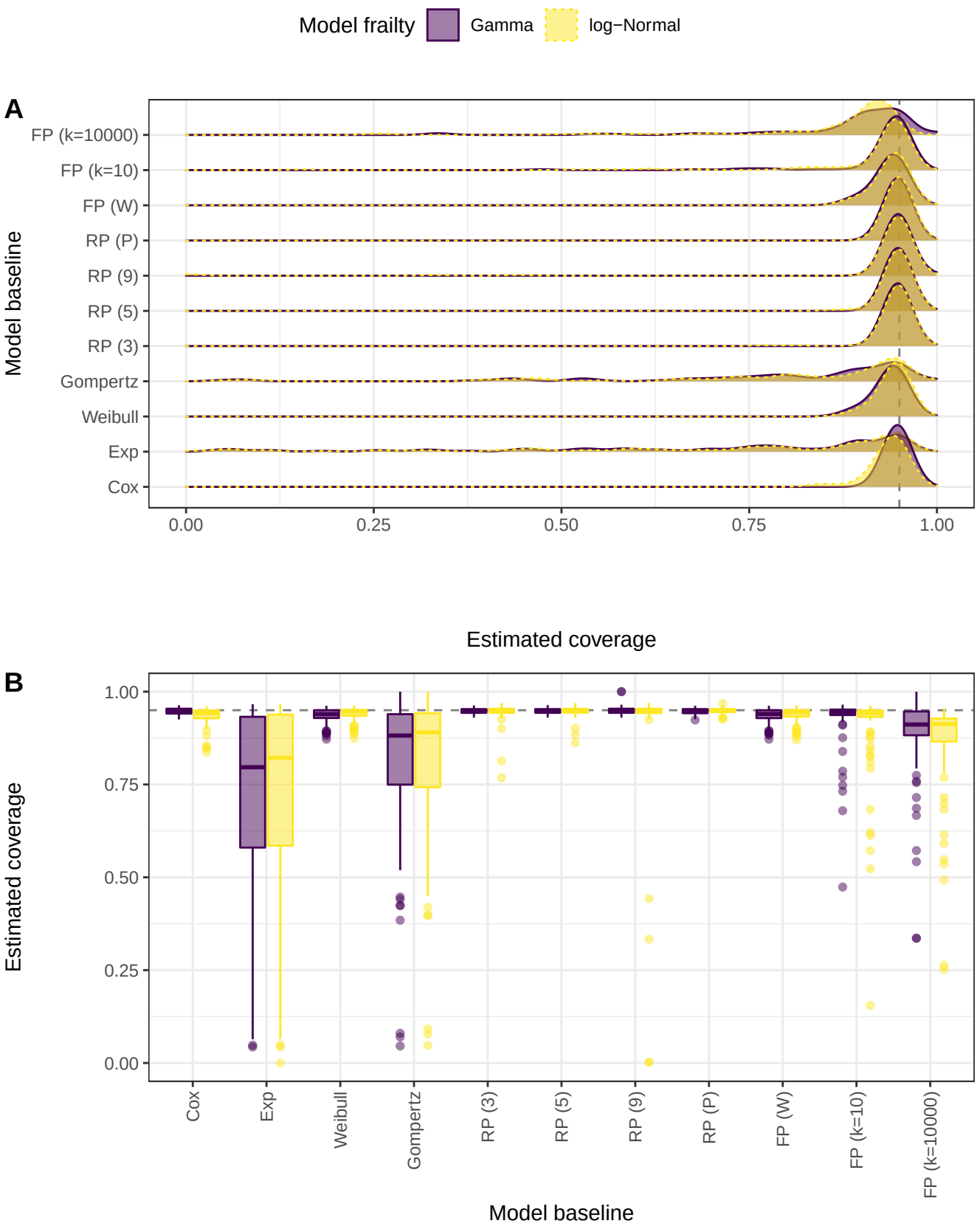

Figure 12: Coverage distribution for the estimated treatment effect under each data-generating mechanisms by fitted model using ridgeline plots (panel A) or box plots (panel B).

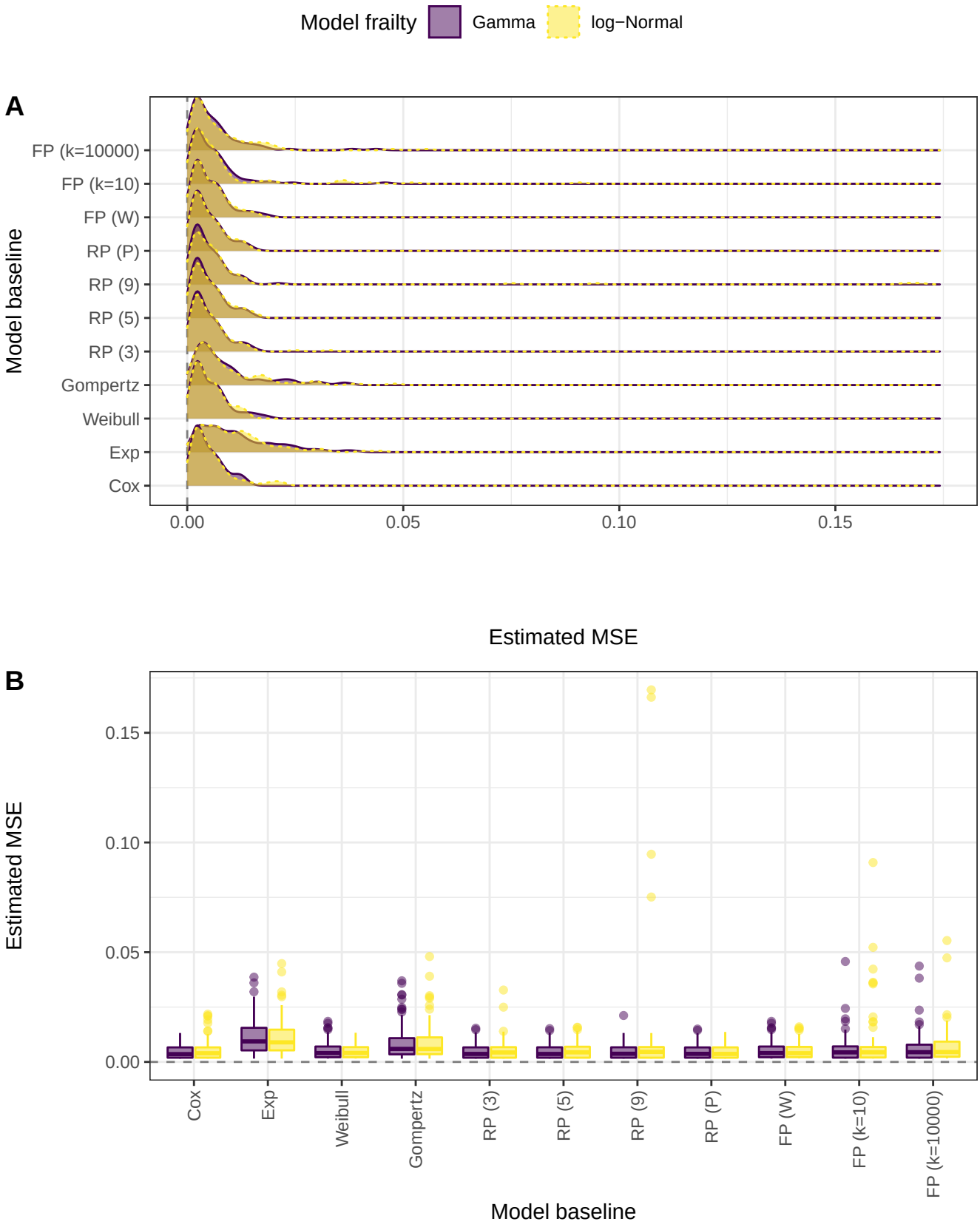

Figure 13: Mean squared error distribution for the estimated treatment effect under each data-generating mechanisms by fitted model using ridgeline plots (panel A) or box plots (panel B).

Table 1: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4996	0.0043	0.0676 (0.0015)	0.0004 (0.0021)	0.9420 (0.0074)	0.0046 (0.0002)	1000
Exp	-0.4992	0.0043	0.0656 (0.0015)	0.0008 (0.0021)	0.9520 (0.0068)	0.0043 (0.0002)	1000
Weibull	-0.5010	0.0045	0.0673 (0.0015)	-0.0010 (0.0021)	0.9430 (0.0073)	0.0045 (0.0002)	1000
Gompertz	-0.4997	0.0045	0.0650 (0.0019)	0.0003 (0.0027)	0.9533 (0.0086)	0.0042 (0.0002)	600
RP (3)	-0.5004	0.0045	0.0678 (0.0015)	-0.0004 (0.0021)	0.9450 (0.0072)	0.0046 (0.0002)	1000
RP (5)	-0.5005	0.0045	0.0678 (0.0015)	-0.0005 (0.0021)	0.9460 (0.0071)	0.0046 (0.0002)	1000
RP (9)	-0.5005	0.0045	0.0678 (0.0015)	-0.0005 (0.0021)	0.9460 (0.0071)	0.0046 (0.0002)	1000
RP (P)	-0.5007	0.0045	0.0675 (0.0015)	-0.0007 (0.0021)	0.9440 (0.0073)	0.0045 (0.0002)	1000
FP (W)	-0.5013	0.0045	0.0673 (0.0015)	-0.0013 (0.0021)	0.9424 (0.0074)	0.0045 (0.0002)	990
FP (k=10)	-0.4976	0.0045	0.0677 (0.0015)	0.0024 (0.0021)	0.9479 (0.0070)	0.0046 (0.0002)	998
FP (k=10000)	-0.4989	0.0035	0.0675 (0.0015)	0.0011 (0.0021)	0.9210 (0.0085)	0.0046 (0.0002)	1000
Model frailty: Normal							
Cox	-0.4905	0.0042	0.0661 (0.0015)	0.0095 (0.0021)	0.9460 (0.0071)	0.0045 (0.0002)	1000
Exp	-0.4998	0.0044	0.0658 (0.0015)	0.0002 (0.0021)	0.9550 (0.0066)	0.0043 (0.0002)	999
Weibull	-0.5066	0.0046	0.0682 (0.0015)	-0.0066 (0.0022)	0.9440 (0.0073)	0.0047 (0.0002)	1000
Gompertz	-0.4996	0.0046	0.0658 (0.0021)	0.0004 (0.0029)	0.9472 (0.0099)	0.0043 (0.0003)	511
RP (3)	-0.5014	0.0046	0.0681 (0.0015)	-0.0014 (0.0022)	0.9460 (0.0071)	0.0046 (0.0002)	1000
RP (5)	-0.5014	0.0046	0.0682 (0.0015)	-0.0014 (0.0022)	0.9460 (0.0071)	0.0046 (0.0002)	1000
RP (9)	-0.5015	0.0046	0.0681 (0.0015)	-0.0015 (0.0022)	0.9460 (0.0071)	0.0046 (0.0002)	1000
RP (P)	-0.5018	0.0045	0.0679 (0.0015)	-0.0018 (0.0021)	0.9470 (0.0071)	0.0046 (0.0002)	1000
FP (W)	-0.5013	0.0045	0.0673 (0.0015)	-0.0013 (0.0021)	0.9481 (0.0071)	0.0045 (0.0002)	983
FP (k=10)	-0.4989	0.0046	0.0680 (0.0015)	0.0011 (0.0022)	0.9470 (0.0071)	0.0046 (0.0002)	1000
FP (k=10000)	-0.4997	0.0037	0.0677 (0.0015)	0.0003 (0.0021)	0.9210 (0.0085)	0.0046 (0.0002)	1000

Table 2: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5010	0.0047	0.0710 (0.0016)	-0.0010 (0.0022)	0.9450 (0.0072)	0.0050 (0.0002)	1000
Exp	-0.5933	0.0056	0.0834 (0.0019)	-0.0933 (0.0026)	0.7450 (0.0138)	0.0157 (0.0006)	1000
Weibull	-0.5039	0.0049	0.0709 (0.0016)	-0.0039 (0.0022)	0.9500 (0.0069)	0.0050 (0.0002)	1000
Gompertz	-0.5954	0.0059	0.0854 (0.0028)	-0.0954 (0.0040)	0.7516 (0.0201)	0.0164 (0.0009)	463
RP (3)	-0.5017	0.0049	0.0711 (0.0016)	-0.0017 (0.0022)	0.9469 (0.0071)	0.0051 (0.0002)	999
RP (5)	-0.5017	0.0049	0.0712 (0.0016)	-0.0017 (0.0023)	0.9490 (0.0070)	0.0051 (0.0002)	1000
RP (9)	-0.5019	0.0049	0.0712 (0.0016)	-0.0019 (0.0023)	0.9490 (0.0070)	0.0051 (0.0002)	1000
RP (P)	-0.5029	0.0049	0.0711 (0.0016)	-0.0029 (0.0022)	0.9510 (0.0068)	0.0051 (0.0002)	1000
FP (W)	-0.5039	0.0049	0.0709 (0.0016)	-0.0039 (0.0023)	0.9495 (0.0070)	0.0050 (0.0002)	991
FP (k=10)	-0.4967	0.0049	0.0716 (0.0016)	0.0033 (0.0023)	0.9420 (0.0074)	0.0051 (0.0002)	1000
FP (k=10000)	-0.5203	0.0042	0.0746 (0.0017)	-0.0203 (0.0024)	0.9040 (0.0093)	0.0060 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4928	0.0046	0.0696 (0.0016)	0.0072 (0.0022)	0.9370 (0.0077)	0.0049 (0.0002)	1000
Exp	-0.5943	0.0058	0.0834 (0.0019)	-0.0943 (0.0026)	0.7465 (0.0138)	0.0158 (0.0006)	998
Weibull	-0.5115	0.0050	0.0720 (0.0016)	-0.0115 (0.0023)	0.9479 (0.0070)	0.0053 (0.0002)	999
Gompertz	-0.6033	0.0060	0.0844 (0.0029)	-0.1033 (0.0042)	0.7354 (0.0217)	0.0178 (0.0010)	412
RP (3)	-0.5030	0.0050	0.0715 (0.0016)	-0.0030 (0.0023)	0.9460 (0.0071)	0.0051 (0.0002)	1000
RP (5)	-0.5032	0.0050	0.0716 (0.0016)	-0.0032 (0.0023)	0.9460 (0.0071)	0.0051 (0.0002)	1000
RP (9)	-0.5033	0.0050	0.0716 (0.0016)	-0.0033 (0.0023)	0.9470 (0.0071)	0.0051 (0.0002)	1000
RP (P)	-0.5045	0.0050	0.0715 (0.0016)	-0.0045 (0.0023)	0.9480 (0.0070)	0.0051 (0.0002)	1000
FP (W)	-0.5058	0.0050	0.0712 (0.0016)	-0.0058 (0.0023)	0.9475 (0.0071)	0.0051 (0.0002)	991
FP (k=10)	-0.5004	0.0050	0.0723 (0.0016)	-0.0004 (0.0023)	0.9460 (0.0071)	0.0052 (0.0002)	1000
FP (k=10000)	-0.5266	0.0045	0.0758 (0.0017)	-0.0266 (0.0024)	0.9110 (0.0090)	0.0064 (0.0003)	1000

Table 3: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4985	0.0040	0.0667 (0.0015)	0.0015 (0.0021)	0.9378 (0.0076)	0.0045 (0.0002)	997
Exp	-0.4004	0.0031	0.0536 (0.0012)	0.0996 (0.0017)	0.5829 (0.0156)	0.0128 (0.0004)	995
Weibull	-0.4566	0.0037	0.0614 (0.0014)	0.0434 (0.0019)	0.8870 (0.0100)	0.0057 (0.0003)	1000
Gompertz	-0.4995	0.0042	0.0670 (0.0015)	0.0005 (0.0021)	0.9430 (0.0073)	0.0045 (0.0002)	1000
RP (3)	-0.4978	0.0042	0.0667 (0.0015)	0.0022 (0.0021)	0.9450 (0.0072)	0.0044 (0.0002)	1000
RP (5)	-0.4991	0.0042	0.0669 (0.0015)	0.0009 (0.0021)	0.9430 (0.0073)	0.0045 (0.0002)	1000
RP (9)	-0.4995	0.0042	0.0670 (0.0015)	0.0005 (0.0021)	0.9440 (0.0073)	0.0045 (0.0002)	1000
RP (P)	-0.4897	0.0041	0.0661 (0.0015)	0.0103 (0.0021)	0.9330 (0.0079)	0.0045 (0.0002)	1000
FP (W)	-0.4566	0.0037	0.0614 (0.0014)	0.0434 (0.0019)	0.8870 (0.0100)	0.0057 (0.0003)	1000
FP (k=10)	-0.4966	0.0042	0.0668 (0.0015)	0.0034 (0.0021)	0.9380 (0.0076)	0.0045 (0.0002)	1000
FP (k=10000)	-0.4921	0.0030	0.0659 (0.0015)	0.0079 (0.0021)	0.8940 (0.0097)	0.0044 (0.0002)	1000
Model frailty: Normal							
Cox	-0.4884	0.0039	0.0653 (0.0015)	0.0116 (0.0021)	0.9270 (0.0082)	0.0044 (0.0002)	1000
Exp	-0.4020	0.0032	0.0538 (0.0013)	0.0980 (0.0018)	0.5964 (0.0166)	0.0125 (0.0004)	877
Weibull	-0.4627	0.0038	0.0622 (0.0014)	0.0373 (0.0020)	0.9008 (0.0095)	0.0052 (0.0002)	998
Gompertz	-0.5026	0.0043	0.0670 (0.0015)	-0.0026 (0.0021)	0.9490 (0.0070)	0.0045 (0.0002)	1000
RP (3)	-0.4984	0.0042	0.0668 (0.0015)	0.0016 (0.0021)	0.9420 (0.0074)	0.0045 (0.0002)	1000
RP (5)	-0.4993	0.0042	0.0670 (0.0015)	0.0007 (0.0021)	0.9430 (0.0073)	0.0045 (0.0002)	1000
RP (9)	-0.4996	0.0042	0.0671 (0.0015)	0.0004 (0.0021)	0.9440 (0.0073)	0.0045 (0.0002)	1000
RP (P)	-0.4903	0.0041	0.0663 (0.0015)	0.0097 (0.0021)	0.9340 (0.0079)	0.0045 (0.0002)	1000
FP (W)	-0.4579	0.0038	0.0617 (0.0014)	0.0421 (0.0019)	0.8890 (0.0099)	0.0056 (0.0003)	1000
FP (k=10)	-0.4972	0.0042	0.0670 (0.0015)	0.0028 (0.0021)	0.9410 (0.0075)	0.0045 (0.0002)	1000
FP (k=10000)	-0.4946	0.0030	0.0663 (0.0015)	0.0054 (0.0021)	0.8890 (0.0099)	0.0044 (0.0002)	1000

Table 4: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4989	0.0041	0.0629 (0.0014)	0.0011 (0.0020)	0.9499 (0.0069)	0.0040 (0.0002)	998
Exp	-0.3722	0.0031	0.0447 (0.0013)	0.1278 (0.0019)	0.3339 (0.0197)	0.0183 (0.0005)	572
Weibull	-0.5474	0.0046	0.0694 (0.0016)	-0.0474 (0.0022)	0.8910 (0.0099)	0.0071 (0.0003)	1000
Gompertz	-0.5025	0.0043	0.0632 (0.0014)	-0.0025 (0.0020)	0.9520 (0.0068)	0.0040 (0.0002)	1000
RP (3)	-0.5005	0.0043	0.0633 (0.0014)	-0.0005 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (5)	-0.4998	0.0043	0.0631 (0.0014)	0.0002 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (9)	-0.4999	0.0043	0.0631 (0.0014)	0.0001 (0.0020)	0.9510 (0.0068)	0.0040 (0.0002)	1000
RP (P)	-0.5022	0.0043	0.0634 (0.0014)	-0.0022 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
FP (W)	-0.5474	0.0046	0.0694 (0.0016)	-0.0474 (0.0022)	0.8910 (0.0099)	0.0071 (0.0003)	1000
FP (k=10)	-0.4894	0.0043	0.0633 (0.0014)	0.0106 (0.0020)	0.9390 (0.0076)	0.0041 (0.0002)	1000
FP (k=10000)	-0.6031	0.0037	0.0800 (0.0018)	-0.1031 (0.0025)	0.5720 (0.0156)	0.0170 (0.0006)	1000
Model frailty: Normal							
Cox	-0.4888	0.0040	0.0613 (0.0014)	0.0112 (0.0019)	0.9430 (0.0073)	0.0039 (0.0002)	1000
Exp	-0.3661	0.0032	0.0532 (0.0034)	0.1339 (0.0048)	0.3145 (0.0417)	0.0207 (0.0014)	124
Weibull	-0.5455	0.0046	0.0689 (0.0015)	-0.0455 (0.0022)	0.8909 (0.0099)	0.0068 (0.0003)	999
Gompertz	-0.4935	0.0042	0.0618 (0.0014)	0.0065 (0.0020)	0.9530 (0.0067)	0.0039 (0.0002)	999
RP (3)	-0.5014	0.0043	0.0634 (0.0014)	-0.0014 (0.0020)	0.9540 (0.0066)	0.0040 (0.0002)	1000
RP (5)	-0.5001	0.0043	0.0632 (0.0014)	-0.0001 (0.0020)	0.9540 (0.0066)	0.0040 (0.0002)	1000
RP (9)	-0.5002	0.0043	0.0632 (0.0014)	-0.0002 (0.0020)	0.9560 (0.0065)	0.0040 (0.0002)	1000
RP (P)	-0.5022	0.0043	0.0634 (0.0014)	-0.0022 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
FP (W)	-0.5454	0.0047	0.0693 (0.0016)	-0.0454 (0.0022)	0.8911 (0.0100)	0.0069 (0.0003)	973
FP (k=10)	-0.4927	0.0043	0.0635 (0.0014)	0.0073 (0.0020)	0.9490 (0.0070)	0.0041 (0.0002)	1000
FP (k=10000)	-0.6074	0.0036	0.0804 (0.0018)	-0.1074 (0.0025)	0.5480 (0.0157)	0.0180 (0.0006)	1000

Table 5: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5028	0.0045	0.0723 (0.0016)	-0.0028 (0.0023)	0.9250 (0.0083)	0.0052 (0.0002)	1000
Exp	-0.5463	0.0049	0.0769 (0.0017)	-0.0463 (0.0024)	0.8780 (0.0103)	0.0080 (0.0004)	1000
Weibull	-0.5131	0.0047	0.0732 (0.0016)	-0.0131 (0.0023)	0.9300 (0.0081)	0.0055 (0.0003)	1000
Gompertz	-0.5467	0.0051	0.0777 (0.0025)	-0.0467 (0.0035)	0.8855 (0.0144)	0.0082 (0.0005)	489
RP (3)	-0.5034	0.0047	0.0723 (0.0016)	-0.0034 (0.0023)	0.9330 (0.0079)	0.0052 (0.0002)	1000
RP (5)	-0.5035	0.0047	0.0724 (0.0016)	-0.0035 (0.0023)	0.9330 (0.0079)	0.0052 (0.0002)	1000
RP (9)	-0.5036	0.0047	0.0724 (0.0016)	-0.0036 (0.0023)	0.9330 (0.0079)	0.0053 (0.0002)	1000
RP (P)	-0.5049	0.0047	0.0725 (0.0016)	-0.0049 (0.0023)	0.9320 (0.0080)	0.0053 (0.0002)	1000
FP (W)	-0.5124	0.0047	0.0731 (0.0017)	-0.0124 (0.0023)	0.9305 (0.0081)	0.0055 (0.0003)	979
FP (k=10)	-0.4997	0.0047	0.0723 (0.0016)	0.0003 (0.0023)	0.9300 (0.0081)	0.0052 (0.0002)	1000
FP (k=10000)	-0.4958	0.0037	0.0713 (0.0016)	0.0042 (0.0023)	0.9050 (0.0093)	0.0051 (0.0002)	1000
Model frailty: Normal							
Cox	-0.4937	0.0044	0.0705 (0.0016)	0.0063 (0.0022)	0.9280 (0.0082)	0.0050 (0.0002)	1000
Exp	-0.5451	0.0050	0.0766 (0.0017)	-0.0451 (0.0024)	0.8848 (0.0101)	0.0079 (0.0004)	998
Weibull	-0.5170	0.0048	0.0734 (0.0016)	-0.0170 (0.0023)	0.9280 (0.0082)	0.0057 (0.0003)	1000
Gompertz	-0.5433	0.0052	0.0748 (0.0026)	-0.0433 (0.0037)	0.9069 (0.0144)	0.0075 (0.0005)	408
RP (3)	-0.5041	0.0048	0.0722 (0.0016)	-0.0041 (0.0023)	0.9340 (0.0079)	0.0052 (0.0002)	1000
RP (5)	-0.5046	0.0048	0.0724 (0.0016)	-0.0046 (0.0023)	0.9320 (0.0080)	0.0053 (0.0002)	1000
RP (9)	-0.5048	0.0048	0.0724 (0.0016)	-0.0048 (0.0023)	0.9330 (0.0079)	0.0053 (0.0002)	1000
RP (P)	-0.5055	0.0048	0.0724 (0.0016)	-0.0055 (0.0023)	0.9330 (0.0079)	0.0053 (0.0002)	1000
FP (W)	-0.5122	0.0048	0.0727 (0.0016)	-0.0122 (0.0023)	0.9337 (0.0079)	0.0054 (0.0003)	995
FP (k=10)	-0.5016	0.0048	0.0725 (0.0016)	-0.0016 (0.0023)	0.9320 (0.0080)	0.0052 (0.0002)	1000
FP (k=10000)	-0.4957	0.0039	0.0710 (0.0016)	0.0043 (0.0022)	0.9140 (0.0089)	0.0051 (0.0002)	1000

Table 6: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4987	0.0041	0.0649 (0.0015)	0.0013 (0.0021)	0.9420 (0.0074)	0.0042 (0.0002)	1000
Exp	-0.5020	0.0041	0.0642 (0.0014)	-0.0020 (0.0020)	0.9460 (0.0071)	0.0041 (0.0002)	1000
Weibull	-0.5002	0.0042	0.0643 (0.0014)	-0.0002 (0.0020)	0.9500 (0.0069)	0.0041 (0.0002)	1000
Gompertz	-0.5041	0.0043	0.0656 (0.0019)	-0.0041 (0.0027)	0.9545 (0.0086)	0.0043 (0.0003)	593
RP (3)	-0.4994	0.0043	0.0650 (0.0015)	0.0006 (0.0021)	0.9510 (0.0068)	0.0042 (0.0002)	1000
RP (5)	-0.4996	0.0043	0.0651 (0.0015)	0.0004 (0.0021)	0.9510 (0.0068)	0.0042 (0.0002)	1000
RP (9)	-0.4997	0.0043	0.0651 (0.0015)	0.0003 (0.0021)	0.9520 (0.0068)	0.0042 (0.0002)	1000
RP (P)	-0.4999	0.0043	0.0645 (0.0014)	0.0001 (0.0020)	0.9490 (0.0070)	0.0042 (0.0002)	1000
FP (W)	-0.5002	0.0042	0.0643 (0.0014)	-0.0002 (0.0020)	0.9500 (0.0069)	0.0041 (0.0002)	1000
FP (k=10)	-0.4969	0.0043	0.0650 (0.0015)	0.0031 (0.0021)	0.9540 (0.0066)	0.0042 (0.0002)	1000
FP (k=10000)	-0.4985	0.0033	0.0649 (0.0015)	0.0015 (0.0021)	0.9170 (0.0087)	0.0042 (0.0002)	1000
Model frailty: Normal							
Cox	-0.4924	0.0040	0.0638 (0.0014)	0.0076 (0.0020)	0.9470 (0.0071)	0.0041 (0.0002)	1000
Exp	-0.5034	0.0042	0.0643 (0.0014)	-0.0034 (0.0020)	0.9469 (0.0071)	0.0041 (0.0002)	999
Weibull	-0.5074	0.0044	0.0650 (0.0015)	-0.0074 (0.0021)	0.9497 (0.0069)	0.0043 (0.0002)	995
Gompertz	-0.5036	0.0044	0.0661 (0.0020)	-0.0036 (0.0028)	0.9523 (0.0091)	0.0044 (0.0003)	545
RP (3)	-0.5020	0.0044	0.0655 (0.0015)	-0.0020 (0.0021)	0.9490 (0.0070)	0.0043 (0.0002)	1000
RP (5)	-0.5021	0.0044	0.0655 (0.0015)	-0.0021 (0.0021)	0.9490 (0.0070)	0.0043 (0.0002)	1000
RP (9)	-0.5022	0.0044	0.0656 (0.0015)	-0.0022 (0.0021)	0.9500 (0.0069)	0.0043 (0.0002)	1000
RP (P)	-0.5025	0.0043	0.0650 (0.0015)	-0.0025 (0.0021)	0.9480 (0.0070)	0.0042 (0.0002)	1000
FP (W)	-0.5027	0.0043	0.0648 (0.0015)	-0.0027 (0.0021)	0.9508 (0.0069)	0.0042 (0.0002)	995
FP (k=10)	-0.4999	0.0044	0.0655 (0.0015)	0.0001 (0.0021)	0.9510 (0.0068)	0.0043 (0.0002)	1000
FP (k=10000)	-0.5012	0.0034	0.0653 (0.0015)	-0.0012 (0.0021)	0.9180 (0.0087)	0.0043 (0.0002)	1000

Table 7: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4963	0.0045	0.0671 (0.0015)	0.0037 (0.0021)	0.9499 (0.0069)	0.0045 (0.0002)	999
Exp	-0.5939	0.0054	0.0801 (0.0018)	-0.0939 (0.0025)	0.7580 (0.0135)	0.0152 (0.0006)	1000
Weibull	-0.4991	0.0046	0.0674 (0.0015)	0.0009 (0.0021)	0.9610 (0.0061)	0.0045 (0.0002)	1000
Gompertz	-0.5917	0.0056	0.0799 (0.0026)	-0.0917 (0.0036)	0.7743 (0.0190)	0.0148 (0.0008)	483
RP (3)	-0.4969	0.0047	0.0672 (0.0015)	0.0031 (0.0021)	0.9530 (0.0067)	0.0045 (0.0002)	1000
RP (5)	-0.4971	0.0047	0.0673 (0.0015)	0.0029 (0.0021)	0.9550 (0.0066)	0.0045 (0.0002)	999
RP (9)	-0.4972	0.0047	0.0673 (0.0015)	0.0028 (0.0021)	0.9559 (0.0065)	0.0045 (0.0002)	998
RP (P)	-0.4981	0.0046	0.0672 (0.0015)	0.0019 (0.0021)	0.9600 (0.0062)	0.0045 (0.0002)	1000
FP (W)	-0.4995	0.0046	0.0674 (0.0015)	0.0005 (0.0021)	0.9614 (0.0061)	0.0045 (0.0002)	985
FP (k=10)	-0.4923	0.0047	0.0677 (0.0015)	0.0077 (0.0021)	0.9510 (0.0068)	0.0046 (0.0002)	1000
FP (k=10000)	-0.5192	0.0039	0.0708 (0.0016)	-0.0192 (0.0022)	0.9010 (0.0094)	0.0054 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4895	0.0044	0.0658 (0.0015)	0.0105 (0.0021)	0.9480 (0.0070)	0.0044 (0.0002)	1000
Exp	-0.5945	0.0055	0.0798 (0.0018)	-0.0945 (0.0025)	0.7565 (0.0136)	0.0153 (0.0006)	994
Weibull	-0.5071	0.0048	0.0682 (0.0015)	-0.0071 (0.0022)	0.9570 (0.0064)	0.0047 (0.0002)	1000
Gompertz	-0.5894	0.0057	0.0792 (0.0026)	-0.0894 (0.0037)	0.7933 (0.0191)	0.0143 (0.0008)	450
RP (3)	-0.4989	0.0047	0.0675 (0.0015)	0.0011 (0.0021)	0.9570 (0.0064)	0.0046 (0.0002)	1000
RP (5)	-0.4990	0.0047	0.0675 (0.0015)	0.0010 (0.0021)	0.9560 (0.0065)	0.0046 (0.0002)	1000
RP (9)	-0.4991	0.0047	0.0676 (0.0015)	0.0009 (0.0021)	0.9560 (0.0065)	0.0046 (0.0002)	1000
RP (P)	-0.5002	0.0047	0.0675 (0.0015)	-0.0002 (0.0021)	0.9550 (0.0066)	0.0046 (0.0002)	1000
FP (W)	-0.5008	0.0047	0.0676 (0.0015)	-0.0008 (0.0022)	0.9552 (0.0066)	0.0046 (0.0002)	983
FP (k=10)	-0.4969	0.0048	0.0683 (0.0015)	0.0031 (0.0022)	0.9550 (0.0066)	0.0047 (0.0002)	1000
FP (k=10000)	-0.5267	0.0042	0.0718 (0.0016)	-0.0267 (0.0023)	0.8980 (0.0096)	0.0059 (0.0003)	1000

Table 8: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4976	0.0038	0.0652 (0.0015)	0.0024 (0.0021)	0.9288 (0.0081)	0.0043 (0.0002)	997
Exp	-0.4023	0.0030	0.0525 (0.0012)	0.0977 (0.0017)	0.5791 (0.0162)	0.0123 (0.0004)	929
Weibull	-0.4520	0.0035	0.0590 (0.0013)	0.0480 (0.0019)	0.8720 (0.0106)	0.0058 (0.0002)	1000
Gompertz	-0.4992	0.0040	0.0654 (0.0015)	0.0008 (0.0021)	0.9310 (0.0080)	0.0043 (0.0002)	1000
RP (3)	-0.4965	0.0040	0.0651 (0.0015)	0.0035 (0.0021)	0.9330 (0.0079)	0.0042 (0.0002)	1000
RP (5)	-0.4984	0.0040	0.0653 (0.0015)	0.0016 (0.0021)	0.9320 (0.0080)	0.0043 (0.0002)	1000
RP (9)	-0.4989	0.0040	0.0653 (0.0015)	0.0011 (0.0021)	0.9320 (0.0080)	0.0043 (0.0002)	1000
RP (P)	-0.4886	0.0039	0.0641 (0.0014)	0.0114 (0.0020)	0.9350 (0.0078)	0.0042 (0.0002)	1000
FP (W)	-0.4520	0.0035	0.0590 (0.0013)	0.0480 (0.0019)	0.8719 (0.0106)	0.0058 (0.0002)	999
FP (k=10)	-0.4957	0.0040	0.0650 (0.0015)	0.0043 (0.0021)	0.9330 (0.0079)	0.0042 (0.0002)	1000
FP (k=10000)	-0.4898	0.0028	0.0640 (0.0014)	0.0102 (0.0020)	0.8830 (0.0102)	0.0042 (0.0002)	1000
Model frailty: Normal							
Cox	-0.4912	0.0037	0.0642 (0.0014)	0.0088 (0.0020)	0.9230 (0.0084)	0.0042 (0.0002)	1000
Exp	-0.4057	0.0031	0.0531 (0.0014)	0.0943 (0.0020)	0.5950 (0.0188)	0.0117 (0.0004)	679
Weibull	-0.4596	0.0036	0.0602 (0.0013)	0.0404 (0.0019)	0.8960 (0.0097)	0.0052 (0.0002)	1000
Gompertz	-0.5062	0.0041	0.0661 (0.0015)	-0.0062 (0.0021)	0.9300 (0.0081)	0.0044 (0.0002)	1000
RP (3)	-0.4994	0.0041	0.0659 (0.0015)	0.0006 (0.0021)	0.9280 (0.0082)	0.0043 (0.0002)	1000
RP (5)	-0.5008	0.0041	0.0660 (0.0015)	-0.0008 (0.0021)	0.9320 (0.0080)	0.0044 (0.0002)	1000
RP (9)	-0.5012	0.0041	0.0661 (0.0015)	-0.0012 (0.0021)	0.9320 (0.0080)	0.0044 (0.0002)	1000
RP (P)	-0.4914	0.0040	0.0649 (0.0015)	0.0086 (0.0021)	0.9320 (0.0080)	0.0043 (0.0002)	1000
FP (W)	-0.4550	0.0036	0.0594 (0.0013)	0.0450 (0.0019)	0.8860 (0.0101)	0.0055 (0.0002)	1000
FP (k=10)	-0.4988	0.0041	0.0658 (0.0015)	0.0012 (0.0021)	0.9320 (0.0080)	0.0043 (0.0002)	1000
FP (k=10000)	-0.4946	0.0028	0.0650 (0.0015)	0.0054 (0.0021)	0.8830 (0.0102)	0.0042 (0.0002)	1000

Table 9: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4966	0.0039	0.0647 (0.0014)	0.0034 (0.0020)	0.9289 (0.0081)	0.0042 (0.0002)	999
Exp	-0.3715	0.0030	0.0483 (0.0015)	0.1285 (0.0021)	0.3136 (0.0203)	0.0189 (0.0006)	523
Weibull	-0.5487	0.0044	0.0699 (0.0016)	-0.0487 (0.0022)	0.8810 (0.0102)	0.0073 (0.0003)	1000
Gompertz	-0.5026	0.0041	0.0647 (0.0014)	-0.0026 (0.0020)	0.9450 (0.0072)	0.0042 (0.0002)	1000
RP (3)	-0.4980	0.0041	0.0651 (0.0015)	0.0020 (0.0021)	0.9380 (0.0076)	0.0042 (0.0002)	1000
RP (5)	-0.4975	0.0041	0.0649 (0.0015)	0.0025 (0.0021)	0.9360 (0.0077)	0.0042 (0.0002)	1000
RP (9)	-0.4978	0.0041	0.0649 (0.0015)	0.0022 (0.0021)	0.9380 (0.0076)	0.0042 (0.0002)	1000
RP (P)	-0.5002	0.0041	0.0652 (0.0015)	-0.0002 (0.0021)	0.9380 (0.0076)	0.0043 (0.0002)	1000
FP (W)	-0.5484	0.0044	0.0697 (0.0016)	-0.0484 (0.0022)	0.8828 (0.0102)	0.0072 (0.0003)	998
FP (k=10)	-0.4870	0.0041	0.0657 (0.0015)	0.0130 (0.0021)	0.9260 (0.0083)	0.0045 (0.0002)	1000
FP (k=10000)	-0.6087	0.0036	0.0801 (0.0018)	-0.1087 (0.0025)	0.5420 (0.0158)	0.0182 (0.0006)	1000
Model frailty: Normal							
Cox	-0.4903	0.0038	0.0637 (0.0014)	0.0097 (0.0020)	0.9330 (0.0079)	0.0041 (0.0002)	1000
Exp	-0.3571	0.0030	0.0137 (0.0056)	0.1429 (0.0068)	0.0000 (0.0000)	0.0206 (0.0020)	4
Weibull	-0.5499	0.0045	0.0702 (0.0016)	-0.0499 (0.0022)	0.8745 (0.0105)	0.0074 (0.0003)	996
Gompertz	-0.4962	0.0040	0.0638 (0.0014)	0.0038 (0.0020)	0.9440 (0.0073)	0.0041 (0.0002)	1000
RP (3)	-0.5012	0.0041	0.0658 (0.0015)	-0.0012 (0.0021)	0.9370 (0.0077)	0.0043 (0.0002)	1000
RP (5)	-0.5000	0.0041	0.0655 (0.0015)	0.0000 (0.0021)	0.9360 (0.0077)	0.0043 (0.0002)	1000
RP (9)	-0.5002	0.0041	0.0655 (0.0015)	-0.0002 (0.0021)	0.9360 (0.0077)	0.0043 (0.0002)	1000
RP (P)	-0.5024	0.0041	0.0658 (0.0015)	-0.0024 (0.0021)	0.9360 (0.0077)	0.0043 (0.0002)	1000
FP (W)	-0.5501	0.0045	0.0705 (0.0016)	-0.0501 (0.0023)	0.8700 (0.0108)	0.0075 (0.0003)	969
FP (k=10)	-0.4929	0.0042	0.0664 (0.0015)	0.0071 (0.0021)	0.9350 (0.0078)	0.0045 (0.0002)	1000
FP (k=10000)	-0.6169	0.0035	0.0813 (0.0018)	-0.1169 (0.0026)	0.4930 (0.0158)	0.0203 (0.0007)	1000

Table 10: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4988	0.0043	0.0639 (0.0014)	0.0012 (0.0020)	0.9570 (0.0064)	0.0041 (0.0002)	1000
Exp	-0.5457	0.0047	0.0683 (0.0015)	-0.0457 (0.0022)	0.8990 (0.0095)	0.0068 (0.0003)	1000
Weibull	-0.5091	0.0045	0.0644 (0.0014)	-0.0091 (0.0020)	0.9550 (0.0066)	0.0042 (0.0002)	1000
Gompertz	-0.5482	0.0049	0.0684 (0.0022)	-0.0482 (0.0032)	0.9081 (0.0134)	0.0070 (0.0004)	468
RP (3)	-0.4996	0.0044	0.0639 (0.0014)	0.0004 (0.0020)	0.9610 (0.0061)	0.0041 (0.0002)	1000
RP (5)	-0.4997	0.0045	0.0639 (0.0014)	0.0003 (0.0020)	0.9610 (0.0061)	0.0041 (0.0002)	1000
RP (9)	-0.4999	0.0045	0.0639 (0.0014)	0.0001 (0.0020)	0.9609 (0.0061)	0.0041 (0.0002)	998
RP (P)	-0.5011	0.0045	0.0640 (0.0014)	-0.0011 (0.0020)	0.9590 (0.0063)	0.0041 (0.0002)	1000
FP (W)	-0.5090	0.0045	0.0644 (0.0014)	-0.0090 (0.0020)	0.9556 (0.0065)	0.0042 (0.0002)	992
FP (k=10)	-0.4960	0.0044	0.0638 (0.0014)	0.0040 (0.0020)	0.9610 (0.0061)	0.0041 (0.0002)	1000
FP (k=10000)	-0.4929	0.0035	0.0630 (0.0014)	0.0071 (0.0020)	0.9289 (0.0081)	0.0040 (0.0002)	999
Model frailty: Normal							
Cox	-0.4923	0.0042	0.0628 (0.0014)	0.0077 (0.0020)	0.9500 (0.0069)	0.0040 (0.0002)	1000
Exp	-0.5454	0.0047	0.0685 (0.0015)	-0.0454 (0.0022)	0.8998 (0.0095)	0.0068 (0.0003)	998
Weibull	-0.5143	0.0046	0.0651 (0.0015)	-0.0143 (0.0021)	0.9500 (0.0069)	0.0044 (0.0002)	1000
Gompertz	-0.5425	0.0049	0.0695 (0.0025)	-0.0425 (0.0035)	0.9192 (0.0137)	0.0066 (0.0004)	396
RP (3)	-0.5015	0.0045	0.0643 (0.0014)	-0.0015 (0.0020)	0.9600 (0.0062)	0.0041 (0.0002)	1000
RP (5)	-0.5019	0.0045	0.0644 (0.0014)	-0.0019 (0.0020)	0.9600 (0.0062)	0.0041 (0.0002)	1000
RP (9)	-0.5020	0.0045	0.0644 (0.0014)	-0.0020 (0.0020)	0.9600 (0.0062)	0.0042 (0.0002)	1000
RP (P)	-0.5028	0.0045	0.0644 (0.0014)	-0.0028 (0.0020)	0.9600 (0.0062)	0.0042 (0.0002)	1000
FP (W)	-0.5102	0.0045	0.0644 (0.0014)	-0.0102 (0.0020)	0.9545 (0.0066)	0.0042 (0.0002)	988
FP (k=10)	-0.4992	0.0045	0.0644 (0.0014)	0.0008 (0.0020)	0.9570 (0.0064)	0.0041 (0.0002)	1000
FP (k=10000)	-0.4942	0.0036	0.0633 (0.0014)	0.0058 (0.0020)	0.9350 (0.0078)	0.0040 (0.0002)	1000

Table 11: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4905	0.0079	0.0908 (0.0020)	0.0095 (0.0029)	0.9478 (0.0070)	0.0083 (0.0004)	996
Exp	-0.5056	0.0080	0.0913 (0.0020)	-0.0056 (0.0029)	0.9410 (0.0075)	0.0084 (0.0004)	1000
Weibull	-0.5027	0.0082	0.0928 (0.0021)	-0.0027 (0.0029)	0.9480 (0.0070)	0.0086 (0.0004)	1000
Gompertz	-0.5051	0.0082	0.0933 (0.0034)	-0.0051 (0.0048)	0.9301 (0.0132)	0.0087 (0.0007)	372
RP (3)	-0.4911	0.0081	0.0911 (0.0020)	0.0089 (0.0029)	0.9490 (0.0070)	0.0084 (0.0004)	1000
RP (5)	-0.4914	0.0081	0.0912 (0.0020)	0.0086 (0.0029)	0.9480 (0.0070)	0.0084 (0.0004)	1000
RP (9)	-0.4917	0.0081	0.0913 (0.0020)	0.0083 (0.0029)	0.9480 (0.0070)	0.0084 (0.0004)	1000
RP (P)	-0.4933	0.0081	0.0917 (0.0021)	0.0067 (0.0029)	0.9470 (0.0071)	0.0084 (0.0004)	1000
FP (W)	-0.5027	0.0082	0.0928 (0.0021)	-0.0027 (0.0029)	0.9480 (0.0070)	0.0086 (0.0004)	1000
FP (k=10)	-0.4776	0.0079	0.0892 (0.0020)	0.0224 (0.0028)	0.9478 (0.0070)	0.0084 (0.0004)	996
FP (k=10000)	-0.4799	0.0059	0.0882 (0.0020)	0.0201 (0.0028)	0.9044 (0.0093)	0.0082 (0.0003)	994
Model frailty: Normal							
Cox	-0.4574	0.0077	0.0863 (0.0019)	0.0426 (0.0027)	0.9260 (0.0083)	0.0093 (0.0004)	1000
Exp	-0.4794	0.0081	0.0894 (0.0020)	0.0206 (0.0029)	0.9509 (0.0069)	0.0084 (0.0004)	978
Weibull	-0.4752	0.0083	0.0901 (0.0020)	0.0248 (0.0029)	0.9440 (0.0073)	0.0087 (0.0004)	983
Gompertz	-0.4818	0.0082	0.0862 (0.0044)	0.0182 (0.0063)	0.9630 (0.0137)	0.0077 (0.0008)	189
RP (3)	-0.4822	0.0084	0.0909 (0.0020)	0.0178 (0.0029)	0.9480 (0.0070)	0.0086 (0.0004)	1000
RP (5)	-0.4822	0.0084	0.0909 (0.0020)	0.0178 (0.0029)	0.9470 (0.0071)	0.0086 (0.0004)	1000
RP (9)	-0.4824	0.0084	0.0909 (0.0020)	0.0176 (0.0029)	0.9480 (0.0070)	0.0086 (0.0004)	1000
RP (P)	-0.4817	0.0083	0.0909 (0.0020)	0.0183 (0.0029)	0.9480 (0.0070)	0.0086 (0.0004)	1000
FP (W)	-0.4946	0.0086	0.0938 (0.0021)	0.0054 (0.0030)	0.9483 (0.0071)	0.0088 (0.0004)	968
FP (k=10)	-0.4590	0.0082	0.0880 (0.0020)	0.0410 (0.0028)	0.9340 (0.0079)	0.0094 (0.0004)	1000
FP (k=10000)	-0.4538	0.0066	0.0849 (0.0019)	0.0462 (0.0027)	0.8987 (0.0096)	0.0093 (0.0004)	997

Table 12: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4942	0.0085	0.0934 (0.0021)	0.0058 (0.0030)	0.9459 (0.0072)	0.0087 (0.0004)	999
Exp	-0.6133	0.0098	0.1132 (0.0025)	-0.1133 (0.0036)	0.7680 (0.0133)	0.0256 (0.0010)	1000
Weibull	-0.5082	0.0088	0.0958 (0.0021)	-0.0082 (0.0030)	0.9380 (0.0076)	0.0092 (0.0004)	1000
Gompertz	-0.6124	0.0100	0.1074 (0.0042)	-0.1124 (0.0060)	0.7815 (0.0229)	0.0241 (0.0015)	325
RP (3)	-0.4953	0.0087	0.0937 (0.0021)	0.0047 (0.0030)	0.9480 (0.0070)	0.0088 (0.0004)	1000
RP (5)	-0.4960	0.0087	0.0937 (0.0021)	0.0040 (0.0030)	0.9470 (0.0071)	0.0088 (0.0004)	1000
RP (9)	-0.4962	0.0087	0.0938 (0.0021)	0.0038 (0.0030)	0.9470 (0.0071)	0.0088 (0.0004)	1000
RP (P)	-0.4966	0.0087	0.0940 (0.0021)	0.0034 (0.0030)	0.9460 (0.0071)	0.0088 (0.0004)	1000
FP (W)	-0.5081	0.0088	0.0958 (0.0021)	-0.0081 (0.0030)	0.9379 (0.0076)	0.0092 (0.0004)	999
FP (k=10)	-0.5184	0.0091	0.1010 (0.0023)	-0.0184 (0.0032)	0.9285 (0.0082)	0.0105 (0.0005)	993
FP (k=10000)	-0.5603	0.0069	0.1046 (0.0023)	-0.0603 (0.0033)	0.8318 (0.0118)	0.0146 (0.0006)	999
Model frailty: Normal							
Cox	-0.4542	0.0083	0.0888 (0.0020)	0.0458 (0.0028)	0.9230 (0.0084)	0.0100 (0.0004)	1000
Exp	-0.5693	0.0099	0.1106 (0.0025)	-0.0693 (0.0035)	0.8753 (0.0106)	0.0170 (0.0008)	978
Weibull	-0.4734	0.0089	0.0930 (0.0021)	0.0266 (0.0030)	0.9407 (0.0076)	0.0094 (0.0004)	978
Gompertz	-0.5673	0.0101	0.1203 (0.0090)	-0.0673 (0.0126)	0.8571 (0.0367)	0.0188 (0.0028)	91
RP (3)	-0.4791	0.0089	0.0940 (0.0021)	0.0209 (0.0030)	0.9460 (0.0071)	0.0093 (0.0004)	1000
RP (5)	-0.4795	0.0089	0.0941 (0.0021)	0.0205 (0.0030)	0.9470 (0.0071)	0.0093 (0.0004)	1000
RP (9)	-0.4795	0.0089	0.0941 (0.0021)	0.0205 (0.0030)	0.9450 (0.0072)	0.0093 (0.0004)	1000
RP (P)	-0.4792	0.0089	0.0942 (0.0021)	0.0208 (0.0030)	0.9450 (0.0072)	0.0093 (0.0004)	1000
FP (W)	-0.4932	0.0093	0.0973 (0.0022)	0.0068 (0.0031)	0.9483 (0.0071)	0.0095 (0.0004)	968
FP (k=10)	-0.4819	0.0091	0.0954 (0.0021)	0.0181 (0.0030)	0.9450 (0.0072)	0.0094 (0.0004)	1000
FP (k=10000)	-0.5174	0.0079	0.1005 (0.0023)	-0.0174 (0.0032)	0.9085 (0.0091)	0.0104 (0.0005)	994

Table 13: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4864	0.0070	0.0869 (0.0019)	0.0136 (0.0028)	0.9348 (0.0078)	0.0077 (0.0004)	997
Exp	-0.4621	0.0067	0.0809 (0.0018)	0.0379 (0.0026)	0.9210 (0.0085)	0.0080 (0.0004)	1000
Weibull	-0.4844	0.0071	0.0863 (0.0019)	0.0156 (0.0027)	0.9390 (0.0076)	0.0077 (0.0004)	1000
Gompertz	-0.4661	0.0068	0.0808 (0.0032)	0.0339 (0.0046)	0.9238 (0.0149)	0.0077 (0.0006)	315
RP (3)	-0.4868	0.0072	0.0872 (0.0020)	0.0132 (0.0028)	0.9380 (0.0076)	0.0078 (0.0004)	1000
RP (5)	-0.4874	0.0072	0.0872 (0.0019)	0.0126 (0.0028)	0.9370 (0.0077)	0.0077 (0.0004)	1000
RP (9)	-0.4881	0.0072	0.0871 (0.0019)	0.0119 (0.0028)	0.9390 (0.0076)	0.0077 (0.0004)	1000
RP (P)	-0.4862	0.0072	0.0869 (0.0019)	0.0138 (0.0027)	0.9340 (0.0079)	0.0077 (0.0004)	1000
FP (W)	-0.4844	0.0071	0.0863 (0.0019)	0.0156 (0.0027)	0.9390 (0.0076)	0.0077 (0.0004)	1000
FP (k=10)	-0.4707	0.0070	0.0860 (0.0019)	0.0293 (0.0027)	0.9260 (0.0083)	0.0082 (0.0004)	1000
FP (k=10000)	-0.4849	0.0053	0.0861 (0.0019)	0.0151 (0.0027)	0.8913 (0.0099)	0.0076 (0.0004)	994
Model frailty: Normal							
Cox	-0.4684	0.0069	0.0834 (0.0019)	0.0316 (0.0026)	0.9350 (0.0078)	0.0079 (0.0004)	1000
Exp	-0.4472	0.0067	0.0782 (0.0018)	0.0528 (0.0025)	0.9051 (0.0094)	0.0089 (0.0004)	980
Weibull	-0.4761	0.0073	0.0847 (0.0019)	0.0239 (0.0027)	0.9434 (0.0073)	0.0077 (0.0004)	989
Gompertz	-0.4561	0.0068	0.0730 (0.0036)	0.0439 (0.0051)	0.9314 (0.0177)	0.0072 (0.0007)	204
RP (3)	-0.4917	0.0075	0.0875 (0.0020)	0.0083 (0.0028)	0.9460 (0.0071)	0.0077 (0.0004)	1000
RP (5)	-0.4927	0.0075	0.0875 (0.0020)	0.0073 (0.0028)	0.9460 (0.0071)	0.0077 (0.0004)	1000
RP (9)	-0.4932	0.0075	0.0875 (0.0020)	0.0068 (0.0028)	0.9450 (0.0072)	0.0077 (0.0004)	1000
RP (P)	-0.4919	0.0075	0.0875 (0.0020)	0.0081 (0.0028)	0.9450 (0.0072)	0.0077 (0.0004)	1000
FP (W)	-0.4929	0.0076	0.0878 (0.0020)	0.0071 (0.0029)	0.9441 (0.0075)	0.0077 (0.0004)	948
FP (k=10)	-0.4698	0.0073	0.0850 (0.0019)	0.0302 (0.0027)	0.9350 (0.0078)	0.0081 (0.0004)	1000
FP (k=10000)	-0.4714	0.0057	0.0833 (0.0019)	0.0286 (0.0026)	0.9000 (0.0095)	0.0078 (0.0004)	1000

Table 14: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4904	0.0072	0.0882 (0.0020)	0.0096 (0.0028)	0.9379 (0.0076)	0.0079 (0.0003)	998
Exp	-0.3425	0.0058	0.0651 (0.0015)	0.1575 (0.0021)	0.4560 (0.0158)	0.0290 (0.0007)	1000
Weibull	-0.5090	0.0077	0.0921 (0.0021)	-0.0090 (0.0029)	0.9350 (0.0078)	0.0086 (0.0004)	1000
Gompertz	-0.3389	0.0059	0.0677 (0.0024)	0.1611 (0.0034)	0.4409 (0.0246)	0.0305 (0.0011)	406
RP (3)	-0.4920	0.0075	0.0886 (0.0020)	0.0080 (0.0028)	0.9449 (0.0072)	0.0079 (0.0003)	999
RP (5)	-0.4916	0.0074	0.0885 (0.0020)	0.0084 (0.0028)	0.9430 (0.0073)	0.0079 (0.0003)	1000
RP (9)	-0.4921	0.0074	0.0885 (0.0020)	0.0079 (0.0028)	0.9430 (0.0073)	0.0079 (0.0003)	1000
RP (P)	-0.4890	0.0074	0.0879 (0.0020)	0.0110 (0.0028)	0.9439 (0.0073)	0.0078 (0.0003)	998
FP (W)	-0.5090	0.0077	0.0921 (0.0021)	-0.0090 (0.0029)	0.9350 (0.0078)	0.0086 (0.0004)	1000
FP (k=10)	-0.3983	0.0073	0.0902 (0.0020)	0.1017 (0.0029)	0.7477 (0.0137)	0.0185 (0.0007)	999
FP (k=10000)	-0.5321	0.0063	0.0983 (0.0034)	-0.0321 (0.0049)	0.8589 (0.0172)	0.0107 (0.0007)	411
Model frailty: Normal							
Cox	-0.4674	0.0071	0.0850 (0.0019)	0.0326 (0.0027)	0.9300 (0.0081)	0.0083 (0.0004)	1000
Exp	-0.3385	0.0057	0.0658 (0.0015)	0.1615 (0.0021)	0.4216 (0.0157)	0.0304 (0.0007)	989
Weibull	-0.4885	0.0077	0.0903 (0.0020)	0.0115 (0.0029)	0.9407 (0.0076)	0.0083 (0.0004)	978
Gompertz	-0.3396	0.0058	0.0670 (0.0027)	0.1604 (0.0038)	0.4497 (0.0279)	0.0302 (0.0013)	318
RP (3)	-0.4913	0.0077	0.0895 (0.0020)	0.0087 (0.0028)	0.9490 (0.0070)	0.0081 (0.0004)	1000
RP (5)	-0.4915	0.0077	0.0891 (0.0020)	0.0085 (0.0028)	0.9480 (0.0070)	0.0080 (0.0003)	1000
RP (9)	-0.4921	0.0077	0.0892 (0.0020)	0.0079 (0.0028)	0.9490 (0.0070)	0.0080 (0.0003)	1000
RP (P)	-0.4878	0.0077	0.0885 (0.0020)	0.0122 (0.0028)	0.9500 (0.0069)	0.0080 (0.0003)	1000
FP (W)	-0.5069	0.0080	0.0930 (0.0023)	-0.0069 (0.0032)	0.9393 (0.0082)	0.0087 (0.0004)	840
FP (k=10)	-0.4399	0.0076	0.0877 (0.0020)	0.0601 (0.0028)	0.8918 (0.0098)	0.0113 (0.0005)	998
FP (k=10000)	-0.5834	0.0071	0.1091 (0.0024)	-0.0834 (0.0035)	0.7688 (0.0134)	0.0188 (0.0008)	995

Table 15: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4968	0.0082	0.0936 (0.0021)	0.0032 (0.0030)	0.9408 (0.0075)	0.0088 (0.0004)	996
Exp	-0.5501	0.0087	0.1016 (0.0023)	-0.0501 (0.0032)	0.8980 (0.0096)	0.0128 (0.0005)	1000
Weibull	-0.4956	0.0084	0.0934 (0.0021)	0.0044 (0.0030)	0.9400 (0.0075)	0.0087 (0.0004)	1000
Gompertz	-0.5460	0.0089	0.1041 (0.0039)	-0.0460 (0.0055)	0.9061 (0.0153)	0.0129 (0.0009)	362
RP (3)	-0.4956	0.0084	0.0937 (0.0021)	0.0044 (0.0030)	0.9410 (0.0075)	0.0088 (0.0004)	1000
RP (5)	-0.4985	0.0084	0.0940 (0.0021)	0.0015 (0.0030)	0.9410 (0.0075)	0.0088 (0.0004)	1000
RP (9)	-0.4988	0.0084	0.0939 (0.0021)	0.0012 (0.0030)	0.9420 (0.0074)	0.0088 (0.0004)	1000
RP (P)	-0.4972	0.0084	0.0937 (0.0021)	0.0028 (0.0030)	0.9410 (0.0075)	0.0088 (0.0004)	1000
FP (W)	-0.4957	0.0084	0.0934 (0.0021)	0.0043 (0.0030)	0.9399 (0.0075)	0.0087 (0.0004)	998
FP (k=10)	-0.5020	0.0084	0.0949 (0.0021)	-0.0020 (0.0030)	0.9374 (0.0077)	0.0090 (0.0004)	991
FP (k=10000)	-0.5003	0.0061	0.0936 (0.0021)	-0.0003 (0.0030)	0.9048 (0.0093)	0.0088 (0.0004)	998
Model frailty: Normal							
Cox	-0.4597	0.0080	0.0896 (0.0020)	0.0403 (0.0028)	0.9270 (0.0082)	0.0096 (0.0004)	1000
Exp	-0.5185	0.0089	0.1004 (0.0023)	-0.0185 (0.0032)	0.9335 (0.0080)	0.0104 (0.0005)	978
Weibull	-0.4683	0.0084	0.0921 (0.0021)	0.0317 (0.0029)	0.9352 (0.0078)	0.0095 (0.0004)	987
Gompertz	-0.5188	0.0091	0.0968 (0.0060)	-0.0188 (0.0084)	0.9474 (0.0194)	0.0096 (0.0014)	133
RP (3)	-0.4831	0.0086	0.0944 (0.0021)	0.0169 (0.0030)	0.9480 (0.0070)	0.0092 (0.0004)	1000
RP (5)	-0.4850	0.0086	0.0945 (0.0021)	0.0150 (0.0030)	0.9490 (0.0070)	0.0091 (0.0004)	1000
RP (9)	-0.4851	0.0086	0.0945 (0.0021)	0.0149 (0.0030)	0.9480 (0.0070)	0.0091 (0.0004)	1000
RP (P)	-0.4832	0.0086	0.0942 (0.0021)	0.0168 (0.0030)	0.9470 (0.0071)	0.0091 (0.0004)	1000
FP (W)	-0.4879	0.0088	0.0953 (0.0021)	0.0121 (0.0030)	0.9466 (0.0071)	0.0092 (0.0004)	992
FP (k=10)	-0.4794	0.0086	0.0941 (0.0021)	0.0206 (0.0030)	0.9420 (0.0074)	0.0093 (0.0004)	1000
FP (k=10000)	-0.4735	0.0070	0.0912 (0.0020)	0.0265 (0.0029)	0.9195 (0.0086)	0.0090 (0.0004)	994

Table 16: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5004	0.0060	0.0816 (0.0018)	-0.0004 (0.0026)	0.9420 (0.0074)	0.0067 (0.0003)	1000
Exp	-0.5011	0.0060	0.0798 (0.0018)	-0.0011 (0.0025)	0.9430 (0.0073)	0.0064 (0.0003)	1000
Weibull	-0.5019	0.0062	0.0814 (0.0018)	-0.0019 (0.0026)	0.9430 (0.0073)	0.0066 (0.0003)	1000
Gompertz	-0.5034	0.0062	0.0820 (0.0027)	-0.0034 (0.0037)	0.9374 (0.0111)	0.0067 (0.0005)	479
RP (3)	-0.5013	0.0062	0.0817 (0.0018)	-0.0013 (0.0026)	0.9450 (0.0072)	0.0067 (0.0003)	1000
RP (5)	-0.5015	0.0062	0.0818 (0.0018)	-0.0015 (0.0026)	0.9470 (0.0071)	0.0067 (0.0003)	1000
RP (9)	-0.5015	0.0062	0.0818 (0.0018)	-0.0015 (0.0026)	0.9460 (0.0071)	0.0067 (0.0003)	1000
RP (P)	-0.5015	0.0062	0.0815 (0.0018)	-0.0015 (0.0026)	0.9420 (0.0074)	0.0066 (0.0003)	1000
FP (W)	-0.5018	0.0062	0.0814 (0.0018)	-0.0018 (0.0026)	0.9429 (0.0073)	0.0066 (0.0003)	998
FP (k=10)	-0.4977	0.0062	0.0818 (0.0018)	0.0023 (0.0026)	0.9430 (0.0073)	0.0067 (0.0003)	1000
FP (k=10000)	-0.4998	0.0048	0.0815 (0.0018)	0.0002 (0.0026)	0.9078 (0.0092)	0.0066 (0.0003)	998
Model frailty: Normal							
Cox	-0.4755	0.0057	0.0777 (0.0017)	0.0245 (0.0025)	0.9360 (0.0077)	0.0066 (0.0003)	1000
Exp	-0.4908	0.0060	0.0787 (0.0018)	0.0092 (0.0025)	0.9449 (0.0072)	0.0063 (0.0003)	999
Weibull	-0.4952	0.0062	0.0806 (0.0018)	0.0048 (0.0025)	0.9510 (0.0068)	0.0065 (0.0003)	999
Gompertz	-0.4962	0.0061	0.0802 (0.0028)	0.0038 (0.0040)	0.9512 (0.0106)	0.0064 (0.0005)	410
RP (3)	-0.5006	0.0064	0.0820 (0.0018)	-0.0006 (0.0026)	0.9420 (0.0074)	0.0067 (0.0003)	1000
RP (5)	-0.5006	0.0064	0.0821 (0.0018)	-0.0006 (0.0026)	0.9420 (0.0074)	0.0067 (0.0003)	1000
RP (9)	-0.5006	0.0064	0.0821 (0.0018)	-0.0006 (0.0026)	0.9420 (0.0074)	0.0067 (0.0003)	1000
RP (P)	-0.5013	0.0063	0.0820 (0.0018)	-0.0013 (0.0026)	0.9450 (0.0072)	0.0067 (0.0003)	1000
FP (W)	-0.5019	0.0063	0.0819 (0.0019)	-0.0019 (0.0026)	0.9469 (0.0072)	0.0067 (0.0003)	960
FP (k=10)	-0.4967	0.0063	0.0821 (0.0018)	0.0033 (0.0026)	0.9408 (0.0075)	0.0067 (0.0003)	996
FP (k=10000)	-0.4957	0.0052	0.0812 (0.0018)	0.0043 (0.0026)	0.9140 (0.0089)	0.0066 (0.0003)	1000

Table 17: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4966	0.0065	0.0830 (0.0019)	0.0034 (0.0026)	0.9440 (0.0073)	0.0069 (0.0003)	1000
Exp	-0.5931	0.0076	0.0989 (0.0022)	-0.0931 (0.0031)	0.7810 (0.0131)	0.0184 (0.0008)	1000
Weibull	-0.4998	0.0067	0.0831 (0.0019)	0.0002 (0.0026)	0.9430 (0.0073)	0.0069 (0.0003)	1000
Gompertz	-0.5913	0.0078	0.0950 (0.0032)	-0.0913 (0.0046)	0.8157 (0.0186)	0.0173 (0.0010)	434
RP (3)	-0.4973	0.0067	0.0831 (0.0019)	0.0027 (0.0026)	0.9450 (0.0072)	0.0069 (0.0003)	1000
RP (5)	-0.4975	0.0067	0.0832 (0.0019)	0.0025 (0.0026)	0.9450 (0.0072)	0.0069 (0.0003)	1000
RP (9)	-0.4976	0.0067	0.0832 (0.0019)	0.0024 (0.0026)	0.9450 (0.0072)	0.0069 (0.0003)	1000
RP (P)	-0.4987	0.0067	0.0831 (0.0019)	0.0013 (0.0026)	0.9420 (0.0074)	0.0069 (0.0003)	1000
FP (W)	-0.4998	0.0067	0.0831 (0.0019)	0.0002 (0.0026)	0.9430 (0.0073)	0.0069 (0.0003)	1000
FP (k=10)	-0.4916	0.0067	0.0840 (0.0019)	0.0084 (0.0027)	0.9370 (0.0077)	0.0071 (0.0003)	1000
FP (k=10000)	-0.5239	0.0056	0.0889 (0.0020)	-0.0239 (0.0028)	0.8860 (0.0101)	0.0085 (0.0004)	1000
Model frailty: Normal							
Cox	-0.4723	0.0062	0.0787 (0.0018)	0.0277 (0.0025)	0.9430 (0.0073)	0.0069 (0.0003)	1000
Exp	-0.5768	0.0076	0.0960 (0.0022)	-0.0768 (0.0030)	0.8394 (0.0116)	0.0151 (0.0007)	996
Weibull	-0.4961	0.0067	0.0822 (0.0018)	0.0039 (0.0026)	0.9469 (0.0071)	0.0068 (0.0003)	998
Gompertz	-0.5812	0.0078	0.0939 (0.0039)	-0.0812 (0.0055)	0.8537 (0.0209)	0.0154 (0.0012)	287
RP (3)	-0.4982	0.0069	0.0835 (0.0019)	0.0018 (0.0026)	0.9460 (0.0071)	0.0070 (0.0003)	1000
RP (5)	-0.4983	0.0069	0.0835 (0.0019)	0.0017 (0.0026)	0.9460 (0.0071)	0.0070 (0.0003)	1000
RP (9)	-0.4984	0.0069	0.0836 (0.0019)	0.0016 (0.0026)	0.9460 (0.0071)	0.0070 (0.0003)	1000
RP (P)	-0.4998	0.0069	0.0835 (0.0019)	0.0002 (0.0026)	0.9440 (0.0073)	0.0070 (0.0003)	1000
FP (W)	-0.5016	0.0069	0.0840 (0.0019)	-0.0016 (0.0027)	0.9372 (0.0078)	0.0070 (0.0003)	972
FP (k=10)	-0.4962	0.0070	0.0848 (0.0019)	0.0038 (0.0027)	0.9459 (0.0072)	0.0072 (0.0003)	999
FP (k=10000)	-0.5257	0.0064	0.0892 (0.0020)	-0.0257 (0.0028)	0.9087 (0.0091)	0.0086 (0.0004)	997

Table 18: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4992	0.0056	0.0747 (0.0017)	0.0008 (0.0024)	0.9560 (0.0065)	0.0056 (0.0003)	999
Exp	-0.4110	0.0047	0.0607 (0.0014)	0.0890 (0.0019)	0.7680 (0.0133)	0.0116 (0.0004)	1000
Weibull	-0.4671	0.0053	0.0695 (0.0016)	0.0329 (0.0022)	0.9330 (0.0079)	0.0059 (0.0002)	1000
Gompertz	-0.4127	0.0048	0.0626 (0.0017)	0.0873 (0.0024)	0.7808 (0.0160)	0.0115 (0.0004)	666
RP (3)	-0.4995	0.0057	0.0747 (0.0017)	0.0005 (0.0024)	0.9610 (0.0061)	0.0056 (0.0003)	1000
RP (5)	-0.5001	0.0057	0.0748 (0.0017)	-0.0001 (0.0024)	0.9580 (0.0063)	0.0056 (0.0003)	1000
RP (9)	-0.5003	0.0058	0.0748 (0.0017)	-0.0003 (0.0024)	0.9580 (0.0063)	0.0056 (0.0003)	1000
RP (P)	-0.4934	0.0057	0.0739 (0.0017)	0.0066 (0.0023)	0.9590 (0.0063)	0.0055 (0.0003)	1000
FP (W)	-0.4671	0.0053	0.0693 (0.0016)	0.0329 (0.0022)	0.9333 (0.0079)	0.0059 (0.0002)	990
FP (k=10)	-0.4967	0.0057	0.0746 (0.0017)	0.0033 (0.0024)	0.9600 (0.0062)	0.0056 (0.0003)	1000
FP (k=10000)	-0.4951	0.0042	0.0740 (0.0017)	0.0049 (0.0023)	0.9149 (0.0088)	0.0055 (0.0002)	999
Model frailty: Normal							
Cox	-0.4735	0.0053	0.0707 (0.0016)	0.0265 (0.0022)	0.9450 (0.0072)	0.0057 (0.0002)	1000
Exp	-0.4060	0.0046	0.0603 (0.0013)	0.0940 (0.0019)	0.7400 (0.0139)	0.0125 (0.0004)	1000
Weibull	-0.4638	0.0054	0.0688 (0.0015)	0.0362 (0.0022)	0.9337 (0.0079)	0.0060 (0.0003)	995
Gompertz	-0.4071	0.0048	0.0635 (0.0018)	0.0929 (0.0026)	0.7451 (0.0176)	0.0127 (0.0005)	616
RP (3)	-0.4967	0.0059	0.0741 (0.0017)	0.0033 (0.0023)	0.9630 (0.0060)	0.0055 (0.0003)	1000
RP (5)	-0.4970	0.0059	0.0742 (0.0017)	0.0030 (0.0023)	0.9630 (0.0060)	0.0055 (0.0003)	1000
RP (9)	-0.4971	0.0059	0.0742 (0.0017)	0.0029 (0.0023)	0.9620 (0.0060)	0.0055 (0.0003)	1000
RP (P)	-0.4909	0.0058	0.0733 (0.0016)	0.0091 (0.0023)	0.9640 (0.0059)	0.0055 (0.0002)	1000
FP (W)	-0.4702	0.0055	0.0704 (0.0016)	0.0298 (0.0023)	0.9440 (0.0075)	0.0058 (0.0003)	929
FP (k=10)	-0.4941	0.0059	0.0742 (0.0017)	0.0059 (0.0023)	0.9620 (0.0060)	0.0055 (0.0003)	1000
FP (k=10000)	-0.4949	0.0044	0.0739 (0.0017)	0.0051 (0.0023)	0.9240 (0.0084)	0.0055 (0.0002)	1000

Table 19: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4972	0.0057	0.0736 (0.0016)	0.0028 (0.0023)	0.9620 (0.0060)	0.0054 (0.0002)	1000
Exp	-0.3626	0.0044	0.0549 (0.0012)	0.1374 (0.0017)	0.4420 (0.0157)	0.0219 (0.0005)	1000
Weibull	-0.5327	0.0062	0.0785 (0.0018)	-0.0327 (0.0025)	0.9290 (0.0081)	0.0072 (0.0003)	1000
Gompertz	-0.4600	0.0055	0.0801 (0.0018)	0.0400 (0.0026)	0.8811 (0.0104)	0.0080 (0.0003)	976
RP (3)	-0.4998	0.0059	0.0740 (0.0017)	0.0002 (0.0023)	0.9620 (0.0060)	0.0055 (0.0002)	1000
RP (5)	-0.4982	0.0058	0.0738 (0.0017)	0.0018 (0.0023)	0.9620 (0.0060)	0.0054 (0.0002)	1000
RP (9)	-0.4983	0.0058	0.0738 (0.0017)	0.0017 (0.0023)	0.9630 (0.0060)	0.0054 (0.0002)	1000
RP (P)	-0.4997	0.0059	0.0740 (0.0017)	0.0003 (0.0023)	0.9610 (0.0061)	0.0055 (0.0002)	1000
FP (W)	-0.5326	0.0062	0.0785 (0.0018)	-0.0326 (0.0025)	0.9287 (0.0082)	0.0072 (0.0003)	996
FP (k=10)	-0.4827	0.0058	0.0739 (0.0017)	0.0173 (0.0023)	0.9580 (0.0063)	0.0058 (0.0002)	1000
FP (k=10000)	-0.5824	0.0049	0.0890 (0.0020)	-0.0824 (0.0028)	0.7150 (0.0143)	0.0147 (0.0006)	1000
Model frailty: Normal							
Cox	-0.4715	0.0054	0.0700 (0.0016)	0.0285 (0.0022)	0.9420 (0.0074)	0.0057 (0.0002)	1000
Exp	-0.3584	0.0043	0.0551 (0.0012)	0.1416 (0.0017)	0.4114 (0.0156)	0.0231 (0.0005)	999
Weibull	-0.5152	0.0060	0.0759 (0.0017)	-0.0152 (0.0024)	0.9549 (0.0066)	0.0060 (0.0002)	998
Gompertz	-0.4351	0.0052	0.0732 (0.0017)	0.0649 (0.0024)	0.8266 (0.0123)	0.0096 (0.0004)	940
RP (3)	-0.4966	0.0060	0.0738 (0.0017)	0.0034 (0.0023)	0.9690 (0.0055)	0.0055 (0.0002)	1000
RP (5)	-0.4954	0.0060	0.0737 (0.0016)	0.0046 (0.0023)	0.9690 (0.0055)	0.0055 (0.0002)	1000
RP (9)	-0.4955	0.0060	0.0738 (0.0017)	0.0045 (0.0023)	0.9690 (0.0055)	0.0055 (0.0002)	1000
RP (P)	-0.4956	0.0060	0.0737 (0.0016)	0.0044 (0.0023)	0.9680 (0.0056)	0.0054 (0.0002)	1000
FP (W)	-0.5253	0.0063	0.0774 (0.0018)	-0.0253 (0.0025)	0.9467 (0.0073)	0.0066 (0.0003)	956
FP (k=10)	-0.4848	0.0060	0.0738 (0.0017)	0.0152 (0.0023)	0.9550 (0.0066)	0.0057 (0.0002)	999
FP (k=10000)	-0.5826	0.0051	0.0903 (0.0020)	-0.0826 (0.0029)	0.7150 (0.0143)	0.0150 (0.0006)	1000

Table 20: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5036	0.0062	0.0809 (0.0018)	-0.0036 (0.0026)	0.9429 (0.0073)	0.0066 (0.0003)	998
Exp	-0.5422	0.0066	0.0865 (0.0019)	-0.0422 (0.0027)	0.9090 (0.0091)	0.0093 (0.0004)	1000
Weibull	-0.5077	0.0064	0.0812 (0.0018)	-0.0077 (0.0026)	0.9390 (0.0076)	0.0066 (0.0003)	1000
Gompertz	-0.5404	0.0069	0.0847 (0.0028)	-0.0404 (0.0039)	0.9154 (0.0128)	0.0088 (0.0006)	473
RP (3)	-0.5031	0.0064	0.0809 (0.0018)	-0.0031 (0.0026)	0.9460 (0.0071)	0.0065 (0.0003)	1000
RP (5)	-0.5041	0.0064	0.0811 (0.0018)	-0.0041 (0.0026)	0.9460 (0.0071)	0.0066 (0.0003)	1000
RP (9)	-0.5044	0.0064	0.0812 (0.0018)	-0.0044 (0.0026)	0.9460 (0.0071)	0.0066 (0.0003)	1000
RP (P)	-0.5043	0.0064	0.0810 (0.0018)	-0.0043 (0.0026)	0.9460 (0.0071)	0.0066 (0.0003)	1000
FP (W)	-0.5078	0.0064	0.0813 (0.0018)	-0.0078 (0.0026)	0.9387 (0.0076)	0.0067 (0.0003)	995
FP (k=10)	-0.4995	0.0064	0.0811 (0.0018)	0.0005 (0.0026)	0.9450 (0.0072)	0.0066 (0.0003)	1000
FP (k=10000)	-0.4957	0.0050	0.0798 (0.0018)	0.0043 (0.0025)	0.9110 (0.0090)	0.0064 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4790	0.0059	0.0765 (0.0017)	0.0210 (0.0024)	0.9310 (0.0080)	0.0063 (0.0003)	1000
Exp	-0.5305	0.0066	0.0846 (0.0019)	-0.0305 (0.0027)	0.9240 (0.0084)	0.0081 (0.0004)	1000
Weibull	-0.5005	0.0064	0.0798 (0.0018)	-0.0005 (0.0025)	0.9449 (0.0072)	0.0064 (0.0003)	998
Gompertz	-0.5344	0.0068	0.0870 (0.0033)	-0.0344 (0.0047)	0.9176 (0.0149)	0.0087 (0.0007)	340
RP (3)	-0.5034	0.0066	0.0808 (0.0018)	-0.0034 (0.0026)	0.9490 (0.0070)	0.0065 (0.0003)	1000
RP (5)	-0.5044	0.0066	0.0810 (0.0018)	-0.0044 (0.0026)	0.9480 (0.0070)	0.0066 (0.0003)	1000
RP (9)	-0.5047	0.0066	0.0811 (0.0018)	-0.0047 (0.0026)	0.9470 (0.0071)	0.0066 (0.0003)	1000
RP (P)	-0.5039	0.0066	0.0808 (0.0018)	-0.0039 (0.0026)	0.9490 (0.0070)	0.0065 (0.0003)	1000
FP (W)	-0.5068	0.0065	0.0806 (0.0019)	-0.0068 (0.0026)	0.9472 (0.0073)	0.0065 (0.0003)	947
FP (k=10)	-0.5012	0.0066	0.0812 (0.0018)	-0.0012 (0.0026)	0.9479 (0.0070)	0.0066 (0.0003)	998
FP (k=10000)	-0.4926	0.0055	0.0794 (0.0018)	0.0074 (0.0025)	0.9200 (0.0086)	0.0063 (0.0003)	1000

Table 21: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4909	0.0052	0.0751 (0.0017)	0.0091 (0.0024)	0.9398 (0.0075)	0.0057 (0.0003)	997
Exp	-0.5024	0.0053	0.0752 (0.0017)	-0.0024 (0.0024)	0.9410 (0.0075)	0.0057 (0.0003)	1000
Weibull	-0.4920	0.0053	0.0746 (0.0017)	0.0080 (0.0024)	0.9390 (0.0076)	0.0056 (0.0003)	1000
Gompertz	-0.4993	0.0055	0.0746 (0.0024)	0.0007 (0.0034)	0.9466 (0.0102)	0.0055 (0.0004)	487
RP (3)	-0.4917	0.0054	0.0753 (0.0017)	0.0083 (0.0024)	0.9430 (0.0073)	0.0057 (0.0003)	1000
RP (5)	-0.4918	0.0054	0.0753 (0.0017)	0.0082 (0.0024)	0.9440 (0.0073)	0.0057 (0.0003)	1000
RP (9)	-0.4920	0.0054	0.0753 (0.0017)	0.0080 (0.0024)	0.9450 (0.0072)	0.0057 (0.0003)	1000
RP (P)	-0.4918	0.0054	0.0750 (0.0017)	0.0082 (0.0024)	0.9420 (0.0074)	0.0057 (0.0003)	1000
FP (W)	-0.4921	0.0053	0.0746 (0.0017)	0.0079 (0.0024)	0.9388 (0.0076)	0.0056 (0.0003)	996
FP (k=10)	-0.4890	0.0054	0.0753 (0.0017)	0.0110 (0.0024)	0.9399 (0.0075)	0.0058 (0.0003)	999
FP (k=10000)	-0.4941	0.0041	0.0757 (0.0017)	0.0059 (0.0024)	0.9020 (0.0094)	0.0058 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4771	0.0051	0.0727 (0.0016)	0.0229 (0.0023)	0.9230 (0.0084)	0.0058 (0.0003)	1000
Exp	-0.4968	0.0053	0.0742 (0.0017)	0.0032 (0.0024)	0.9448 (0.0072)	0.0055 (0.0002)	996
Weibull	-0.4948	0.0054	0.0748 (0.0017)	0.0052 (0.0024)	0.9459 (0.0072)	0.0056 (0.0003)	998
Gompertz	-0.4921	0.0055	0.0727 (0.0024)	0.0079 (0.0034)	0.9575 (0.0093)	0.0053 (0.0003)	471
RP (3)	-0.4994	0.0056	0.0765 (0.0017)	0.0006 (0.0024)	0.9480 (0.0070)	0.0059 (0.0003)	1000
RP (5)	-0.4995	0.0056	0.0766 (0.0017)	0.0005 (0.0024)	0.9470 (0.0071)	0.0059 (0.0003)	1000
RP (9)	-0.4996	0.0056	0.0766 (0.0017)	0.0004 (0.0024)	0.9480 (0.0070)	0.0059 (0.0003)	1000
RP (P)	-0.5000	0.0056	0.0763 (0.0017)	-0.0000 (0.0024)	0.9460 (0.0071)	0.0058 (0.0003)	1000
FP (W)	-0.5011	0.0056	0.0760 (0.0017)	-0.0011 (0.0024)	0.9459 (0.0072)	0.0058 (0.0003)	980
FP (k=10)	-0.4964	0.0056	0.0765 (0.0017)	0.0036 (0.0024)	0.9460 (0.0071)	0.0059 (0.0003)	1000
FP (k=10000)	-0.4981	0.0043	0.0762 (0.0017)	0.0019 (0.0024)	0.9100 (0.0090)	0.0058 (0.0003)	1000

Table 22: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4856	0.0056	0.0789 (0.0018)	0.0144 (0.0025)	0.9279 (0.0082)	0.0064 (0.0003)	998
Exp	-0.6016	0.0067	0.0969 (0.0022)	-0.1016 (0.0031)	0.7370 (0.0139)	0.0197 (0.0007)	1000
Weibull	-0.4889	0.0057	0.0791 (0.0018)	0.0111 (0.0025)	0.9360 (0.0077)	0.0064 (0.0003)	1000
Gompertz	-0.6005	0.0070	0.0994 (0.0034)	-0.1005 (0.0048)	0.7500 (0.0208)	0.0200 (0.0012)	432
RP (3)	-0.4863	0.0058	0.0789 (0.0018)	0.0137 (0.0025)	0.9340 (0.0079)	0.0064 (0.0003)	1000
RP (5)	-0.4865	0.0058	0.0789 (0.0018)	0.0135 (0.0025)	0.9330 (0.0079)	0.0064 (0.0003)	1000
RP (9)	-0.4866	0.0058	0.0790 (0.0018)	0.0134 (0.0025)	0.9340 (0.0079)	0.0064 (0.0003)	1000
RP (P)	-0.4875	0.0057	0.0791 (0.0018)	0.0125 (0.0025)	0.9320 (0.0080)	0.0064 (0.0003)	1000
FP (W)	-0.4892	0.0057	0.0794 (0.0018)	0.0108 (0.0025)	0.9351 (0.0078)	0.0064 (0.0003)	986
FP (k=10)	-0.4818	0.0058	0.0806 (0.0018)	0.0182 (0.0025)	0.9250 (0.0083)	0.0068 (0.0003)	1000
FP (k=10000)	-0.5287	0.0047	0.0865 (0.0019)	-0.0287 (0.0027)	0.8520 (0.0112)	0.0083 (0.0004)	1000
Model frailty: Normal							
Cox	-0.4707	0.0054	0.0760 (0.0017)	0.0293 (0.0024)	0.9190 (0.0086)	0.0066 (0.0003)	1000
Exp	-0.5891	0.0068	0.0947 (0.0021)	-0.0891 (0.0030)	0.7815 (0.0131)	0.0169 (0.0007)	993
Weibull	-0.4923	0.0058	0.0795 (0.0018)	0.0077 (0.0025)	0.9398 (0.0075)	0.0064 (0.0003)	996
Gompertz	-0.5839	0.0070	0.0995 (0.0042)	-0.0839 (0.0059)	0.7979 (0.0239)	0.0169 (0.0014)	282
RP (3)	-0.4938	0.0060	0.0801 (0.0018)	0.0062 (0.0025)	0.9390 (0.0076)	0.0064 (0.0003)	1000
RP (5)	-0.4938	0.0060	0.0800 (0.0018)	0.0062 (0.0025)	0.9380 (0.0076)	0.0064 (0.0003)	1000
RP (9)	-0.4939	0.0060	0.0801 (0.0018)	0.0061 (0.0025)	0.9380 (0.0076)	0.0064 (0.0003)	1000
RP (P)	-0.4953	0.0060	0.0803 (0.0018)	0.0047 (0.0025)	0.9390 (0.0076)	0.0065 (0.0003)	1000
FP (W)	-0.4965	0.0060	0.0809 (0.0018)	0.0035 (0.0026)	0.9382 (0.0077)	0.0066 (0.0003)	971
FP (k=10)	-0.4956	0.0061	0.0823 (0.0018)	0.0044 (0.0026)	0.9359 (0.0077)	0.0068 (0.0003)	999
FP (k=10000)	-0.5378	0.0053	0.0872 (0.0020)	-0.0378 (0.0028)	0.8607 (0.0110)	0.0090 (0.0004)	991

Table 23: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4950	0.0048	0.0719 (0.0016)	0.0050 (0.0023)	0.9449 (0.0072)	0.0052 (0.0002)	998
Exp	-0.4195	0.0041	0.0599 (0.0013)	0.0805 (0.0019)	0.7580 (0.0135)	0.0101 (0.0003)	1000
Weibull	-0.4570	0.0046	0.0659 (0.0015)	0.0430 (0.0021)	0.8980 (0.0096)	0.0062 (0.0003)	1000
Gompertz	-0.4217	0.0043	0.0633 (0.0017)	0.0783 (0.0024)	0.7664 (0.0163)	0.0101 (0.0004)	672
RP (3)	-0.4945	0.0050	0.0720 (0.0016)	0.0055 (0.0023)	0.9470 (0.0071)	0.0052 (0.0002)	1000
RP (5)	-0.4958	0.0050	0.0721 (0.0016)	0.0042 (0.0023)	0.9480 (0.0070)	0.0052 (0.0002)	1000
RP (9)	-0.4961	0.0050	0.0721 (0.0016)	0.0039 (0.0023)	0.9470 (0.0071)	0.0052 (0.0002)	1000
RP (P)	-0.4893	0.0049	0.0713 (0.0016)	0.0107 (0.0023)	0.9480 (0.0070)	0.0052 (0.0002)	1000
FP (W)	-0.4570	0.0046	0.0659 (0.0015)	0.0430 (0.0021)	0.8980 (0.0096)	0.0062 (0.0003)	1000
FP (k=10)	-0.4922	0.0050	0.0718 (0.0016)	0.0078 (0.0023)	0.9470 (0.0071)	0.0052 (0.0002)	1000
FP (k=10000)	-0.4904	0.0036	0.0713 (0.0016)	0.0096 (0.0023)	0.8949 (0.0097)	0.0052 (0.0002)	999
Model frailty: Normal							
Cox	-0.4830	0.0047	0.0699 (0.0016)	0.0170 (0.0022)	0.9320 (0.0080)	0.0052 (0.0002)	1000
Exp	-0.4190	0.0041	0.0599 (0.0013)	0.0810 (0.0019)	0.7575 (0.0136)	0.0101 (0.0003)	998
Weibull	-0.4663	0.0047	0.0670 (0.0015)	0.0337 (0.0021)	0.9249 (0.0083)	0.0056 (0.0002)	999
Gompertz	-0.4198	0.0043	0.0624 (0.0018)	0.0802 (0.0025)	0.7524 (0.0172)	0.0103 (0.0004)	630
RP (3)	-0.5030	0.0052	0.0732 (0.0016)	-0.0030 (0.0023)	0.9430 (0.0073)	0.0054 (0.0002)	1000
RP (5)	-0.5037	0.0052	0.0733 (0.0016)	-0.0037 (0.0023)	0.9460 (0.0071)	0.0054 (0.0002)	1000
RP (9)	-0.5039	0.0052	0.0733 (0.0016)	-0.0039 (0.0023)	0.9450 (0.0072)	0.0054 (0.0002)	1000
RP (P)	-0.4977	0.0051	0.0726 (0.0016)	0.0023 (0.0023)	0.9490 (0.0070)	0.0053 (0.0002)	1000
FP (W)	-0.4694	0.0048	0.0678 (0.0015)	0.0306 (0.0021)	0.9280 (0.0082)	0.0055 (0.0002)	1000
FP (k=10)	-0.5012	0.0052	0.0733 (0.0016)	-0.0012 (0.0023)	0.9460 (0.0071)	0.0054 (0.0002)	1000
FP (k=10000)	-0.5012	0.0037	0.0729 (0.0016)	-0.0012 (0.0023)	0.9010 (0.0094)	0.0053 (0.0002)	1000

Table 24: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4926	0.0049	0.0699 (0.0016)	0.0074 (0.0022)	0.9409 (0.0075)	0.0049 (0.0002)	999
Exp	-0.3590	0.0036	0.0518 (0.0012)	0.1410 (0.0016)	0.3190 (0.0147)	0.0226 (0.0005)	1000
Weibull	-0.5299	0.0054	0.0747 (0.0017)	-0.0299 (0.0024)	0.9290 (0.0081)	0.0065 (0.0003)	1000
Gompertz	-0.4703	0.0049	0.0666 (0.0015)	0.0297 (0.0021)	0.9329 (0.0079)	0.0053 (0.0002)	998
RP (3)	-0.4947	0.0051	0.0702 (0.0016)	0.0053 (0.0022)	0.9420 (0.0074)	0.0050 (0.0002)	1000
RP (5)	-0.4935	0.0051	0.0699 (0.0016)	0.0065 (0.0022)	0.9430 (0.0073)	0.0049 (0.0002)	1000
RP (9)	-0.4938	0.0051	0.0700 (0.0016)	0.0062 (0.0022)	0.9430 (0.0073)	0.0049 (0.0002)	1000
RP (P)	-0.4952	0.0051	0.0702 (0.0016)	0.0048 (0.0022)	0.9440 (0.0073)	0.0049 (0.0002)	1000
FP (W)	-0.5300	0.0054	0.0746 (0.0017)	-0.0300 (0.0024)	0.9289 (0.0081)	0.0065 (0.0003)	999
FP (k=10)	-0.4763	0.0051	0.0708 (0.0016)	0.0237 (0.0022)	0.9340 (0.0079)	0.0056 (0.0003)	1000
FP (k=10000)	-0.5837	0.0044	0.0850 (0.0019)	-0.0837 (0.0027)	0.6861 (0.0147)	0.0142 (0.0006)	994
Model frailty: Normal							
Cox	-0.4801	0.0048	0.0677 (0.0015)	0.0199 (0.0021)	0.9360 (0.0077)	0.0050 (0.0002)	1000
Exp	-0.3579	0.0036	0.0518 (0.0012)	0.1421 (0.0016)	0.3070 (0.0146)	0.0229 (0.0005)	1000
Weibull	-0.5254	0.0054	0.0733 (0.0016)	-0.0254 (0.0023)	0.9368 (0.0077)	0.0060 (0.0003)	997
Gompertz	-0.4520	0.0047	0.0639 (0.0014)	0.0480 (0.0020)	0.9106 (0.0090)	0.0064 (0.0003)	995
RP (3)	-0.5021	0.0053	0.0707 (0.0016)	-0.0021 (0.0022)	0.9480 (0.0070)	0.0050 (0.0002)	1000
RP (5)	-0.5012	0.0053	0.0706 (0.0016)	-0.0012 (0.0022)	0.9470 (0.0071)	0.0050 (0.0002)	1000
RP (9)	-0.5014	0.0053	0.0707 (0.0016)	-0.0014 (0.0022)	0.9470 (0.0071)	0.0050 (0.0002)	1000
RP (P)	-0.5015	0.0053	0.0706 (0.0016)	-0.0015 (0.0022)	0.9500 (0.0069)	0.0050 (0.0002)	1000
FP (W)	-0.5342	0.0056	0.0750 (0.0018)	-0.0342 (0.0025)	0.9247 (0.0089)	0.0068 (0.0003)	876
FP (k=10)	-0.4892	0.0053	0.0710 (0.0016)	0.0108 (0.0022)	0.9430 (0.0073)	0.0052 (0.0002)	1000
FP (k=10000)	-0.6019	0.0044	0.0866 (0.0019)	-0.1019 (0.0027)	0.6140 (0.0154)	0.0179 (0.0007)	1000

Table 25: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4923	0.0054	0.0753 (0.0017)	0.0077 (0.0024)	0.9399 (0.0075)	0.0057 (0.0002)	998
Exp	-0.5429	0.0058	0.0812 (0.0018)	-0.0429 (0.0026)	0.8940 (0.0097)	0.0084 (0.0004)	1000
Weibull	-0.4951	0.0055	0.0747 (0.0017)	0.0049 (0.0024)	0.9480 (0.0070)	0.0056 (0.0002)	1000
Gompertz	-0.5374	0.0060	0.0809 (0.0027)	-0.0374 (0.0038)	0.9163 (0.0130)	0.0079 (0.0005)	454
RP (3)	-0.4926	0.0055	0.0751 (0.0017)	0.0074 (0.0024)	0.9440 (0.0073)	0.0057 (0.0002)	1000
RP (5)	-0.4933	0.0055	0.0753 (0.0017)	0.0067 (0.0024)	0.9440 (0.0073)	0.0057 (0.0002)	1000
RP (9)	-0.4935	0.0055	0.0754 (0.0017)	0.0065 (0.0024)	0.9460 (0.0071)	0.0057 (0.0002)	1000
RP (P)	-0.4936	0.0055	0.0752 (0.0017)	0.0064 (0.0024)	0.9470 (0.0071)	0.0057 (0.0002)	1000
FP (W)	-0.4956	0.0055	0.0746 (0.0017)	0.0044 (0.0024)	0.9484 (0.0070)	0.0056 (0.0002)	989
FP (k=10)	-0.4901	0.0056	0.0756 (0.0017)	0.0099 (0.0024)	0.9420 (0.0074)	0.0058 (0.0003)	1000
FP (k=10000)	-0.4916	0.0042	0.0746 (0.0017)	0.0084 (0.0024)	0.9069 (0.0092)	0.0056 (0.0002)	999
Model frailty: Normal							
Cox	-0.4783	0.0052	0.0728 (0.0016)	0.0217 (0.0023)	0.9390 (0.0076)	0.0058 (0.0002)	1000
Exp	-0.5364	0.0058	0.0802 (0.0018)	-0.0364 (0.0025)	0.9095 (0.0091)	0.0078 (0.0003)	994
Weibull	-0.4964	0.0056	0.0748 (0.0017)	0.0036 (0.0024)	0.9467 (0.0071)	0.0056 (0.0002)	995
Gompertz	-0.5306	0.0060	0.0798 (0.0029)	-0.0306 (0.0041)	0.9235 (0.0137)	0.0073 (0.0005)	379
RP (3)	-0.5001	0.0057	0.0766 (0.0017)	-0.0001 (0.0024)	0.9430 (0.0073)	0.0059 (0.0003)	1000
RP (5)	-0.5009	0.0057	0.0768 (0.0017)	-0.0009 (0.0024)	0.9420 (0.0074)	0.0059 (0.0003)	1000
RP (9)	-0.5012	0.0057	0.0768 (0.0017)	-0.0012 (0.0024)	0.9410 (0.0075)	0.0059 (0.0003)	1000
RP (P)	-0.5005	0.0057	0.0766 (0.0017)	-0.0005 (0.0024)	0.9430 (0.0073)	0.0059 (0.0003)	1000
FP (W)	-0.5010	0.0057	0.0761 (0.0017)	-0.0010 (0.0024)	0.9459 (0.0072)	0.0058 (0.0003)	979
FP (k=10)	-0.4999	0.0058	0.0775 (0.0017)	0.0001 (0.0024)	0.9410 (0.0075)	0.0060 (0.0003)	1000
FP (k=10000)	-0.4956	0.0045	0.0754 (0.0017)	0.0044 (0.0024)	0.9130 (0.0089)	0.0057 (0.0002)	1000

Table 26: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5196	0.0110	0.1067 (0.0024)	-0.0196 (0.0034)	0.9486 (0.0070)	0.0117 (0.0005)	993
Exp	-0.5088	0.0107	0.1035 (0.0023)	-0.0088 (0.0033)	0.9540 (0.0066)	0.0108 (0.0005)	1000
Weibull	-0.5358	0.0114	0.1107 (0.0025)	-0.0358 (0.0035)	0.9340 (0.0079)	0.0135 (0.0006)	1000
Gompertz	-0.4700	0.0108	0.0912 (0.0109)	0.0300 (0.0152)	0.9444 (0.0382)	0.0090 (0.0022)	36
RP (3)	-0.5228	0.0112	0.1077 (0.0024)	-0.0228 (0.0034)	0.9480 (0.0070)	0.0121 (0.0005)	1000
RP (5)	-0.5233	0.0112	0.1076 (0.0024)	-0.0233 (0.0034)	0.9490 (0.0070)	0.0121 (0.0005)	1000
RP (9)	-0.5233	0.0112	0.1076 (0.0024)	-0.0233 (0.0034)	0.9470 (0.0071)	0.0121 (0.0005)	1000
RP (P)	-0.5220	0.0112	0.1073 (0.0024)	-0.0220 (0.0034)	0.9480 (0.0070)	0.0120 (0.0005)	1000
FP (W)	-0.5358	0.0114	0.1107 (0.0025)	-0.0358 (0.0035)	0.9340 (0.0079)	0.0135 (0.0006)	1000
FP (k=10)	-0.4818	0.0103	0.1000 (0.0022)	0.0182 (0.0032)	0.9570 (0.0064)	0.0103 (0.0005)	1000
FP (k=10000)	-0.4438	0.0082	0.0920 (0.0032)	0.0562 (0.0045)	0.9175 (0.0136)	0.0116 (0.0008)	412
Model frailty: Normal							
Cox	-0.4403	0.0105	0.0955 (0.0021)	0.0597 (0.0030)	0.9259 (0.0083)	0.0127 (0.0005)	998
Exp	-0.4751	0.0113	0.1036 (0.0024)	0.0249 (0.0034)	0.9625 (0.0062)	0.0113 (0.0005)	933
Weibull	-0.4884	0.0118	0.1092 (0.0026)	0.0116 (0.0036)	0.9553 (0.0068)	0.0120 (0.0006)	917
Gompertz	-0.3753	0.0114	0.0548 (0.0158)	0.1247 (0.0207)	1.0000 (0.0000)	0.0181 (0.0045)	7
RP (3)	-0.4848	0.0113	0.1067 (0.0024)	0.0152 (0.0034)	0.9550 (0.0066)	0.0116 (0.0005)	1000
RP (5)	-0.4852	0.0113	0.1069 (0.0024)	0.0148 (0.0034)	0.9550 (0.0066)	0.0116 (0.0005)	1000
RP (9)	-0.4852	0.0113	0.1069 (0.0024)	0.0148 (0.0034)	0.9540 (0.0066)	0.0116 (0.0005)	1000
RP (P)	-0.4849	0.0113	0.1065 (0.0024)	0.0151 (0.0034)	0.9560 (0.0065)	0.0116 (0.0005)	1000
FP (W)	-0.4774	0.0115	0.1058 (0.0024)	0.0226 (0.0034)	0.9574 (0.0064)	0.0117 (0.0005)	985
FP (k=10)	-0.3876	0.0101	0.0889 (0.0020)	0.1124 (0.0028)	0.8258 (0.0120)	0.0205 (0.0007)	999
FP (k=10000)	-0.4280	0.0091	0.0946 (0.0021)	0.0720 (0.0030)	0.8829 (0.0102)	0.0141 (0.0006)	999

Table 27: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5163	0.0115	0.1093 (0.0025)	-0.0163 (0.0035)	0.9394 (0.0076)	0.0122 (0.0006)	990
Exp	-0.6025	0.0125	0.1259 (0.0028)	-0.1025 (0.0040)	0.8290 (0.0119)	0.0263 (0.0011)	1000
Weibull	-0.5473	0.0122	0.1156 (0.0026)	-0.0473 (0.0037)	0.9170 (0.0087)	0.0156 (0.0007)	1000
Gompertz	-0.5002	0.0132	0.0854 (0.0604)	-0.0002 (0.0604)	1.0000 (0.0000)	0.0036 (0.0000)	2
RP (3)	-0.5247	0.0118	0.1114 (0.0025)	-0.0247 (0.0035)	0.9380 (0.0076)	0.0130 (0.0006)	1000
RP (5)	-0.5247	0.0118	0.1108 (0.0025)	-0.0247 (0.0035)	0.9390 (0.0076)	0.0129 (0.0006)	1000
RP (9)	-0.5236	0.0118	0.1108 (0.0025)	-0.0236 (0.0035)	0.9409 (0.0075)	0.0128 (0.0006)	998
RP (P)	-0.5230	0.0118	0.1106 (0.0025)	-0.0230 (0.0035)	0.9420 (0.0074)	0.0127 (0.0006)	1000
FP (W)	-0.5473	0.0122	0.1156 (0.0026)	-0.0473 (0.0037)	0.9170 (0.0087)	0.0156 (0.0007)	1000
FP (k=10)	-0.5718	0.0116	0.1205 (0.0027)	-0.0718 (0.0038)	0.8760 (0.0104)	0.0197 (0.0009)	1000
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	-0.4313	0.0109	0.0966 (0.0022)	0.0687 (0.0031)	0.9204 (0.0086)	0.0141 (0.0006)	980
Exp	-0.5519	0.0131	0.1242 (0.0030)	-0.0519 (0.0042)	0.9007 (0.0100)	0.0181 (0.0009)	886
Weibull	-0.4902	0.0125	0.1089 (0.0026)	0.0098 (0.0037)	0.9517 (0.0073)	0.0119 (0.0006)	870
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.4766	0.0118	0.1083 (0.0024)	0.0234 (0.0034)	0.9510 (0.0068)	0.0123 (0.0006)	1000
RP (5)	-0.4817	0.0119	0.1083 (0.0024)	0.0183 (0.0034)	0.9480 (0.0070)	0.0121 (0.0006)	1000
RP (9)	-0.4809	0.0119	0.1084 (0.0024)	0.0191 (0.0034)	0.9490 (0.0070)	0.0121 (0.0006)	1000
RP (P)	-0.4808	0.0118	0.1082 (0.0024)	0.0192 (0.0034)	0.9500 (0.0069)	0.0121 (0.0006)	1000
FP (W)	-0.4764	0.0121	0.1063 (0.0024)	0.0236 (0.0034)	0.9540 (0.0066)	0.0118 (0.0006)	999
FP (k=10)	-0.4098	0.0112	0.1003 (0.0022)	0.0902 (0.0032)	0.8800 (0.0103)	0.0182 (0.0007)	1000
FP (k=10000)	-0.4833	0.0099	0.1085 (0.0024)	0.0167 (0.0034)	0.9260 (0.0083)	0.0120 (0.0006)	1000

Table 28: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5064	0.0099	0.1027 (0.0023)	-0.0064 (0.0033)	0.9418 (0.0074)	0.0106 (0.0005)	997
Exp	-0.4831	0.0096	0.0957 (0.0021)	0.0169 (0.0030)	0.9590 (0.0063)	0.0094 (0.0004)	1000
Weibull	-0.5181	0.0102	0.1044 (0.0023)	-0.0181 (0.0033)	0.9360 (0.0077)	0.0112 (0.0005)	1000
Gompertz	-0.4908	0.0096	0.0837 (0.0101)	0.0092 (0.0141)	0.9714 (0.0282)	0.0069 (0.0015)	35
RP (3)	-0.5105	0.0102	0.1035 (0.0023)	-0.0105 (0.0033)	0.9460 (0.0071)	0.0108 (0.0005)	1000
RP (5)	-0.5092	0.0101	0.1033 (0.0023)	-0.0092 (0.0033)	0.9460 (0.0071)	0.0107 (0.0005)	1000
RP (9)	-0.5099	0.0101	0.1034 (0.0023)	-0.0099 (0.0033)	0.9430 (0.0073)	0.0108 (0.0005)	1000
RP (P)	-0.5083	0.0101	0.1031 (0.0023)	-0.0083 (0.0033)	0.9450 (0.0072)	0.0107 (0.0005)	1000
FP (W)	-0.5181	0.0102	0.1044 (0.0023)	-0.0181 (0.0033)	0.9360 (0.0077)	0.0112 (0.0005)	1000
FP (k=10)	-0.4788	0.0095	0.0978 (0.0022)	0.0212 (0.0031)	0.9545 (0.0066)	0.0100 (0.0004)	990
FP (k=10000)	-0.4528	0.0074	0.0805 (0.0134)	0.0472 (0.0185)	0.9474 (0.0512)	0.0084 (0.0031)	19
Model frailty: Normal							
Cox	-0.4462	0.0096	0.0935 (0.0021)	0.0538 (0.0030)	0.9319 (0.0080)	0.0116 (0.0005)	999
Exp	-0.4565	0.0100	0.0952 (0.0022)	0.0435 (0.0031)	0.9430 (0.0076)	0.0110 (0.0005)	930
Weibull	-0.4845	0.0107	0.1014 (0.0024)	0.0155 (0.0034)	0.9617 (0.0064)	0.0105 (0.0005)	913
Gompertz	-0.4789	0.0100	0.1067 (0.0218)	0.0211 (0.0296)	0.9231 (0.0739)	0.0110 (0.0036)	13
RP (3)	-0.4852	0.0104	0.1019 (0.0023)	0.0148 (0.0032)	0.9570 (0.0064)	0.0106 (0.0005)	1000
RP (5)	-0.4846	0.0103	0.1018 (0.0023)	0.0154 (0.0032)	0.9570 (0.0064)	0.0106 (0.0005)	1000
RP (9)	-0.4856	0.0103	0.1020 (0.0023)	0.0144 (0.0032)	0.9600 (0.0062)	0.0106 (0.0005)	1000
RP (P)	-0.4854	0.0103	0.1020 (0.0023)	0.0146 (0.0032)	0.9580 (0.0063)	0.0106 (0.0005)	1000
FP (W)	-0.4828	0.0106	0.1007 (0.0023)	0.0172 (0.0032)	0.9601 (0.0063)	0.0104 (0.0005)	977
FP (k=10)	-0.3953	0.0093	0.0861 (0.0019)	0.1047 (0.0027)	0.8297 (0.0119)	0.0184 (0.0006)	998
FP (k=10000)	-0.4332	0.0083	0.0901 (0.0020)	0.0668 (0.0029)	0.8899 (0.0099)	0.0126 (0.0005)	999

Table 29: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5088	0.0102	0.1013 (0.0023)	-0.0088 (0.0032)	0.9540 (0.0066)	0.0103 (0.0005)	999
Exp	-0.3224	0.0081	0.0670 (0.0015)	0.1776 (0.0021)	0.5050 (0.0158)	0.0360 (0.0008)	1000
Weibull	-0.5077	0.0105	0.1023 (0.0023)	-0.0077 (0.0032)	0.9500 (0.0069)	0.0105 (0.0005)	1000
Gompertz	-0.3235	0.0082	0.0684 (0.0026)	0.1765 (0.0036)	0.5265 (0.0264)	0.0358 (0.0014)	359
RP (3)	-0.5088	0.0104	0.1014 (0.0025)	-0.0088 (0.0035)	0.9512 (0.0075)	0.0103 (0.0005)	819
RP (5)	-0.5105	0.0104	0.1018 (0.0023)	-0.0105 (0.0032)	0.9520 (0.0068)	0.0105 (0.0005)	1000
RP (9)	-0.5114	0.0104	0.1017 (0.0023)	-0.0114 (0.0032)	0.9520 (0.0068)	0.0105 (0.0005)	1000
RP (P)	-0.5057	0.0103	0.1007 (0.0023)	-0.0057 (0.0032)	0.9560 (0.0065)	0.0102 (0.0004)	1000
FP (W)	-0.5075	0.0105	0.1022 (0.0023)	-0.0075 (0.0032)	0.9509 (0.0068)	0.0105 (0.0005)	998
FP (k=10)	-0.5388	0.0093	0.1513 (0.0035)	-0.0388 (0.0049)	0.7698 (0.0136)	0.0244 (0.0011)	960
FP (k=10000)	-0.3149	0.0064	0.0627 (0.0027)	0.1851 (0.0038)	0.3358 (0.0288)	0.0382 (0.0014)	268
Model frailty: Normal							
Cox	-0.4418	0.0099	0.0921 (0.0021)	0.0582 (0.0029)	0.9230 (0.0084)	0.0119 (0.0005)	1000
Exp	-0.3100	0.0085	0.0700 (0.0016)	0.1900 (0.0023)	0.4572 (0.0162)	0.0410 (0.0009)	947
Weibull	-0.4698	0.0109	0.1010 (0.0024)	0.0302 (0.0033)	0.9489 (0.0073)	0.0111 (0.0005)	919
Gompertz	-0.3154	0.0085	0.0708 (0.0037)	0.1846 (0.0052)	0.4863 (0.0369)	0.0390 (0.0020)	183
RP (3)	-0.4344	0.0102	0.1438 (0.0032)	0.0656 (0.0046)	0.8136 (0.0124)	0.0250 (0.0013)	987
RP (5)	-0.4803	0.0106	0.1011 (0.0023)	0.0197 (0.0032)	0.9520 (0.0068)	0.0106 (0.0005)	1000
RP (9)	-0.4816	0.0106	0.1011 (0.0023)	0.0184 (0.0032)	0.9550 (0.0066)	0.0106 (0.0005)	1000
RP (P)	-0.4763	0.0105	0.1001 (0.0022)	0.0237 (0.0032)	0.9510 (0.0068)	0.0106 (0.0005)	1000
FP (W)	-0.4612	0.0107	0.0985 (0.0022)	0.0388 (0.0032)	0.9432 (0.0074)	0.0112 (0.0005)	969
FP (k=10)	-0.3328	0.0098	0.0899 (0.0021)	0.1672 (0.0029)	0.6133 (0.0158)	0.0360 (0.0011)	944
FP (k=10000)	-0.2929	0.0072	0.0673 (0.0015)	0.2071 (0.0021)	0.2635 (0.0139)	0.0474 (0.0009)	998

Table 30: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5114	0.0112	0.1068 (0.0024)	-0.0114 (0.0034)	0.9477 (0.0071)	0.0115 (0.0005)	994
Exp	-0.5746	0.0119	0.1187 (0.0027)	-0.0746 (0.0038)	0.8740 (0.0105)	0.0196 (0.0008)	1000
Weibull	-0.5276	0.0116	0.1109 (0.0025)	-0.0276 (0.0035)	0.9400 (0.0075)	0.0131 (0.0006)	1000
Gompertz	-0.5468	0.0117	0.1278 (0.0242)	-0.0468 (0.0330)	0.8667 (0.0878)	0.0174 (0.0059)	15
RP (3)	-0.5174	0.0114	0.1091 (0.0024)	-0.0174 (0.0034)	0.9440 (0.0073)	0.0122 (0.0005)	1000
RP (5)	-0.5195	0.0115	0.1088 (0.0024)	-0.0195 (0.0034)	0.9450 (0.0072)	0.0122 (0.0005)	1000
RP (9)	-0.5185	0.0115	0.1087 (0.0024)	-0.0185 (0.0034)	0.9470 (0.0071)	0.0121 (0.0005)	1000
RP (P)	-0.5175	0.0114	0.1084 (0.0024)	-0.0175 (0.0034)	0.9480 (0.0070)	0.0121 (0.0005)	1000
FP (W)	-0.5276	0.0116	0.1109 (0.0025)	-0.0276 (0.0035)	0.9400 (0.0075)	0.0131 (0.0006)	1000
FP (k=10)	-0.5444	0.0111	0.1129 (0.0025)	-0.0444 (0.0036)	0.9120 (0.0090)	0.0147 (0.0006)	1000
FP (k=10000)	-0.4362	0.0089	0.0909 (0.0117)	0.0638 (0.0163)	0.8710 (0.0602)	0.0121 (0.0030)	31
Model frailty: Normal							
Cox	-0.4305	0.0107	0.0963 (0.0022)	0.0695 (0.0031)	0.9048 (0.0093)	0.0141 (0.0006)	987
Exp	-0.5267	0.0125	0.1176 (0.0027)	-0.0267 (0.0039)	0.9283 (0.0085)	0.0145 (0.0007)	921
Weibull	-0.4776	0.0120	0.1082 (0.0026)	0.0224 (0.0036)	0.9463 (0.0075)	0.0122 (0.0006)	894
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.4734	0.0115	0.1081 (0.0024)	0.0266 (0.0034)	0.9380 (0.0076)	0.0124 (0.0005)	1000
RP (5)	-0.4789	0.0115	0.1085 (0.0024)	0.0211 (0.0034)	0.9450 (0.0072)	0.0122 (0.0005)	1000
RP (9)	-0.4782	0.0115	0.1084 (0.0024)	0.0218 (0.0034)	0.9430 (0.0073)	0.0122 (0.0005)	1000
RP (P)	-0.4779	0.0115	0.1082 (0.0024)	0.0221 (0.0034)	0.9430 (0.0073)	0.0122 (0.0005)	1000
FP (W)	-0.4692	0.0118	0.1060 (0.0024)	0.0308 (0.0034)	0.9381 (0.0077)	0.0122 (0.0005)	986
FP (k=10)	-0.4217	0.0108	0.0982 (0.0022)	0.0783 (0.0031)	0.8905 (0.0099)	0.0158 (0.0006)	995
FP (k=10000)	-0.4675	0.0096	0.1043 (0.0023)	0.0325 (0.0033)	0.9149 (0.0088)	0.0119 (0.0005)	999

Table 31: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4990	0.0074	0.0866 (0.0019)	0.0010 (0.0027)	0.9470 (0.0071)	0.0075 (0.0003)	1000
Exp	-0.4997	0.0073	0.0859 (0.0019)	0.0003 (0.0027)	0.9440 (0.0073)	0.0074 (0.0003)	1000
Weibull	-0.5007	0.0075	0.0868 (0.0019)	-0.0007 (0.0027)	0.9470 (0.0071)	0.0075 (0.0003)	1000
Gompertz	-0.5004	0.0075	0.0871 (0.0030)	-0.0004 (0.0042)	0.9495 (0.0105)	0.0076 (0.0005)	436
RP (3)	-0.4999	0.0076	0.0868 (0.0019)	0.0001 (0.0027)	0.9470 (0.0071)	0.0075 (0.0003)	1000
RP (5)	-0.5000	0.0076	0.0868 (0.0019)	-0.0000 (0.0027)	0.9470 (0.0071)	0.0075 (0.0003)	1000
RP (9)	-0.5001	0.0076	0.0868 (0.0019)	-0.0001 (0.0027)	0.9470 (0.0071)	0.0075 (0.0003)	1000
RP (P)	-0.5003	0.0076	0.0867 (0.0019)	-0.0003 (0.0027)	0.9500 (0.0069)	0.0075 (0.0003)	1000
FP (W)	-0.5004	0.0075	0.0865 (0.0019)	-0.0004 (0.0027)	0.9479 (0.0070)	0.0075 (0.0003)	998
FP (k=10)	-0.4953	0.0076	0.0869 (0.0020)	0.0047 (0.0028)	0.9474 (0.0071)	0.0076 (0.0003)	988
FP (k=10000)	-0.4980	0.0058	0.0864 (0.0019)	0.0020 (0.0027)	0.9110 (0.0090)	0.0075 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4675	0.0070	0.0817 (0.0018)	0.0325 (0.0026)	0.9260 (0.0083)	0.0077 (0.0003)	1000
Exp	-0.4814	0.0073	0.0838 (0.0019)	0.0186 (0.0027)	0.9398 (0.0075)	0.0074 (0.0003)	996
Weibull	-0.4858	0.0075	0.0851 (0.0019)	0.0142 (0.0027)	0.9487 (0.0070)	0.0074 (0.0003)	995
Gompertz	-0.4788	0.0074	0.0821 (0.0033)	0.0212 (0.0047)	0.9385 (0.0137)	0.0072 (0.0006)	309
RP (3)	-0.4970	0.0078	0.0872 (0.0020)	0.0030 (0.0028)	0.9540 (0.0066)	0.0076 (0.0003)	1000
RP (5)	-0.4970	0.0078	0.0872 (0.0020)	0.0030 (0.0028)	0.9560 (0.0065)	0.0076 (0.0003)	1000
RP (9)	-0.4970	0.0078	0.0872 (0.0020)	0.0030 (0.0028)	0.9540 (0.0066)	0.0076 (0.0003)	1000
RP (P)	-0.4983	0.0078	0.0874 (0.0020)	0.0017 (0.0028)	0.9550 (0.0066)	0.0076 (0.0003)	1000
FP (W)	-0.5004	0.0078	0.0874 (0.0020)	-0.0004 (0.0028)	0.9553 (0.0066)	0.0076 (0.0003)	985
FP (k=10)	-0.4923	0.0078	0.0871 (0.0020)	0.0077 (0.0028)	0.9539 (0.0066)	0.0076 (0.0003)	998
FP (k=10000)	-0.4886	0.0066	0.0857 (0.0019)	0.0114 (0.0027)	0.9227 (0.0085)	0.0075 (0.0003)	996

Table 32: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4978	0.0080	0.0920 (0.0021)	0.0022 (0.0029)	0.9378 (0.0077)	0.0085 (0.0004)	996
Exp	-0.5971	0.0092	0.1103 (0.0025)	-0.0971 (0.0035)	0.7960 (0.0127)	0.0216 (0.0009)	1000
Weibull	-0.5014	0.0082	0.0925 (0.0021)	-0.0014 (0.0029)	0.9360 (0.0077)	0.0086 (0.0004)	1000
Gompertz	-0.5942	0.0095	0.1121 (0.0040)	-0.0942 (0.0057)	0.8066 (0.0199)	0.0214 (0.0013)	393
RP (3)	-0.4986	0.0082	0.0920 (0.0021)	0.0014 (0.0029)	0.9380 (0.0076)	0.0085 (0.0004)	1000
RP (5)	-0.4988	0.0082	0.0921 (0.0021)	0.0012 (0.0029)	0.9380 (0.0076)	0.0085 (0.0004)	1000
RP (9)	-0.4989	0.0082	0.0921 (0.0021)	0.0011 (0.0029)	0.9380 (0.0076)	0.0085 (0.0004)	1000
RP (P)	-0.5002	0.0082	0.0923 (0.0021)	-0.0002 (0.0029)	0.9390 (0.0076)	0.0085 (0.0004)	1000
FP (W)	-0.5014	0.0082	0.0925 (0.0021)	-0.0014 (0.0029)	0.9370 (0.0077)	0.0086 (0.0004)	1000
FP (k=10)	-0.4929	0.0082	0.0935 (0.0021)	0.0071 (0.0030)	0.9410 (0.0075)	0.0088 (0.0004)	1000
FP (k=10000)	-0.5313	0.0067	0.0987 (0.0022)	-0.0313 (0.0031)	0.8740 (0.0105)	0.0107 (0.0005)	1000
Model frailty: Normal							
Cox	-0.4657	0.0076	0.0868 (0.0019)	0.0343 (0.0027)	0.9310 (0.0080)	0.0087 (0.0004)	1000
Exp	-0.5689	0.0091	0.1061 (0.0024)	-0.0689 (0.0034)	0.8673 (0.0108)	0.0160 (0.0007)	995
Weibull	-0.4887	0.0081	0.0912 (0.0020)	0.0113 (0.0029)	0.9487 (0.0070)	0.0084 (0.0004)	994
Gompertz	-0.5620	0.0093	0.1070 (0.0044)	-0.0620 (0.0062)	0.8605 (0.0202)	0.0153 (0.0012)	294
RP (3)	-0.4972	0.0084	0.0930 (0.0021)	0.0028 (0.0029)	0.9490 (0.0070)	0.0086 (0.0004)	1000
RP (5)	-0.4972	0.0084	0.0930 (0.0021)	0.0028 (0.0029)	0.9490 (0.0070)	0.0086 (0.0004)	1000
RP (9)	-0.4971	0.0084	0.0930 (0.0021)	0.0029 (0.0029)	0.9480 (0.0070)	0.0087 (0.0004)	1000
RP (P)	-0.4990	0.0084	0.0933 (0.0021)	0.0010 (0.0030)	0.9450 (0.0072)	0.0087 (0.0004)	1000
FP (W)	-0.5001	0.0085	0.0937 (0.0021)	-0.0001 (0.0030)	0.9435 (0.0074)	0.0088 (0.0004)	973
FP (k=10)	-0.4953	0.0086	0.0946 (0.0021)	0.0047 (0.0030)	0.9469 (0.0071)	0.0090 (0.0004)	998
FP (k=10000)	-0.5237	0.0080	0.0985 (0.0022)	-0.0237 (0.0031)	0.9129 (0.0089)	0.0103 (0.0005)	999

Table 33: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5009	0.0068	0.0824 (0.0018)	-0.0009 (0.0026)	0.9428 (0.0074)	0.0068 (0.0003)	996
Exp	-0.4192	0.0059	0.0677 (0.0015)	0.0808 (0.0021)	0.8430 (0.0115)	0.0111 (0.0004)	1000
Weibull	-0.4741	0.0066	0.0777 (0.0017)	0.0259 (0.0025)	0.9490 (0.0070)	0.0067 (0.0003)	1000
Gompertz	-0.4215	0.0060	0.0666 (0.0021)	0.0785 (0.0029)	0.8601 (0.0151)	0.0106 (0.0006)	529
RP (3)	-0.5015	0.0070	0.0823 (0.0018)	-0.0015 (0.0026)	0.9480 (0.0070)	0.0068 (0.0003)	1000
RP (5)	-0.5019	0.0070	0.0824 (0.0018)	-0.0019 (0.0026)	0.9460 (0.0071)	0.0068 (0.0003)	1000
RP (9)	-0.5021	0.0070	0.0825 (0.0018)	-0.0021 (0.0026)	0.9460 (0.0071)	0.0068 (0.0003)	1000
RP (P)	-0.4964	0.0069	0.0815 (0.0018)	0.0036 (0.0026)	0.9470 (0.0071)	0.0066 (0.0003)	1000
FP (W)	-0.4741	0.0066	0.0777 (0.0017)	0.0259 (0.0025)	0.9490 (0.0070)	0.0067 (0.0003)	1000
FP (k=10)	-0.4980	0.0069	0.0823 (0.0018)	0.0020 (0.0026)	0.9470 (0.0071)	0.0068 (0.0003)	1000
FP (k=10000)	-0.4978	0.0052	0.0817 (0.0018)	0.0022 (0.0026)	0.9210 (0.0085)	0.0067 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4692	0.0065	0.0776 (0.0017)	0.0308 (0.0025)	0.9430 (0.0073)	0.0070 (0.0003)	1000
Exp	-0.4070	0.0058	0.0669 (0.0015)	0.0930 (0.0021)	0.8018 (0.0126)	0.0131 (0.0004)	999
Weibull	-0.4627	0.0066	0.0764 (0.0017)	0.0373 (0.0024)	0.9446 (0.0073)	0.0072 (0.0003)	993
Gompertz	-0.4110	0.0059	0.0654 (0.0022)	0.0890 (0.0032)	0.8141 (0.0189)	0.0122 (0.0007)	425
RP (3)	-0.4953	0.0071	0.0820 (0.0018)	0.0047 (0.0026)	0.9500 (0.0069)	0.0067 (0.0003)	1000
RP (5)	-0.4955	0.0071	0.0821 (0.0018)	0.0045 (0.0026)	0.9500 (0.0069)	0.0067 (0.0003)	1000
RP (9)	-0.4955	0.0072	0.0821 (0.0018)	0.0045 (0.0026)	0.9500 (0.0069)	0.0068 (0.0003)	1000
RP (P)	-0.4906	0.0071	0.0812 (0.0018)	0.0094 (0.0026)	0.9510 (0.0068)	0.0067 (0.0003)	1000
FP (W)	-0.4765	0.0069	0.0790 (0.0018)	0.0235 (0.0025)	0.9502 (0.0069)	0.0068 (0.0003)	983
FP (k=10)	-0.4917	0.0072	0.0821 (0.0018)	0.0083 (0.0026)	0.9520 (0.0068)	0.0068 (0.0003)	1000
FP (k=10000)	-0.4927	0.0056	0.0816 (0.0018)	0.0073 (0.0026)	0.9188 (0.0086)	0.0067 (0.0003)	998

Table 34: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4997	0.0069	0.0868 (0.0019)	0.0003 (0.0027)	0.9438 (0.0073)	0.0075 (0.0003)	996
Exp	-0.3618	0.0055	0.0646 (0.0014)	0.1382 (0.0020)	0.5260 (0.0158)	0.0233 (0.0006)	1000
Weibull	-0.5282	0.0074	0.0914 (0.0020)	-0.0282 (0.0029)	0.9250 (0.0083)	0.0091 (0.0004)	1000
Gompertz	-0.3598	0.0056	0.0649 (0.0018)	0.1402 (0.0026)	0.5276 (0.0198)	0.0239 (0.0007)	633
RP (3)	-0.5022	0.0071	0.0872 (0.0020)	-0.0022 (0.0028)	0.9440 (0.0073)	0.0076 (0.0003)	1000
RP (5)	-0.5007	0.0071	0.0870 (0.0019)	-0.0007 (0.0028)	0.9460 (0.0071)	0.0076 (0.0003)	1000
RP (9)	-0.5008	0.0071	0.0871 (0.0019)	-0.0008 (0.0028)	0.9470 (0.0071)	0.0076 (0.0003)	1000
RP (P)	-0.5012	0.0071	0.0874 (0.0020)	-0.0012 (0.0028)	0.9458 (0.0072)	0.0076 (0.0003)	996
FP (W)	-0.5277	0.0074	0.0912 (0.0020)	-0.0277 (0.0029)	0.9256 (0.0083)	0.0091 (0.0004)	995
FP (k=10)	-0.4812	0.0071	0.0867 (0.0019)	0.0188 (0.0027)	0.9400 (0.0075)	0.0079 (0.0003)	1000
FP (k=10000)	-0.5758	0.0060	0.1029 (0.0023)	-0.0758 (0.0033)	0.7550 (0.0136)	0.0163 (0.0007)	1000
Model frailty: Normal							
Cox	-0.4678	0.0066	0.0824 (0.0018)	0.0322 (0.0026)	0.9320 (0.0080)	0.0078 (0.0003)	1000
Exp	-0.3529	0.0053	0.0652 (0.0015)	0.1471 (0.0021)	0.4669 (0.0158)	0.0259 (0.0006)	998
Weibull	-0.5023	0.0073	0.0885 (0.0020)	-0.0023 (0.0028)	0.9477 (0.0071)	0.0078 (0.0003)	994
Gompertz	-0.3532	0.0054	0.0651 (0.0020)	0.1468 (0.0028)	0.4740 (0.0215)	0.0258 (0.0008)	538
RP (3)	-0.4959	0.0073	0.0872 (0.0020)	0.0041 (0.0028)	0.9480 (0.0070)	0.0076 (0.0003)	1000
RP (5)	-0.4949	0.0073	0.0871 (0.0019)	0.0051 (0.0028)	0.9480 (0.0070)	0.0076 (0.0003)	1000
RP (9)	-0.4949	0.0073	0.0872 (0.0020)	0.0051 (0.0028)	0.9480 (0.0070)	0.0076 (0.0003)	1000
RP (P)	-0.4940	0.0073	0.0870 (0.0019)	0.0060 (0.0028)	0.9490 (0.0070)	0.0076 (0.0003)	1000
FP (W)	-0.5184	0.0076	0.0912 (0.0020)	-0.0184 (0.0029)	0.9428 (0.0074)	0.0086 (0.0004)	996
FP (k=10)	-0.4827	0.0073	0.0865 (0.0019)	0.0173 (0.0027)	0.9465 (0.0071)	0.0078 (0.0003)	991
FP (k=10000)	-0.5661	0.0065	0.1057 (0.0024)	-0.0661 (0.0033)	0.7810 (0.0131)	0.0155 (0.0007)	1000

Table 35: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5027	0.0076	0.0898 (0.0020)	-0.0027 (0.0028)	0.9389 (0.0076)	0.0081 (0.0004)	999
Exp	-0.5413	0.0081	0.0947 (0.0021)	-0.0413 (0.0030)	0.9030 (0.0094)	0.0107 (0.0005)	1000
Weibull	-0.5045	0.0078	0.0899 (0.0020)	-0.0045 (0.0028)	0.9410 (0.0075)	0.0081 (0.0004)	1000
Gompertz	-0.5417	0.0083	0.0921 (0.0033)	-0.0417 (0.0046)	0.9080 (0.0144)	0.0102 (0.0008)	402
RP (3)	-0.5025	0.0078	0.0897 (0.0020)	-0.0025 (0.0028)	0.9410 (0.0075)	0.0080 (0.0004)	1000
RP (5)	-0.5037	0.0078	0.0899 (0.0020)	-0.0037 (0.0028)	0.9400 (0.0075)	0.0081 (0.0004)	1000
RP (9)	-0.5040	0.0078	0.0900 (0.0020)	-0.0040 (0.0028)	0.9420 (0.0074)	0.0081 (0.0004)	1000
RP (P)	-0.5033	0.0078	0.0898 (0.0020)	-0.0033 (0.0028)	0.9410 (0.0075)	0.0081 (0.0004)	1000
FP (W)	-0.5045	0.0078	0.0899 (0.0020)	-0.0045 (0.0028)	0.9410 (0.0075)	0.0081 (0.0004)	1000
FP (k=10)	-0.4983	0.0078	0.0898 (0.0020)	0.0017 (0.0029)	0.9414 (0.0075)	0.0081 (0.0004)	990
FP (k=10000)	-0.4960	0.0061	0.0883 (0.0020)	0.0040 (0.0028)	0.9120 (0.0090)	0.0078 (0.0004)	1000
Model frailty: Normal							
Cox	-0.4704	0.0073	0.0845 (0.0019)	0.0296 (0.0027)	0.9450 (0.0072)	0.0080 (0.0004)	1000
Exp	-0.5205	0.0080	0.0923 (0.0021)	-0.0205 (0.0029)	0.9315 (0.0080)	0.0089 (0.0004)	992
Weibull	-0.4886	0.0077	0.0880 (0.0020)	0.0114 (0.0028)	0.9518 (0.0068)	0.0079 (0.0003)	995
Gompertz	-0.5143	0.0082	0.0890 (0.0037)	-0.0143 (0.0052)	0.9452 (0.0133)	0.0081 (0.0007)	292
RP (3)	-0.5005	0.0081	0.0901 (0.0020)	-0.0005 (0.0028)	0.9480 (0.0070)	0.0081 (0.0004)	1000
RP (5)	-0.5013	0.0081	0.0902 (0.0020)	-0.0013 (0.0029)	0.9460 (0.0071)	0.0081 (0.0004)	1000
RP (9)	-0.5014	0.0081	0.0902 (0.0020)	-0.0014 (0.0029)	0.9470 (0.0071)	0.0081 (0.0004)	1000
RP (P)	-0.5001	0.0080	0.0900 (0.0020)	-0.0001 (0.0028)	0.9460 (0.0071)	0.0081 (0.0004)	1000
FP (W)	-0.5023	0.0081	0.0908 (0.0021)	-0.0023 (0.0029)	0.9429 (0.0075)	0.0082 (0.0004)	963
FP (k=10)	-0.4978	0.0081	0.0908 (0.0020)	0.0022 (0.0029)	0.9469 (0.0071)	0.0082 (0.0004)	998
FP (k=10000)	-0.4880	0.0069	0.0878 (0.0020)	0.0120 (0.0028)	0.9370 (0.0077)	0.0078 (0.0003)	1000

Table 36: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4862	0.0059	0.0791 (0.0018)	0.0138 (0.0025)	0.9399 (0.0075)	0.0064 (0.0003)	999
Exp	-0.5054	0.0061	0.0803 (0.0018)	-0.0054 (0.0025)	0.9360 (0.0077)	0.0065 (0.0003)	1000
Weibull	-0.4865	0.0061	0.0786 (0.0018)	0.0135 (0.0025)	0.9390 (0.0076)	0.0063 (0.0003)	1000
Gompertz	-0.5038	0.0063	0.0782 (0.0026)	-0.0038 (0.0037)	0.9418 (0.0111)	0.0061 (0.0004)	447
RP (3)	-0.4871	0.0061	0.0791 (0.0018)	0.0129 (0.0025)	0.9410 (0.0075)	0.0064 (0.0003)	1000
RP (5)	-0.4873	0.0061	0.0792 (0.0018)	0.0127 (0.0025)	0.9410 (0.0075)	0.0064 (0.0003)	1000
RP (9)	-0.4874	0.0061	0.0792 (0.0018)	0.0126 (0.0025)	0.9420 (0.0074)	0.0064 (0.0003)	1000
RP (P)	-0.4867	0.0061	0.0789 (0.0018)	0.0133 (0.0025)	0.9400 (0.0075)	0.0064 (0.0003)	1000
FP (W)	-0.4872	0.0061	0.0785 (0.0018)	0.0128 (0.0025)	0.9403 (0.0075)	0.0063 (0.0003)	989
FP (k=10)	-0.4852	0.0061	0.0793 (0.0018)	0.0148 (0.0025)	0.9409 (0.0075)	0.0065 (0.0003)	999
FP (k=10000)	-0.4950	0.0046	0.0805 (0.0018)	0.0050 (0.0025)	0.9009 (0.0095)	0.0065 (0.0003)	999
Model frailty: Normal							
Cox	-0.4728	0.0058	0.0762 (0.0017)	0.0272 (0.0024)	0.9340 (0.0079)	0.0065 (0.0003)	1000
Exp	-0.4956	0.0061	0.0783 (0.0018)	0.0044 (0.0025)	0.9437 (0.0073)	0.0061 (0.0003)	995
Weibull	-0.4885	0.0062	0.0783 (0.0018)	0.0115 (0.0025)	0.9468 (0.0071)	0.0063 (0.0003)	997
Gompertz	-0.4963	0.0062	0.0728 (0.0028)	0.0037 (0.0040)	0.9643 (0.0101)	0.0053 (0.0004)	336
RP (3)	-0.4990	0.0064	0.0806 (0.0018)	0.0010 (0.0025)	0.9470 (0.0071)	0.0065 (0.0003)	1000
RP (5)	-0.4991	0.0064	0.0806 (0.0018)	0.0009 (0.0025)	0.9470 (0.0071)	0.0065 (0.0003)	1000
RP (9)	-0.4991	0.0064	0.0806 (0.0018)	0.0009 (0.0025)	0.9480 (0.0070)	0.0065 (0.0003)	1000
RP (P)	-0.4999	0.0064	0.0805 (0.0018)	0.0001 (0.0025)	0.9480 (0.0070)	0.0065 (0.0003)	1000
FP (W)	-0.4999	0.0064	0.0806 (0.0019)	0.0001 (0.0027)	0.9468 (0.0074)	0.0065 (0.0003)	921
FP (k=10)	-0.4959	0.0064	0.0803 (0.0018)	0.0041 (0.0026)	0.9492 (0.0070)	0.0065 (0.0003)	984
FP (k=10000)	-0.4977	0.0050	0.0801 (0.0018)	0.0023 (0.0025)	0.9190 (0.0086)	0.0064 (0.0003)	1000

Table 37: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4914	0.0064	0.0778 (0.0017)	0.0086 (0.0025)	0.9570 (0.0064)	0.0061 (0.0003)	999
Exp	-0.6222	0.0077	0.0979 (0.0022)	-0.1222 (0.0031)	0.6990 (0.0145)	0.0245 (0.0009)	1000
Weibull	-0.4948	0.0065	0.0778 (0.0017)	0.0052 (0.0025)	0.9620 (0.0060)	0.0061 (0.0003)	1000
Gompertz	-0.6193	0.0080	0.1034 (0.0036)	-0.1193 (0.0051)	0.7037 (0.0227)	0.0249 (0.0014)	405
RP (3)	-0.4923	0.0065	0.0779 (0.0017)	0.0077 (0.0025)	0.9610 (0.0061)	0.0061 (0.0003)	1000
RP (5)	-0.4925	0.0065	0.0779 (0.0017)	0.0075 (0.0025)	0.9630 (0.0060)	0.0061 (0.0003)	1000
RP (9)	-0.4926	0.0065	0.0780 (0.0017)	0.0074 (0.0025)	0.9620 (0.0060)	0.0061 (0.0003)	1000
RP (P)	-0.4931	0.0065	0.0780 (0.0017)	0.0069 (0.0025)	0.9610 (0.0061)	0.0061 (0.0003)	1000
FP (W)	-0.4949	0.0065	0.0779 (0.0017)	0.0051 (0.0025)	0.9619 (0.0061)	0.0061 (0.0003)	998
FP (k=10)	-0.4903	0.0067	0.0815 (0.0018)	0.0097 (0.0026)	0.9510 (0.0068)	0.0067 (0.0003)	1000
FP (k=10000)	-0.5541	0.0053	0.0886 (0.0020)	-0.0541 (0.0028)	0.8260 (0.0120)	0.0108 (0.0005)	1000
Model frailty: Normal							
Cox	-0.4756	0.0062	0.0747 (0.0017)	0.0244 (0.0024)	0.9540 (0.0066)	0.0062 (0.0003)	1000
Exp	-0.6015	0.0077	0.0935 (0.0021)	-0.1015 (0.0030)	0.7810 (0.0131)	0.0190 (0.0007)	991
Weibull	-0.4961	0.0066	0.0773 (0.0017)	0.0039 (0.0024)	0.9630 (0.0060)	0.0060 (0.0003)	999
Gompertz	-0.5959	0.0079	0.0890 (0.0037)	-0.0959 (0.0052)	0.8123 (0.0228)	0.0171 (0.0013)	293
RP (3)	-0.5044	0.0069	0.0793 (0.0018)	-0.0044 (0.0025)	0.9610 (0.0061)	0.0063 (0.0003)	1000
RP (5)	-0.5043	0.0069	0.0793 (0.0018)	-0.0043 (0.0025)	0.9620 (0.0060)	0.0063 (0.0003)	1000
RP (9)	-0.5042	0.0069	0.0793 (0.0018)	-0.0042 (0.0025)	0.9610 (0.0061)	0.0063 (0.0003)	1000
RP (P)	-0.5053	0.0069	0.0794 (0.0018)	-0.0053 (0.0025)	0.9630 (0.0060)	0.0063 (0.0003)	1000
FP (W)	-0.5074	0.0069	0.0796 (0.0018)	-0.0074 (0.0026)	0.9614 (0.0062)	0.0064 (0.0003)	958
FP (k=10)	-0.5112	0.0072	0.0829 (0.0019)	-0.0112 (0.0026)	0.9579 (0.0064)	0.0070 (0.0003)	998
FP (k=10000)	-0.5570	0.0061	0.0879 (0.0020)	-0.0570 (0.0028)	0.8587 (0.0110)	0.0110 (0.0005)	998

Table 38: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4879	0.0055	0.0776 (0.0017)	0.0121 (0.0025)	0.9409 (0.0075)	0.0062 (0.0003)	999
Exp	-0.4270	0.0048	0.0670 (0.0015)	0.0730 (0.0021)	0.8150 (0.0123)	0.0098 (0.0004)	1000
Weibull	-0.4531	0.0052	0.0725 (0.0016)	0.0469 (0.0023)	0.8940 (0.0097)	0.0074 (0.0003)	1000
Gompertz	-0.4251	0.0050	0.0682 (0.0021)	0.0749 (0.0029)	0.8082 (0.0170)	0.0103 (0.0005)	537
RP (3)	-0.4879	0.0057	0.0777 (0.0017)	0.0121 (0.0025)	0.9440 (0.0073)	0.0062 (0.0003)	1000
RP (5)	-0.4888	0.0057	0.0778 (0.0017)	0.0112 (0.0025)	0.9460 (0.0071)	0.0062 (0.0003)	1000
RP (9)	-0.4891	0.0057	0.0779 (0.0017)	0.0109 (0.0025)	0.9450 (0.0072)	0.0062 (0.0003)	1000
RP (P)	-0.4838	0.0056	0.0771 (0.0017)	0.0162 (0.0024)	0.9420 (0.0074)	0.0062 (0.0003)	1000
FP (W)	-0.4531	0.0052	0.0725 (0.0016)	0.0469 (0.0023)	0.8940 (0.0097)	0.0074 (0.0003)	1000
FP (k=10)	-0.4846	0.0056	0.0777 (0.0017)	0.0154 (0.0025)	0.9400 (0.0075)	0.0063 (0.0003)	1000
FP (k=10000)	-0.4881	0.0041	0.0776 (0.0017)	0.0119 (0.0025)	0.8935 (0.0098)	0.0062 (0.0003)	995
Model frailty: Normal							
Cox	-0.4774	0.0054	0.0755 (0.0017)	0.0226 (0.0024)	0.9350 (0.0078)	0.0062 (0.0003)	1000
Exp	-0.4236	0.0048	0.0662 (0.0015)	0.0764 (0.0021)	0.8044 (0.0126)	0.0102 (0.0004)	997
Weibull	-0.4642	0.0054	0.0734 (0.0016)	0.0358 (0.0023)	0.9205 (0.0086)	0.0067 (0.0003)	994
Gompertz	-0.4217	0.0050	0.0667 (0.0021)	0.0783 (0.0030)	0.7980 (0.0178)	0.0106 (0.0005)	510
RP (3)	-0.5012	0.0059	0.0792 (0.0018)	-0.0012 (0.0025)	0.9500 (0.0069)	0.0063 (0.0003)	1000
RP (5)	-0.5016	0.0059	0.0793 (0.0018)	-0.0016 (0.0025)	0.9500 (0.0069)	0.0063 (0.0003)	1000
RP (9)	-0.5018	0.0060	0.0794 (0.0018)	-0.0018 (0.0025)	0.9500 (0.0069)	0.0063 (0.0003)	1000
RP (P)	-0.4970	0.0059	0.0786 (0.0018)	0.0030 (0.0025)	0.9520 (0.0068)	0.0062 (0.0003)	1000
FP (W)	-0.4744	0.0056	0.0748 (0.0018)	0.0256 (0.0025)	0.9392 (0.0080)	0.0062 (0.0003)	904
FP (k=10)	-0.4987	0.0059	0.0791 (0.0018)	0.0013 (0.0025)	0.9499 (0.0069)	0.0063 (0.0003)	999
FP (k=10000)	-0.5003	0.0043	0.0790 (0.0018)	-0.0003 (0.0025)	0.9080 (0.0091)	0.0062 (0.0003)	1000

Table 39: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4881	0.0056	0.0767 (0.0017)	0.0119 (0.0024)	0.9320 (0.0080)	0.0060 (0.0003)	1000
Exp	-0.3542	0.0042	0.0557 (0.0012)	0.1458 (0.0018)	0.3780 (0.0153)	0.0244 (0.0005)	1000
Weibull	-0.5166	0.0060	0.0801 (0.0018)	-0.0166 (0.0025)	0.9370 (0.0077)	0.0067 (0.0003)	1000
Gompertz	-0.3617	0.0044	0.0603 (0.0016)	0.1383 (0.0023)	0.4246 (0.0185)	0.0227 (0.0006)	716
RP (3)	-0.4900	0.0058	0.0770 (0.0017)	0.0100 (0.0024)	0.9350 (0.0078)	0.0060 (0.0003)	1000
RP (5)	-0.4891	0.0058	0.0768 (0.0017)	0.0109 (0.0024)	0.9360 (0.0077)	0.0060 (0.0003)	1000
RP (9)	-0.4894	0.0058	0.0769 (0.0017)	0.0106 (0.0024)	0.9370 (0.0077)	0.0060 (0.0003)	1000
RP (P)	-0.4900	0.0058	0.0771 (0.0017)	0.0100 (0.0024)	0.9380 (0.0076)	0.0060 (0.0003)	1000
FP (W)	-0.5168	0.0060	0.0801 (0.0018)	-0.0168 (0.0025)	0.9375 (0.0077)	0.0067 (0.0003)	992
FP (k=10)	-0.4669	0.0058	0.0781 (0.0017)	0.0331 (0.0025)	0.9180 (0.0087)	0.0072 (0.0003)	1000
FP (k=10000)	-0.5656	0.0050	0.0906 (0.0020)	-0.0656 (0.0029)	0.7746 (0.0133)	0.0125 (0.0005)	994
Model frailty: Normal							
Cox	-0.4760	0.0055	0.0742 (0.0017)	0.0240 (0.0023)	0.9290 (0.0081)	0.0061 (0.0003)	1000
Exp	-0.3513	0.0042	0.0557 (0.0012)	0.1487 (0.0018)	0.3480 (0.0151)	0.0252 (0.0006)	1000
Weibull	-0.5117	0.0060	0.0785 (0.0018)	-0.0117 (0.0025)	0.9429 (0.0073)	0.0063 (0.0003)	998
Gompertz	-0.3570	0.0043	0.0598 (0.0017)	0.1430 (0.0024)	0.3974 (0.0197)	0.0240 (0.0007)	614
RP (3)	-0.5013	0.0061	0.0779 (0.0017)	-0.0013 (0.0025)	0.9430 (0.0073)	0.0061 (0.0003)	1000
RP (5)	-0.5008	0.0061	0.0778 (0.0017)	-0.0008 (0.0025)	0.9420 (0.0074)	0.0061 (0.0003)	1000
RP (9)	-0.5009	0.0061	0.0779 (0.0017)	-0.0009 (0.0025)	0.9420 (0.0074)	0.0061 (0.0003)	1000
RP (P)	-0.5001	0.0060	0.0777 (0.0017)	-0.0001 (0.0025)	0.9420 (0.0074)	0.0060 (0.0003)	1000
FP (W)	-0.5208	0.0063	0.0809 (0.0021)	-0.0208 (0.0030)	0.9352 (0.0091)	0.0070 (0.0004)	725
FP (k=10)	-0.4863	0.0061	0.0782 (0.0018)	0.0137 (0.0025)	0.9339 (0.0079)	0.0063 (0.0003)	998
FP (k=10000)	-0.5952	0.0051	0.0935 (0.0021)	-0.0952 (0.0030)	0.6830 (0.0147)	0.0178 (0.0007)	1000

Table 40: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4902	0.0061	0.0812 (0.0018)	0.0098 (0.0026)	0.9399 (0.0075)	0.0067 (0.0003)	999
Exp	-0.5470	0.0067	0.0894 (0.0020)	-0.0470 (0.0028)	0.8880 (0.0100)	0.0102 (0.0004)	1000
Weibull	-0.4876	0.0062	0.0803 (0.0018)	0.0124 (0.0025)	0.9370 (0.0077)	0.0066 (0.0003)	1000
Gompertz	-0.5432	0.0069	0.0899 (0.0032)	-0.0432 (0.0045)	0.9000 (0.0150)	0.0099 (0.0006)	400
RP (3)	-0.4903	0.0063	0.0812 (0.0018)	0.0097 (0.0026)	0.9400 (0.0075)	0.0067 (0.0003)	1000
RP (5)	-0.4911	0.0063	0.0813 (0.0018)	0.0089 (0.0026)	0.9410 (0.0075)	0.0067 (0.0003)	1000
RP (9)	-0.4913	0.0063	0.0814 (0.0018)	0.0087 (0.0026)	0.9420 (0.0074)	0.0067 (0.0003)	1000
RP (P)	-0.4907	0.0063	0.0812 (0.0018)	0.0093 (0.0026)	0.9410 (0.0075)	0.0067 (0.0003)	1000
FP (W)	-0.4872	0.0062	0.0805 (0.0018)	0.0128 (0.0026)	0.9372 (0.0077)	0.0066 (0.0003)	988
FP (k=10)	-0.4898	0.0064	0.0825 (0.0018)	0.0102 (0.0026)	0.9370 (0.0077)	0.0069 (0.0003)	1000
FP (k=10000)	-0.4979	0.0048	0.0823 (0.0018)	0.0021 (0.0026)	0.8970 (0.0096)	0.0068 (0.0003)	1000
Model frailty: Normal							
Cox	-0.4752	0.0060	0.0779 (0.0017)	0.0248 (0.0025)	0.9300 (0.0081)	0.0067 (0.0003)	1000
Exp	-0.5364	0.0067	0.0868 (0.0019)	-0.0364 (0.0027)	0.9168 (0.0087)	0.0088 (0.0004)	997
Weibull	-0.4882	0.0063	0.0798 (0.0018)	0.0118 (0.0025)	0.9448 (0.0072)	0.0065 (0.0003)	997
Gompertz	-0.5338	0.0068	0.0851 (0.0037)	-0.0338 (0.0052)	0.9361 (0.0150)	0.0084 (0.0006)	266
RP (3)	-0.5020	0.0066	0.0824 (0.0018)	-0.0020 (0.0026)	0.9490 (0.0070)	0.0068 (0.0003)	1000
RP (5)	-0.5026	0.0066	0.0824 (0.0018)	-0.0026 (0.0026)	0.9490 (0.0070)	0.0068 (0.0003)	1000
RP (9)	-0.5027	0.0066	0.0824 (0.0018)	-0.0027 (0.0026)	0.9480 (0.0070)	0.0068 (0.0003)	1000
RP (P)	-0.5018	0.0066	0.0822 (0.0018)	-0.0018 (0.0026)	0.9490 (0.0070)	0.0068 (0.0003)	1000
FP (W)	-0.4998	0.0065	0.0821 (0.0019)	0.0002 (0.0027)	0.9547 (0.0068)	0.0067 (0.0003)	949
FP (k=10)	-0.5049	0.0067	0.0838 (0.0019)	-0.0049 (0.0027)	0.9518 (0.0068)	0.0070 (0.0003)	995
FP (k=10000)	-0.5022	0.0053	0.0821 (0.0018)	-0.0022 (0.0026)	0.9230 (0.0084)	0.0067 (0.0003)	1000

Table 41: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5083	0.0123	0.1119 (0.0025)	-0.0083 (0.0036)	0.9507 (0.0069)	0.0126 (0.0006)	993
Exp	-0.4796	0.0118	0.1042 (0.0023)	0.0204 (0.0033)	0.9520 (0.0068)	0.0113 (0.0005)	1000
Weibull	-0.5361	0.0130	0.1189 (0.0027)	-0.0361 (0.0038)	0.9270 (0.0082)	0.0154 (0.0007)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.5166	0.0127	0.1147 (0.0026)	-0.0166 (0.0036)	0.9440 (0.0073)	0.0134 (0.0006)	1000
RP (5)	-0.5175	0.0127	0.1142 (0.0026)	-0.0175 (0.0036)	0.9440 (0.0073)	0.0133 (0.0006)	1000
RP (9)	-0.5161	0.0127	0.1138 (0.0025)	-0.0161 (0.0036)	0.9500 (0.0069)	0.0132 (0.0006)	1000
RP (P)	-0.5150	0.0126	0.1135 (0.0025)	-0.0150 (0.0036)	0.9490 (0.0070)	0.0131 (0.0006)	1000
FP (W)	-0.5361	0.0130	0.1189 (0.0027)	-0.0361 (0.0038)	0.9270 (0.0082)	0.0154 (0.0007)	1000
FP (k=10)	-0.4628	0.0110	0.1009 (0.0023)	0.0372 (0.0032)	0.9429 (0.0073)	0.0116 (0.0005)	999
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	-0.3872	0.0111	0.0913 (0.0020)	0.1128 (0.0029)	0.8540 (0.0112)	0.0210 (0.0007)	1000
Exp	-0.4496	0.0126	0.1035 (0.0026)	0.0504 (0.0036)	0.9525 (0.0074)	0.0132 (0.0006)	821
Weibull	-0.4802	0.0134	0.1091 (0.0027)	0.0198 (0.0038)	0.9584 (0.0070)	0.0123 (0.0006)	818
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.4604	0.0126	0.1106 (0.0025)	0.0396 (0.0035)	0.9420 (0.0074)	0.0138 (0.0006)	1000
RP (5)	-0.4723	0.0127	0.1115 (0.0025)	0.0277 (0.0035)	0.9450 (0.0072)	0.0132 (0.0006)	1000
RP (9)	-0.4706	0.0127	0.1110 (0.0025)	0.0294 (0.0035)	0.9440 (0.0073)	0.0132 (0.0006)	1000
RP (P)	-0.4693	0.0126	0.1103 (0.0025)	0.0307 (0.0035)	0.9450 (0.0072)	0.0131 (0.0006)	1000
FP (W)	-0.4270	0.0122	0.1005 (0.0023)	0.0730 (0.0032)	0.9180 (0.0088)	0.0154 (0.0007)	976
FP (k=10)	-0.3141	0.0108	0.0879 (0.0020)	0.1859 (0.0028)	0.5716 (0.0157)	0.0423 (0.0011)	999
FP (k=10000)	-0.3874	0.0095	0.0940 (0.0021)	0.1126 (0.0030)	0.7956 (0.0128)	0.0215 (0.0008)	998

Table 42: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5055	0.0128	0.1121 (0.0025)	-0.0055 (0.0036)	0.9588 (0.0063)	0.0126 (0.0005)	995
Exp	-0.5390	0.0131	0.1168 (0.0026)	-0.0390 (0.0037)	0.9370 (0.0077)	0.0152 (0.0006)	1000
Weibull	-0.5529	0.0137	0.1217 (0.0027)	-0.0529 (0.0038)	0.9230 (0.0084)	0.0176 (0.0007)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.5270	0.0133	0.1181 (0.0026)	-0.0270 (0.0037)	0.9460 (0.0071)	0.0147 (0.0006)	1000
RP (5)	-0.5267	0.0133	0.1167 (0.0027)	-0.0267 (0.0037)	0.9484 (0.0071)	0.0143 (0.0006)	969
RP (9)	-0.5615	0.0135	0.1474 (0.0521)	-0.0615 (0.0659)	1.0000 (0.0000)	0.0212 (0.0088)	5
RP (P)	-0.5270	0.0133	0.1170 (0.0026)	-0.0270 (0.0037)	0.9460 (0.0071)	0.0144 (0.0006)	1000
FP (W)	-0.5528	0.0137	0.1218 (0.0027)	-0.0528 (0.0039)	0.9229 (0.0084)	0.0176 (0.0007)	999
FP (k=10)	-0.5215	0.0117	0.1130 (0.0025)	-0.0215 (0.0036)	0.9467 (0.0071)	0.0132 (0.0006)	995
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	-0.3843	0.0115	0.0917 (0.0021)	0.1157 (0.0029)	0.8365 (0.0117)	0.0218 (0.0008)	997
Exp	-0.4951	0.0138	0.1157 (0.0030)	0.0049 (0.0042)	0.9562 (0.0075)	0.0134 (0.0006)	754
Weibull	-0.4836	0.0139	0.1132 (0.0029)	0.0164 (0.0042)	0.9501 (0.0080)	0.0131 (0.0006)	742
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.4641	0.0131	0.1117 (0.0025)	0.0359 (0.0035)	0.9440 (0.0073)	0.0138 (0.0006)	1000
RP (5)	-0.4638	0.0131	0.1205 (0.0027)	0.0362 (0.0038)	0.9374 (0.0077)	0.0158 (0.0009)	991
RP (9)	-0.0986	0.0081	0.0711 (0.0021)	0.4014 (0.0030)	0.0018 (0.0018)	0.1662 (0.0024)	563
RP (P)	-0.4670	0.0131	0.1111 (0.0025)	0.0330 (0.0035)	0.9520 (0.0068)	0.0134 (0.0006)	1000
FP (W)	-0.4261	0.0126	0.0982 (0.0022)	0.0739 (0.0031)	0.9322 (0.0081)	0.0151 (0.0006)	973
FP (k=10)	-0.2923	0.0116	0.0953 (0.0021)	0.2077 (0.0030)	0.5226 (0.0158)	0.0522 (0.0013)	997
FP (k=10000)	-0.4264	0.0095	0.1007 (0.0023)	0.0736 (0.0032)	0.8715 (0.0106)	0.0156 (0.0007)	996

Table 43: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5126	0.0115	0.1095 (0.0025)	-0.0126 (0.0035)	0.9406 (0.0075)	0.0121 (0.0005)	993
Exp	-0.4787	0.0110	0.1002 (0.0022)	0.0213 (0.0032)	0.9600 (0.0062)	0.0105 (0.0005)	1000
Weibull	-0.5380	0.0121	0.1153 (0.0026)	-0.0380 (0.0036)	0.9230 (0.0084)	0.0147 (0.0007)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.5226	0.0119	0.1124 (0.0025)	-0.0226 (0.0036)	0.9320 (0.0080)	0.0131 (0.0006)	1000
RP (5)	-0.5212	0.0119	0.1117 (0.0025)	-0.0212 (0.0035)	0.9350 (0.0078)	0.0129 (0.0006)	1000
RP (9)	-0.5199	0.0118	0.1114 (0.0025)	-0.0199 (0.0035)	0.9350 (0.0078)	0.0128 (0.0006)	1000
RP (P)	-0.5188	0.0118	0.1112 (0.0025)	-0.0188 (0.0035)	0.9390 (0.0076)	0.0127 (0.0006)	1000
FP (W)	-0.5382	0.0121	0.1152 (0.0026)	-0.0382 (0.0036)	0.9228 (0.0085)	0.0147 (0.0007)	997
FP (k=10)	-0.4746	0.0105	0.1000 (0.0022)	0.0254 (0.0032)	0.9535 (0.0067)	0.0106 (0.0005)	989
FP (k=10000)	-0.3982	0.0088	0.1287 (0.0455)	0.1018 (0.0576)	0.8000 (0.1789)	0.0236 (0.0126)	5
Model frailty: Normal							
Cox	-0.4009	0.0105	0.0889 (0.0021)	0.0991 (0.0029)	0.8817 (0.0105)	0.0177 (0.0007)	938
Exp	-0.4481	0.0116	0.1000 (0.0024)	0.0519 (0.0034)	0.9434 (0.0079)	0.0127 (0.0006)	866
Weibull	-0.4875	0.0125	0.1096 (0.0027)	0.0125 (0.0038)	0.9574 (0.0069)	0.0121 (0.0006)	845
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.4755	0.0119	0.1080 (0.0024)	0.0245 (0.0034)	0.9440 (0.0073)	0.0123 (0.0005)	1000
RP (5)	-0.4793	0.0119	0.1084 (0.0024)	0.0207 (0.0034)	0.9450 (0.0072)	0.0122 (0.0005)	1000
RP (9)	-0.4801	0.0119	0.1078 (0.0024)	0.0199 (0.0034)	0.9440 (0.0073)	0.0120 (0.0005)	1000
RP (P)	-0.4791	0.0118	0.1081 (0.0024)	0.0209 (0.0034)	0.9380 (0.0076)	0.0121 (0.0005)	1000
FP (W)	-0.4465	0.0116	0.0996 (0.0022)	0.0535 (0.0032)	0.9369 (0.0078)	0.0128 (0.0005)	983
FP (k=10)	-0.3323	0.0102	0.0861 (0.0019)	0.1677 (0.0027)	0.6210 (0.0153)	0.0355 (0.0010)	1000
FP (k=10000)	-0.4019	0.0090	0.0908 (0.0020)	0.0981 (0.0029)	0.8318 (0.0118)	0.0179 (0.0007)	999

Table 44: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5109	0.0118	0.1113 (0.0025)	-0.0109 (0.0035)	0.9437 (0.0073)	0.0125 (0.0006)	994
Exp	-0.3169	0.0093	0.0715 (0.0016)	0.1831 (0.0023)	0.5420 (0.0158)	0.0386 (0.0009)	1000
Weibull	-0.5077	0.0120	0.1112 (0.0025)	-0.0077 (0.0035)	0.9550 (0.0066)	0.0124 (0.0006)	1000
Gompertz	-0.3171	0.0094	0.0597 (0.0039)	0.1829 (0.0055)	0.5462 (0.0456)	0.0370 (0.0021)	119
RP (3)	-0.5095	0.0119	0.1131 (0.0032)	-0.0095 (0.0045)	0.9429 (0.0092)	0.0129 (0.0008)	630
RP (5)	-0.5140	0.0120	0.1113 (0.0025)	-0.0140 (0.0035)	0.9504 (0.0069)	0.0126 (0.0006)	988
RP (9)	-0.5136	0.0120	0.1120 (0.0025)	-0.0136 (0.0035)	0.9470 (0.0071)	0.0127 (0.0006)	1000
RP (P)	-0.5079	0.0119	0.1107 (0.0025)	-0.0079 (0.0035)	0.9480 (0.0070)	0.0123 (0.0006)	1000
FP (W)	-0.5077	0.0120	0.1112 (0.0025)	-0.0077 (0.0035)	0.9550 (0.0066)	0.0124 (0.0006)	1000
FP (k=10)	-0.3173	0.0098	0.1113 (0.0025)	0.1827 (0.0036)	0.4738 (0.0160)	0.0458 (0.0012)	973
FP (k=10000)	-0.3028	0.0072	0.0693 (0.0017)	0.1972 (0.0024)	0.3362 (0.0165)	0.0437 (0.0010)	824
Model frailty: Normal							
Cox	-0.3962	0.0107	0.0921 (0.0021)	0.1038 (0.0030)	0.8487 (0.0116)	0.0193 (0.0008)	952
Exp	-0.3015	0.0099	0.0736 (0.0017)	0.1985 (0.0024)	0.4814 (0.0163)	0.0448 (0.0010)	943
Weibull	-0.4649	0.0125	0.1085 (0.0026)	0.0351 (0.0036)	0.9502 (0.0072)	0.0130 (0.0006)	904
Gompertz	-0.2911	0.0100	0.0665 (0.0052)	0.2089 (0.0073)	0.4578 (0.0547)	0.0480 (0.0033)	83
RP (3)	-0.4014	0.0111	0.1519 (0.0035)	0.0986 (0.0050)	0.7681 (0.0139)	0.0328 (0.0017)	923
RP (5)	-0.4696	0.0121	0.1144 (0.0026)	0.0304 (0.0036)	0.9339 (0.0079)	0.0140 (0.0008)	999
RP (9)	-0.4738	0.0121	0.1097 (0.0025)	0.0262 (0.0035)	0.9390 (0.0076)	0.0127 (0.0006)	1000
RP (P)	-0.4708	0.0120	0.1086 (0.0024)	0.0292 (0.0034)	0.9430 (0.0073)	0.0126 (0.0006)	1000
FP (W)	-0.4200	0.0116	0.0980 (0.0022)	0.0800 (0.0031)	0.9039 (0.0094)	0.0160 (0.0007)	978
FP (k=10)	-0.2123	0.0104	0.0900 (0.0020)	0.2877 (0.0029)	0.1551 (0.0115)	0.0909 (0.0017)	993
FP (k=10000)	-0.2752	0.0084	0.0691 (0.0015)	0.2248 (0.0022)	0.2520 (0.0137)	0.0553 (0.0010)	1000

Table 45: Simulation results for treatment effect, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5142	0.0125	0.1140 (0.0026)	-0.0142 (0.0036)	0.9515 (0.0068)	0.0132 (0.0006)	990
Exp	-0.5561	0.0129	0.1217 (0.0027)	-0.0561 (0.0038)	0.8960 (0.0097)	0.0180 (0.0008)	1000
Weibull	-0.5563	0.0134	0.1238 (0.0028)	-0.0563 (0.0039)	0.8980 (0.0096)	0.0185 (0.0008)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.5329	0.0130	0.1196 (0.0027)	-0.0329 (0.0038)	0.9310 (0.0080)	0.0154 (0.0007)	1000
RP (5)	-0.5345	0.0130	0.1183 (0.0026)	-0.0345 (0.0037)	0.9399 (0.0075)	0.0152 (0.0007)	998
RP (9)	-0.5280	0.0129	0.0879 (0.0146)	-0.0280 (0.0202)	1.0000 (0.0000)	0.0081 (0.0023)	19
RP (P)	-0.5336	0.0130	0.1178 (0.0026)	-0.0336 (0.0037)	0.9390 (0.0076)	0.0150 (0.0007)	1000
FP (W)	-0.5563	0.0134	0.1238 (0.0028)	-0.0563 (0.0039)	0.8980 (0.0096)	0.0185 (0.0008)	1000
FP (k=10)	-0.5370	0.0117	0.1173 (0.0026)	-0.0370 (0.0037)	0.9096 (0.0091)	0.0151 (0.0007)	996
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	-0.3890	0.0113	0.0929 (0.0021)	0.1110 (0.0029)	0.8507 (0.0113)	0.0209 (0.0008)	998
Exp	-0.4997	0.0135	0.1117 (0.0038)	0.0003 (0.0053)	0.9571 (0.0096)	0.0124 (0.0009)	443
Weibull	-0.4831	0.0136	0.1142 (0.0041)	0.0169 (0.0058)	0.9562 (0.0104)	0.0133 (0.0010)	388
Gompertz	—	—	—	—	—	—	0
RP (3)	-0.4679	0.0128	0.1139 (0.0025)	0.0321 (0.0036)	0.9450 (0.0072)	0.0140 (0.0006)	1000
RP (5)	-0.4767	0.0129	0.1137 (0.0025)	0.0233 (0.0036)	0.9459 (0.0072)	0.0135 (0.0006)	999
RP (9)	-0.0954	0.0080	0.0765 (0.0025)	0.4046 (0.0036)	0.0022 (0.0022)	0.1696 (0.0030)	451
RP (P)	-0.4735	0.0129	0.1139 (0.0025)	0.0265 (0.0036)	0.9490 (0.0070)	0.0137 (0.0006)	1000
FP (W)	-0.4396	0.0125	0.1038 (0.0024)	0.0604 (0.0033)	0.9362 (0.0078)	0.0144 (0.0006)	972
FP (k=10)	-0.3372	0.0114	0.0989 (0.0022)	0.1628 (0.0031)	0.6827 (0.0147)	0.0363 (0.0011)	999
FP (k=10000)	-0.4385	0.0096	0.1040 (0.0023)	0.0615 (0.0033)	0.8947 (0.0097)	0.0146 (0.0006)	997

Table 46: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5006	0.0017	0.0414 (0.0009)	-0.0006 (0.0013)	0.9543 (0.0067)	0.0017 (0.0001)	985
Exp	-0.5005	0.0017	0.0414 (0.0009)	-0.0005 (0.0013)	0.9460 (0.0071)	0.0017 (0.0001)	1000
Weibull	-0.5010	0.0017	0.0414 (0.0009)	-0.0010 (0.0013)	0.9500 (0.0069)	0.0017 (0.0001)	1000
Gompertz	-0.4995	0.0017	0.0416 (0.0013)	0.0005 (0.0018)	0.9434 (0.0099)	0.0017 (0.0001)	548
RP (3)	-0.5007	0.0017	0.0414 (0.0009)	-0.0007 (0.0013)	0.9550 (0.0066)	0.0017 (0.0001)	999
RP (5)	-0.5007	0.0017	0.0414 (0.0009)	-0.0007 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
RP (9)	-0.5007	0.0017	0.0414 (0.0009)	-0.0007 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
RP (P)	-0.5008	0.0017	0.0414 (0.0009)	-0.0008 (0.0013)	0.9510 (0.0068)	0.0017 (0.0001)	1000
FP (W)	-0.5010	0.0017	0.0414 (0.0009)	-0.0010 (0.0013)	0.9499 (0.0069)	0.0017 (0.0001)	999
FP (k=10)	-0.4997	0.0017	0.0414 (0.0009)	0.0003 (0.0013)	0.9510 (0.0068)	0.0017 (0.0001)	1000
FP (k=10000)	-0.5002	0.0017	0.0414 (0.0009)	-0.0002 (0.0013)	0.9490 (0.0070)	0.0017 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5007	0.0017	0.0415 (0.0009)	-0.0007 (0.0013)	0.9530 (0.0067)	0.0017 (0.0001)	999
Exp	-0.5005	0.0017	0.0414 (0.0009)	-0.0005 (0.0013)	0.9450 (0.0072)	0.0017 (0.0001)	1000
Weibull	-0.5010	0.0017	0.0414 (0.0009)	-0.0010 (0.0013)	0.9500 (0.0069)	0.0017 (0.0001)	1000
Gompertz	-0.5005	0.0017	0.0414 (0.0012)	-0.0005 (0.0017)	0.9399 (0.0100)	0.0017 (0.0001)	566
RP (3)	-0.5007	0.0017	0.0414 (0.0009)	-0.0007 (0.0013)	0.9550 (0.0066)	0.0017 (0.0001)	1000
RP (5)	-0.5007	0.0017	0.0415 (0.0009)	-0.0007 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
RP (9)	-0.5008	0.0017	0.0414 (0.0009)	-0.0008 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
RP (P)	-0.5009	0.0017	0.0414 (0.0009)	-0.0009 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
FP (W)	-0.5025	0.0017	0.0410 (0.0011)	-0.0025 (0.0015)	0.9563 (0.0076)	0.0017 (0.0001)	732
FP (k=10)	-0.4996	0.0017	0.0418 (0.0010)	0.0004 (0.0013)	0.9473 (0.0072)	0.0017 (0.0001)	968
FP (k=10000)	-0.5007	0.0016	0.0419 (0.0009)	-0.0007 (0.0013)	0.9383 (0.0077)	0.0018 (0.0001)	988

Table 47: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4995	0.0020	0.0424 (0.0010)	0.0005 (0.0014)	0.9572 (0.0065)	0.0018 (0.0001)	982
Exp	-0.5473	0.0020	0.0468 (0.0010)	-0.0473 (0.0015)	0.7970 (0.0127)	0.0044 (0.0002)	1000
Weibull	-0.5003	0.0020	0.0422 (0.0009)	-0.0003 (0.0013)	0.9590 (0.0063)	0.0018 (0.0001)	1000
Gompertz	-0.5470	0.0020	0.0460 (0.0015)	-0.0470 (0.0022)	0.7969 (0.0190)	0.0043 (0.0002)	448
RP (3)	-0.4995	0.0020	0.0422 (0.0009)	0.0005 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
RP (5)	-0.4995	0.0020	0.0422 (0.0009)	0.0005 (0.0013)	0.9590 (0.0063)	0.0018 (0.0001)	1000
RP (9)	-0.4996	0.0020	0.0422 (0.0009)	0.0004 (0.0013)	0.9580 (0.0063)	0.0018 (0.0001)	1000
RP (P)	-0.4998	0.0020	0.0422 (0.0009)	0.0002 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
FP (W)	-0.5002	0.0020	0.0421 (0.0009)	-0.0002 (0.0013)	0.9599 (0.0062)	0.0018 (0.0001)	998
FP (k=10)	-0.4963	0.0020	0.0424 (0.0009)	0.0037 (0.0013)	0.9620 (0.0061)	0.0018 (0.0001)	999
FP (k=10000)	-0.5038	0.0019	0.0432 (0.0010)	-0.0038 (0.0014)	0.9510 (0.0068)	0.0019 (0.0001)	999
Model frailty: Normal							
Cox	-0.4996	0.0020	0.0423 (0.0009)	0.0004 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
Exp	-0.5474	0.0020	0.0468 (0.0010)	-0.0474 (0.0015)	0.7990 (0.0127)	0.0044 (0.0002)	1000
Weibull	-0.5004	0.0020	0.0422 (0.0009)	-0.0004 (0.0013)	0.9590 (0.0063)	0.0018 (0.0001)	1000
Gompertz	-0.5460	0.0020	0.0463 (0.0016)	-0.0460 (0.0022)	0.8116 (0.0189)	0.0043 (0.0002)	430
RP (3)	-0.4996	0.0020	0.0422 (0.0009)	0.0004 (0.0013)	0.9610 (0.0061)	0.0018 (0.0001)	1000
RP (5)	-0.4996	0.0020	0.0423 (0.0009)	0.0004 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
RP (9)	-0.4997	0.0020	0.0423 (0.0009)	0.0003 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
RP (P)	-0.4999	0.0020	0.0422 (0.0009)	0.0001 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
FP (W)	-0.5027	0.0020	0.0421 (0.0010)	-0.0027 (0.0015)	0.9631 (0.0066)	0.0018 (0.0001)	812
FP (k=10)	-0.4968	0.0020	0.0427 (0.0010)	0.0032 (0.0014)	0.9540 (0.0067)	0.0018 (0.0001)	979
FP (k=10000)	-0.5028	0.0019	0.0434 (0.0010)	-0.0028 (0.0014)	0.9433 (0.0074)	0.0019 (0.0001)	987

Table 48: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5018	0.0015	0.0389 (0.0009)	-0.0018 (0.0012)	0.9520 (0.0068)	0.0015 (0.0001)	980
Exp	-0.4267	0.0015	0.0332 (0.0007)	0.0733 (0.0010)	0.5290 (0.0158)	0.0065 (0.0002)	1000
Weibull	-0.4789	0.0015	0.0372 (0.0008)	0.0211 (0.0012)	0.9280 (0.0082)	0.0018 (0.0001)	1000
Gompertz	-0.5017	0.0015	0.0393 (0.0009)	-0.0017 (0.0012)	0.9499 (0.0069)	0.0015 (0.0001)	999
RP (3)	-0.5015	0.0015	0.0391 (0.0009)	-0.0015 (0.0012)	0.9540 (0.0066)	0.0015 (0.0001)	1000
RP (5)	-0.5021	0.0015	0.0391 (0.0009)	-0.0021 (0.0012)	0.9510 (0.0068)	0.0015 (0.0001)	1000
RP (9)	-0.5022	0.0015	0.0391 (0.0009)	-0.0022 (0.0012)	0.9520 (0.0068)	0.0015 (0.0001)	1000
RP (P)	-0.4993	0.0015	0.0389 (0.0009)	0.0007 (0.0012)	0.9510 (0.0068)	0.0015 (0.0001)	1000
FP (W)	-0.4789	0.0015	0.0372 (0.0008)	0.0211 (0.0012)	0.9280 (0.0082)	0.0018 (0.0001)	1000
FP (k=10)	-0.5013	0.0015	0.0391 (0.0009)	-0.0013 (0.0012)	0.9530 (0.0067)	0.0015 (0.0001)	1000
FP (k=10000)	-0.4990	0.0015	0.0389 (0.0009)	0.0010 (0.0012)	0.9470 (0.0071)	0.0015 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5022	0.0015	0.0391 (0.0009)	-0.0022 (0.0012)	0.9510 (0.0068)	0.0015 (0.0001)	1000
Exp	-0.4267	0.0015	0.0332 (0.0007)	0.0733 (0.0010)	0.5280 (0.0158)	0.0065 (0.0002)	1000
Weibull	-0.4789	0.0015	0.0372 (0.0008)	0.0211 (0.0012)	0.9280 (0.0082)	0.0018 (0.0001)	1000
Gompertz	-0.5016	0.0015	0.0393 (0.0009)	-0.0016 (0.0012)	0.9510 (0.0068)	0.0015 (0.0001)	999
RP (3)	-0.5015	0.0015	0.0391 (0.0009)	-0.0015 (0.0012)	0.9540 (0.0066)	0.0015 (0.0001)	1000
RP (5)	-0.5021	0.0015	0.0391 (0.0009)	-0.0021 (0.0012)	0.9520 (0.0068)	0.0015 (0.0001)	1000
RP (9)	-0.5022	0.0015	0.0391 (0.0009)	-0.0022 (0.0012)	0.9510 (0.0068)	0.0015 (0.0001)	1000
RP (P)	-0.4993	0.0015	0.0389 (0.0009)	0.0007 (0.0012)	0.9520 (0.0068)	0.0015 (0.0001)	1000
FP (W)	-0.4811	0.0015	0.0367 (0.0010)	0.0189 (0.0014)	0.9390 (0.0093)	0.0017 (0.0001)	656
FP (k=10)	-0.5012	0.0015	0.0398 (0.0009)	-0.0012 (0.0013)	0.9480 (0.0072)	0.0016 (0.0001)	962
FP (k=10000)	-0.4992	0.0013	0.0398 (0.0009)	0.0008 (0.0013)	0.9257 (0.0084)	0.0016 (0.0001)	983

Table 49: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5015	0.0016	0.0396 (0.0009)	-0.0015 (0.0013)	0.9452 (0.0072)	0.0016 (0.0001)	986
Exp	-0.3956	0.0015	0.0317 (0.0007)	0.1044 (0.0010)	0.1810 (0.0122)	0.0119 (0.0002)	1000
Weibull	-0.5258	0.0016	0.0417 (0.0009)	-0.0258 (0.0013)	0.8950 (0.0097)	0.0024 (0.0001)	1000
Gompertz	-0.5033	0.0016	0.0402 (0.0009)	-0.0033 (0.0013)	0.9400 (0.0075)	0.0016 (0.0001)	1000
RP (3)	-0.5021	0.0016	0.0396 (0.0009)	-0.0021 (0.0013)	0.9459 (0.0072)	0.0016 (0.0001)	999
RP (5)	-0.5018	0.0016	0.0395 (0.0009)	-0.0018 (0.0012)	0.9450 (0.0072)	0.0016 (0.0001)	1000
RP (9)	-0.5019	0.0016	0.0395 (0.0009)	-0.0019 (0.0013)	0.9450 (0.0072)	0.0016 (0.0001)	1000
RP (P)	-0.5024	0.0016	0.0396 (0.0009)	-0.0024 (0.0013)	0.9450 (0.0072)	0.0016 (0.0001)	1000
FP (W)	-0.5258	0.0016	0.0417 (0.0009)	-0.0258 (0.0013)	0.8949 (0.0097)	0.0024 (0.0001)	999
FP (k=10)	-0.4975	0.0016	0.0396 (0.0009)	0.0025 (0.0013)	0.9400 (0.0075)	0.0016 (0.0001)	1000
FP (k=10000)	-0.5197	0.0016	0.0473 (0.0011)	-0.0197 (0.0015)	0.8810 (0.0102)	0.0026 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5018	0.0016	0.0395 (0.0009)	-0.0018 (0.0012)	0.9450 (0.0072)	0.0016 (0.0001)	1000
Exp	-0.3956	0.0015	0.0317 (0.0007)	0.1044 (0.0010)	0.1800 (0.0121)	0.0119 (0.0002)	1000
Weibull	-0.5258	0.0016	0.0416 (0.0009)	-0.0258 (0.0013)	0.8950 (0.0097)	0.0024 (0.0001)	1000
Gompertz	-0.5033	0.0016	0.0401 (0.0009)	-0.0033 (0.0013)	0.9389 (0.0076)	0.0016 (0.0001)	998
RP (3)	-0.5021	0.0016	0.0396 (0.0009)	-0.0021 (0.0013)	0.9460 (0.0071)	0.0016 (0.0001)	1000
RP (5)	-0.5018	0.0016	0.0395 (0.0009)	-0.0018 (0.0012)	0.9430 (0.0073)	0.0016 (0.0001)	1000
RP (9)	-0.5019	0.0016	0.0395 (0.0009)	-0.0019 (0.0012)	0.9440 (0.0073)	0.0016 (0.0001)	1000
RP (P)	-0.5024	0.0016	0.0395 (0.0009)	-0.0024 (0.0013)	0.9450 (0.0072)	0.0016 (0.0001)	1000
FP (W)	-0.5279	0.0016	0.0426 (0.0012)	-0.0279 (0.0017)	0.8792 (0.0127)	0.0026 (0.0001)	662
FP (k=10)	-0.4972	0.0016	0.0405 (0.0009)	0.0028 (0.0013)	0.9399 (0.0077)	0.0016 (0.0001)	965
FP (k=10000)	-0.5236	0.0014	0.0454 (0.0010)	-0.0236 (0.0014)	0.8619 (0.0110)	0.0026 (0.0001)	985

Table 50: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5011	0.0018	0.0412 (0.0009)	-0.0011 (0.0013)	0.9622 (0.0061)	0.0017 (0.0001)	979
Exp	-0.5294	0.0018	0.0435 (0.0010)	-0.0294 (0.0014)	0.8900 (0.0099)	0.0027 (0.0001)	1000
Weibull	-0.5064	0.0018	0.0416 (0.0009)	-0.0064 (0.0013)	0.9530 (0.0067)	0.0018 (0.0001)	1000
Gompertz	-0.5322	0.0018	0.0419 (0.0014)	-0.0322 (0.0019)	0.8841 (0.0146)	0.0028 (0.0002)	483
RP (3)	-0.5014	0.0018	0.0413 (0.0009)	-0.0014 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
RP (5)	-0.5014	0.0018	0.0413 (0.0009)	-0.0014 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
RP (9)	-0.5015	0.0018	0.0413 (0.0009)	-0.0015 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
RP (P)	-0.5017	0.0018	0.0413 (0.0009)	-0.0017 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
FP (W)	-0.5063	0.0018	0.0416 (0.0009)	-0.0063 (0.0013)	0.9529 (0.0067)	0.0018 (0.0001)	998
FP (k=10)	-0.4996	0.0018	0.0413 (0.0009)	0.0004 (0.0013)	0.9650 (0.0058)	0.0017 (0.0001)	1000
FP (k=10000)	-0.4980	0.0018	0.0411 (0.0009)	0.0020 (0.0013)	0.9620 (0.0060)	0.0017 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5015	0.0018	0.0413 (0.0009)	-0.0015 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
Exp	-0.5294	0.0018	0.0434 (0.0010)	-0.0294 (0.0014)	0.8890 (0.0099)	0.0028 (0.0001)	1000
Weibull	-0.5065	0.0018	0.0416 (0.0009)	-0.0065 (0.0013)	0.9530 (0.0067)	0.0018 (0.0001)	1000
Gompertz	-0.5311	0.0018	0.0421 (0.0014)	-0.0311 (0.0019)	0.8887 (0.0143)	0.0027 (0.0002)	485
RP (3)	-0.5015	0.0018	0.0413 (0.0009)	-0.0015 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
RP (5)	-0.5015	0.0018	0.0413 (0.0009)	-0.0015 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
RP (9)	-0.5015	0.0018	0.0413 (0.0009)	-0.0015 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
RP (P)	-0.5018	0.0018	0.0413 (0.0009)	-0.0018 (0.0013)	0.9610 (0.0061)	0.0017 (0.0001)	1000
FP (W)	-0.5078	0.0018	0.0417 (0.0011)	-0.0078 (0.0015)	0.9579 (0.0072)	0.0018 (0.0001)	784
FP (k=10)	-0.4996	0.0018	0.0416 (0.0009)	0.0004 (0.0013)	0.9559 (0.0066)	0.0017 (0.0001)	974
FP (k=10000)	-0.4985	0.0017	0.0414 (0.0009)	0.0015 (0.0013)	0.9544 (0.0066)	0.0017 (0.0001)	987

Table 51: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4996	0.0017	0.0391 (0.0009)	0.0004 (0.0013)	0.9599 (0.0063)	0.0015 (0.0001)	973
Exp	-0.4996	0.0016	0.0389 (0.0009)	0.0004 (0.0012)	0.9540 (0.0066)	0.0015 (0.0001)	1000
Weibull	-0.4998	0.0017	0.0390 (0.0009)	0.0002 (0.0012)	0.9580 (0.0063)	0.0015 (0.0001)	1000
Gompertz	-0.5004	0.0017	0.0385 (0.0012)	-0.0004 (0.0017)	0.9564 (0.0089)	0.0015 (0.0001)	528
RP (3)	-0.4994	0.0017	0.0391 (0.0009)	0.0006 (0.0012)	0.9609 (0.0061)	0.0015 (0.0001)	998
RP (5)	-0.4995	0.0017	0.0391 (0.0009)	0.0005 (0.0012)	0.9600 (0.0062)	0.0015 (0.0001)	1000
RP (9)	-0.4995	0.0017	0.0391 (0.0009)	0.0005 (0.0012)	0.9600 (0.0062)	0.0015 (0.0001)	1000
RP (P)	-0.4996	0.0017	0.0391 (0.0009)	0.0004 (0.0012)	0.9570 (0.0064)	0.0015 (0.0001)	1000
FP (W)	-0.4998	0.0017	0.0390 (0.0009)	0.0002 (0.0012)	0.9580 (0.0063)	0.0015 (0.0001)	999
FP (k=10)	-0.4985	0.0017	0.0392 (0.0009)	0.0015 (0.0012)	0.9590 (0.0063)	0.0015 (0.0001)	1000
FP (k=10000)	-0.4989	0.0016	0.0391 (0.0009)	0.0011 (0.0012)	0.9580 (0.0063)	0.0015 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4995	0.0017	0.0391 (0.0009)	0.0005 (0.0012)	0.9590 (0.0063)	0.0015 (0.0001)	1000
Exp	-0.4996	0.0016	0.0389 (0.0009)	0.0004 (0.0012)	0.9550 (0.0066)	0.0015 (0.0001)	1000
Weibull	-0.4999	0.0017	0.0390 (0.0009)	0.0001 (0.0012)	0.9570 (0.0064)	0.0015 (0.0001)	1000
Gompertz	-0.4987	0.0017	0.0385 (0.0012)	0.0013 (0.0016)	0.9494 (0.0093)	0.0015 (0.0001)	553
RP (3)	-0.4995	0.0017	0.0391 (0.0009)	0.0005 (0.0012)	0.9610 (0.0061)	0.0015 (0.0001)	1000
RP (5)	-0.4996	0.0017	0.0391 (0.0009)	0.0004 (0.0012)	0.9590 (0.0063)	0.0015 (0.0001)	1000
RP (9)	-0.4996	0.0017	0.0391 (0.0009)	0.0004 (0.0012)	0.9590 (0.0063)	0.0015 (0.0001)	1000
RP (P)	-0.4997	0.0017	0.0391 (0.0009)	0.0003 (0.0012)	0.9570 (0.0064)	0.0015 (0.0001)	1000
FP (W)	-0.5020	0.0017	0.0397 (0.0010)	-0.0020 (0.0015)	0.9547 (0.0077)	0.0016 (0.0001)	729
FP (k=10)	-0.4981	0.0017	0.0394 (0.0009)	0.0019 (0.0013)	0.9573 (0.0065)	0.0016 (0.0001)	960
FP (k=10000)	-0.4996	0.0015	0.0396 (0.0009)	0.0004 (0.0013)	0.9473 (0.0071)	0.0016 (0.0001)	986

Table 52: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5007	0.0019	0.0439 (0.0010)	-0.0007 (0.0014)	0.9563 (0.0065)	0.0019 (0.0001)	985
Exp	-0.5537	0.0019	0.0486 (0.0011)	-0.0537 (0.0015)	0.7390 (0.0139)	0.0052 (0.0002)	1000
Weibull	-0.5020	0.0019	0.0437 (0.0010)	-0.0020 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
Gompertz	-0.5534	0.0019	0.0489 (0.0017)	-0.0534 (0.0024)	0.7494 (0.0215)	0.0052 (0.0003)	407
RP (3)	-0.5010	0.0019	0.0438 (0.0010)	-0.0010 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	999
RP (5)	-0.5011	0.0019	0.0438 (0.0010)	-0.0011 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (9)	-0.5011	0.0019	0.0438 (0.0010)	-0.0011 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (P)	-0.5014	0.0019	0.0438 (0.0010)	-0.0014 (0.0014)	0.9540 (0.0066)	0.0019 (0.0001)	1000
FP (W)	-0.5020	0.0019	0.0437 (0.0010)	-0.0020 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
FP (k=10)	-0.4979	0.0019	0.0439 (0.0010)	0.0021 (0.0014)	0.9540 (0.0066)	0.0019 (0.0001)	1000
FP (k=10000)	-0.5075	0.0018	0.0449 (0.0010)	-0.0075 (0.0014)	0.9400 (0.0075)	0.0021 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5012	0.0019	0.0438 (0.0010)	-0.0012 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
Exp	-0.5538	0.0019	0.0486 (0.0011)	-0.0538 (0.0015)	0.7390 (0.0139)	0.0053 (0.0002)	1000
Weibull	-0.5020	0.0019	0.0437 (0.0010)	-0.0020 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	999
Gompertz	-0.5527	0.0019	0.0480 (0.0016)	-0.0527 (0.0023)	0.7454 (0.0210)	0.0051 (0.0003)	432
RP (3)	-0.5011	0.0019	0.0438 (0.0010)	-0.0011 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (5)	-0.5012	0.0019	0.0438 (0.0010)	-0.0012 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
RP (9)	-0.5012	0.0019	0.0438 (0.0010)	-0.0012 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
RP (P)	-0.5015	0.0019	0.0438 (0.0010)	-0.0015 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
FP (W)	-0.5021	0.0019	0.0447 (0.0011)	-0.0021 (0.0016)	0.9505 (0.0076)	0.0020 (0.0001)	808
FP (k=10)	-0.4980	0.0019	0.0444 (0.0010)	0.0020 (0.0014)	0.9516 (0.0069)	0.0020 (0.0001)	971
FP (k=10000)	-0.5061	0.0018	0.0452 (0.0010)	-0.0061 (0.0014)	0.9325 (0.0080)	0.0021 (0.0001)	993

Table 53: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4983	0.0015	0.0408 (0.0009)	0.0017 (0.0013)	0.9400 (0.0076)	0.0017 (0.0001)	983
Exp	-0.4228	0.0015	0.0338 (0.0008)	0.0772 (0.0011)	0.4580 (0.0158)	0.0071 (0.0002)	1000
Weibull	-0.4749	0.0015	0.0385 (0.0009)	0.0251 (0.0012)	0.8980 (0.0096)	0.0021 (0.0001)	1000
Gompertz	-0.4981	0.0015	0.0413 (0.0009)	0.0019 (0.0013)	0.9358 (0.0078)	0.0017 (0.0001)	997
RP (3)	-0.4977	0.0015	0.0406 (0.0009)	0.0023 (0.0013)	0.9400 (0.0075)	0.0017 (0.0001)	1000
RP (5)	-0.4984	0.0015	0.0407 (0.0009)	0.0016 (0.0013)	0.9410 (0.0075)	0.0017 (0.0001)	1000
RP (9)	-0.4986	0.0015	0.0407 (0.0009)	0.0014 (0.0013)	0.9410 (0.0075)	0.0017 (0.0001)	1000
RP (P)	-0.4956	0.0015	0.0404 (0.0009)	0.0044 (0.0013)	0.9410 (0.0075)	0.0017 (0.0001)	1000
FP (W)	-0.4748	0.0015	0.0384 (0.0009)	0.0252 (0.0012)	0.8998 (0.0095)	0.0021 (0.0001)	998
FP (k=10)	-0.4977	0.0015	0.0407 (0.0009)	0.0023 (0.0013)	0.9390 (0.0076)	0.0017 (0.0001)	1000
FP (k=10000)	-0.4954	0.0014	0.0404 (0.0009)	0.0046 (0.0013)	0.9280 (0.0082)	0.0016 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4986	0.0015	0.0407 (0.0009)	0.0014 (0.0013)	0.9410 (0.0075)	0.0017 (0.0001)	1000
Exp	-0.4228	0.0015	0.0338 (0.0008)	0.0772 (0.0011)	0.4595 (0.0158)	0.0071 (0.0002)	999
Weibull	-0.4749	0.0015	0.0385 (0.0009)	0.0251 (0.0012)	0.8980 (0.0096)	0.0021 (0.0001)	1000
Gompertz	-0.4981	0.0015	0.0413 (0.0009)	0.0019 (0.0013)	0.9367 (0.0077)	0.0017 (0.0001)	995
RP (3)	-0.4977	0.0015	0.0406 (0.0009)	0.0023 (0.0013)	0.9400 (0.0075)	0.0017 (0.0001)	1000
RP (5)	-0.4984	0.0015	0.0407 (0.0009)	0.0016 (0.0013)	0.9400 (0.0075)	0.0017 (0.0001)	1000
RP (9)	-0.4986	0.0015	0.0407 (0.0009)	0.0014 (0.0013)	0.9410 (0.0075)	0.0017 (0.0001)	1000
RP (P)	-0.4957	0.0015	0.0404 (0.0009)	0.0043 (0.0013)	0.9410 (0.0075)	0.0017 (0.0001)	1000
FP (W)	-0.4770	0.0015	0.0394 (0.0011)	0.0230 (0.0015)	0.9066 (0.0114)	0.0021 (0.0001)	653
FP (k=10)	-0.4978	0.0015	0.0412 (0.0009)	0.0022 (0.0013)	0.9363 (0.0079)	0.0017 (0.0001)	957
FP (k=10000)	-0.4971	0.0013	0.0410 (0.0009)	0.0029 (0.0013)	0.9156 (0.0089)	0.0017 (0.0001)	983

Table 54: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4996	0.0015	0.0395 (0.0009)	0.0004 (0.0013)	0.9489 (0.0070)	0.0016 (0.0001)	978
Exp	-0.3862	0.0015	0.0317 (0.0007)	0.1138 (0.0010)	0.1120 (0.0100)	0.0139 (0.0002)	1000
Weibull	-0.5243	0.0015	0.0416 (0.0009)	-0.0243 (0.0013)	0.8870 (0.0100)	0.0023 (0.0001)	1000
Gompertz	-0.4999	0.0015	0.0401 (0.0009)	0.0001 (0.0013)	0.9440 (0.0073)	0.0016 (0.0001)	1000
RP (3)	-0.4994	0.0015	0.0396 (0.0009)	0.0006 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
RP (5)	-0.4994	0.0015	0.0395 (0.0009)	0.0006 (0.0013)	0.9498 (0.0069)	0.0016 (0.0001)	996
RP (9)	-0.4994	0.0015	0.0395 (0.0009)	0.0006 (0.0012)	0.9490 (0.0070)	0.0016 (0.0001)	1000
RP (P)	-0.4999	0.0015	0.0396 (0.0009)	0.0001 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
FP (W)	-0.5243	0.0015	0.0416 (0.0009)	-0.0243 (0.0013)	0.8869 (0.0100)	0.0023 (0.0001)	999
FP (k=10)	-0.4945	0.0015	0.0396 (0.0009)	0.0055 (0.0013)	0.9440 (0.0073)	0.0016 (0.0001)	1000
FP (k=10000)	-0.5370	0.0015	0.0437 (0.0011)	-0.0370 (0.0016)	0.7931 (0.0145)	0.0033 (0.0001)	778
Model frailty: Normal							
Cox	-0.4994	0.0015	0.0395 (0.0009)	0.0006 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
Exp	-0.3862	0.0015	0.0317 (0.0007)	0.1138 (0.0010)	0.1120 (0.0100)	0.0140 (0.0002)	1000
Weibull	-0.5243	0.0015	0.0416 (0.0009)	-0.0243 (0.0013)	0.8870 (0.0100)	0.0023 (0.0001)	1000
Gompertz	-0.4998	0.0015	0.0401 (0.0009)	0.0002 (0.0013)	0.9430 (0.0073)	0.0016 (0.0001)	1000
RP (3)	-0.4994	0.0015	0.0396 (0.0009)	0.0006 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
RP (5)	-0.4993	0.0015	0.0395 (0.0009)	0.0007 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
RP (9)	-0.4995	0.0015	0.0395 (0.0009)	0.0005 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
RP (P)	-0.4999	0.0015	0.0396 (0.0009)	0.0001 (0.0013)	0.9460 (0.0071)	0.0016 (0.0001)	1000
FP (W)	-0.5253	0.0015	0.0423 (0.0012)	-0.0253 (0.0017)	0.8874 (0.0131)	0.0024 (0.0001)	586
FP (k=10)	-0.4948	0.0015	0.0401 (0.0009)	0.0052 (0.0013)	0.9440 (0.0074)	0.0016 (0.0001)	964
FP (k=10000)	-0.5282	0.0013	0.0454 (0.0010)	-0.0282 (0.0014)	0.8079 (0.0125)	0.0029 (0.0001)	989

Table 55: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5012	0.0018	0.0404 (0.0009)	-0.0012 (0.0013)	0.9595 (0.0063)	0.0016 (0.0001)	988
Exp	-0.5302	0.0017	0.0426 (0.0010)	-0.0302 (0.0013)	0.8850 (0.0101)	0.0027 (0.0001)	1000
Weibull	-0.5059	0.0018	0.0407 (0.0009)	-0.0059 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
Gompertz	-0.5299	0.0018	0.0423 (0.0014)	-0.0299 (0.0019)	0.8987 (0.0139)	0.0027 (0.0002)	474
RP (3)	-0.5011	0.0018	0.0404 (0.0009)	-0.0011 (0.0013)	0.9579 (0.0064)	0.0016 (0.0001)	998
RP (5)	-0.5013	0.0018	0.0404 (0.0009)	-0.0013 (0.0013)	0.9580 (0.0063)	0.0016 (0.0001)	1000
RP (9)	-0.5014	0.0018	0.0404 (0.0009)	-0.0014 (0.0013)	0.9600 (0.0062)	0.0016 (0.0001)	1000
RP (P)	-0.5016	0.0018	0.0404 (0.0009)	-0.0016 (0.0013)	0.9570 (0.0064)	0.0016 (0.0001)	1000
FP (W)	-0.5059	0.0018	0.0407 (0.0009)	-0.0059 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
FP (k=10)	-0.4996	0.0018	0.0404 (0.0009)	0.0004 (0.0013)	0.9560 (0.0065)	0.0016 (0.0001)	1000
FP (k=10000)	-0.4977	0.0017	0.0402 (0.0009)	0.0023 (0.0013)	0.9550 (0.0066)	0.0016 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5014	0.0018	0.0404 (0.0009)	-0.0014 (0.0013)	0.9600 (0.0062)	0.0016 (0.0001)	1000
Exp	-0.5302	0.0017	0.0426 (0.0010)	-0.0302 (0.0013)	0.8838 (0.0101)	0.0027 (0.0001)	998
Weibull	-0.5060	0.0018	0.0407 (0.0009)	-0.0060 (0.0013)	0.9550 (0.0066)	0.0017 (0.0001)	1000
Gompertz	-0.5288	0.0018	0.0418 (0.0014)	-0.0288 (0.0019)	0.9011 (0.0137)	0.0026 (0.0001)	475
RP (3)	-0.5013	0.0018	0.0404 (0.0009)	-0.0013 (0.0013)	0.9570 (0.0064)	0.0016 (0.0001)	1000
RP (5)	-0.5014	0.0018	0.0404 (0.0009)	-0.0014 (0.0013)	0.9590 (0.0063)	0.0016 (0.0001)	1000
RP (9)	-0.5015	0.0018	0.0404 (0.0009)	-0.0015 (0.0013)	0.9590 (0.0063)	0.0016 (0.0001)	1000
RP (P)	-0.5017	0.0018	0.0405 (0.0009)	-0.0017 (0.0013)	0.9580 (0.0063)	0.0016 (0.0001)	1000
FP (W)	-0.5075	0.0018	0.0413 (0.0010)	-0.0075 (0.0015)	0.9574 (0.0073)	0.0018 (0.0001)	775
FP (k=10)	-0.4993	0.0018	0.0411 (0.0009)	0.0007 (0.0013)	0.9549 (0.0066)	0.0017 (0.0001)	976
FP (k=10000)	-0.4983	0.0016	0.0408 (0.0009)	0.0017 (0.0013)	0.9490 (0.0070)	0.0017 (0.0001)	980

Table 56: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4998	0.0021	0.0446 (0.0010)	0.0002 (0.0014)	0.9576 (0.0064)	0.0020 (0.0001)	991
Exp	-0.5001	0.0021	0.0438 (0.0010)	-0.0001 (0.0014)	0.9660 (0.0057)	0.0019 (0.0001)	1000
Weibull	-0.5011	0.0021	0.0445 (0.0010)	-0.0011 (0.0014)	0.9600 (0.0062)	0.0020 (0.0001)	1000
Gompertz	-0.5028	0.0021	0.0444 (0.0016)	-0.0028 (0.0022)	0.9627 (0.0095)	0.0020 (0.0001)	402
RP (3)	-0.4995	0.0021	0.0445 (0.0010)	0.0005 (0.0014)	0.9590 (0.0063)	0.0020 (0.0001)	1000
RP (5)	-0.4999	0.0021	0.0446 (0.0010)	0.0001 (0.0014)	0.9580 (0.0063)	0.0020 (0.0001)	1000
RP (9)	-0.5001	0.0021	0.0446 (0.0010)	-0.0001 (0.0014)	0.9580 (0.0063)	0.0020 (0.0001)	1000
RP (P)	-0.5006	0.0021	0.0446 (0.0010)	-0.0006 (0.0014)	0.9610 (0.0061)	0.0020 (0.0001)	1000
FP (W)	-0.5011	0.0021	0.0445 (0.0010)	-0.0011 (0.0014)	0.9600 (0.0062)	0.0020 (0.0001)	1000
FP (k=10)	-0.4990	0.0021	0.0445 (0.0010)	0.0010 (0.0014)	0.9570 (0.0064)	0.0020 (0.0001)	1000
FP (k=10000)	-0.4982	0.0021	0.0440 (0.0010)	0.0018 (0.0014)	0.9549 (0.0066)	0.0019 (0.0001)	998
Model frailty: Normal							
Cox	-0.5002	0.0021	0.0446 (0.0010)	-0.0002 (0.0014)	0.9580 (0.0063)	0.0020 (0.0001)	999
Exp	-0.5002	0.0021	0.0436 (0.0010)	-0.0002 (0.0014)	0.9668 (0.0057)	0.0019 (0.0001)	995
Weibull	-0.5012	0.0021	0.0445 (0.0010)	-0.0012 (0.0014)	0.9598 (0.0062)	0.0020 (0.0001)	995
Gompertz	-0.4981	0.0021	0.0447 (0.0016)	0.0019 (0.0022)	0.9583 (0.0099)	0.0020 (0.0002)	408
RP (3)	-0.4996	0.0021	0.0445 (0.0010)	0.0004 (0.0014)	0.9590 (0.0063)	0.0020 (0.0001)	1000
RP (5)	-0.5001	0.0021	0.0446 (0.0010)	-0.0001 (0.0014)	0.9580 (0.0063)	0.0020 (0.0001)	1000
RP (9)	-0.5002	0.0021	0.0446 (0.0010)	-0.0002 (0.0014)	0.9580 (0.0063)	0.0020 (0.0001)	1000
RP (P)	-0.5007	0.0021	0.0446 (0.0010)	-0.0007 (0.0014)	0.9610 (0.0061)	0.0020 (0.0001)	1000
FP (W)	-0.5022	0.0021	0.0451 (0.0013)	-0.0022 (0.0018)	0.9548 (0.0084)	0.0020 (0.0001)	619
FP (k=10)	-0.4980	0.0021	0.0461 (0.0011)	0.0020 (0.0015)	0.9418 (0.0078)	0.0021 (0.0001)	893
FP (k=10000)	-0.4978	0.0019	0.0445 (0.0010)	0.0022 (0.0015)	0.9390 (0.0078)	0.0020 (0.0001)	935

Table 57: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4983	0.0023	0.0480 (0.0011)	0.0017 (0.0015)	0.9507 (0.0069)	0.0023 (0.0001)	994
Exp	-0.5870	0.0023	0.0570 (0.0013)	-0.0870 (0.0018)	0.5370 (0.0158)	0.0108 (0.0003)	1000
Weibull	-0.5023	0.0023	0.0481 (0.0011)	-0.0023 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
Gompertz	-0.5878	0.0023	0.0567 (0.0021)	-0.0878 (0.0030)	0.5192 (0.0262)	0.0109 (0.0005)	364
RP (3)	-0.4981	0.0023	0.0478 (0.0011)	0.0019 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
RP (5)	-0.4987	0.0023	0.0479 (0.0011)	0.0013 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (9)	-0.4989	0.0023	0.0479 (0.0011)	0.0011 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
RP (P)	-0.4989	0.0023	0.0479 (0.0011)	0.0011 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
FP (W)	-0.5023	0.0023	0.0481 (0.0011)	-0.0023 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
FP (k=10)	-0.5010	0.0023	0.0492 (0.0011)	-0.0010 (0.0016)	0.9470 (0.0071)	0.0024 (0.0001)	1000
FP (k=10000)	-0.5442	0.0022	0.0530 (0.0012)	-0.0442 (0.0017)	0.8030 (0.0126)	0.0048 (0.0002)	1000
Model frailty: Normal							
Cox	-0.4988	0.0023	0.0479 (0.0011)	0.0012 (0.0015)	0.9499 (0.0069)	0.0023 (0.0001)	998
Exp	-0.5867	0.0023	0.0569 (0.0013)	-0.0867 (0.0018)	0.5392 (0.0158)	0.0108 (0.0003)	996
Weibull	-0.5025	0.0023	0.0481 (0.0011)	-0.0025 (0.0015)	0.9497 (0.0069)	0.0023 (0.0001)	995
Gompertz	-0.5872	0.0023	0.0550 (0.0020)	-0.0872 (0.0028)	0.5547 (0.0257)	0.0106 (0.0005)	375
RP (3)	-0.4982	0.0023	0.0478 (0.0011)	0.0018 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
RP (5)	-0.4989	0.0023	0.0479 (0.0011)	0.0011 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
RP (9)	-0.4991	0.0023	0.0479 (0.0011)	0.0009 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
RP (P)	-0.4991	0.0023	0.0479 (0.0011)	0.0009 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
FP (W)	-0.5013	0.0023	0.0492 (0.0013)	-0.0013 (0.0018)	0.9451 (0.0085)	0.0024 (0.0001)	711
FP (k=10)	-0.4995	0.0023	0.0508 (0.0012)	0.0005 (0.0017)	0.9356 (0.0082)	0.0026 (0.0001)	901
FP (k=10000)	-0.5369	0.0021	0.0542 (0.0012)	-0.0369 (0.0018)	0.8080 (0.0128)	0.0043 (0.0002)	948

Table 58: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4997	0.0019	0.0431 (0.0010)	0.0003 (0.0014)	0.9425 (0.0074)	0.0019 (0.0001)	991
Exp	-0.4580	0.0018	0.0393 (0.0009)	0.0420 (0.0012)	0.8480 (0.0114)	0.0033 (0.0001)	1000
Weibull	-0.4954	0.0018	0.0429 (0.0010)	0.0046 (0.0014)	0.9410 (0.0075)	0.0019 (0.0001)	1000
Gompertz	-0.4585	0.0018	0.0396 (0.0014)	0.0415 (0.0020)	0.8499 (0.0176)	0.0033 (0.0002)	413
RP (3)	-0.5009	0.0019	0.0433 (0.0010)	-0.0009 (0.0014)	0.9400 (0.0075)	0.0019 (0.0001)	1000
RP (5)	-0.4998	0.0019	0.0432 (0.0010)	0.0002 (0.0014)	0.9410 (0.0075)	0.0019 (0.0001)	1000
RP (9)	-0.4999	0.0019	0.0431 (0.0010)	0.0001 (0.0014)	0.9420 (0.0074)	0.0019 (0.0001)	1000
RP (P)	-0.5000	0.0019	0.0432 (0.0010)	-0.0000 (0.0014)	0.9430 (0.0073)	0.0019 (0.0001)	1000
FP (W)	-0.4954	0.0018	0.0429 (0.0010)	0.0046 (0.0014)	0.9409 (0.0075)	0.0019 (0.0001)	999
FP (k=10)	-0.4992	0.0019	0.0432 (0.0010)	0.0008 (0.0014)	0.9400 (0.0075)	0.0019 (0.0001)	1000
FP (k=10000)	-0.4992	0.0018	0.0433 (0.0011)	0.0008 (0.0015)	0.9370 (0.0084)	0.0019 (0.0001)	841
Model frailty: Normal							
Cox	-0.4999	0.0019	0.0431 (0.0010)	0.0001 (0.0014)	0.9418 (0.0074)	0.0019 (0.0001)	997
Exp	-0.4579	0.0018	0.0393 (0.0009)	0.0421 (0.0012)	0.8475 (0.0114)	0.0033 (0.0001)	997
Weibull	-0.4954	0.0018	0.0429 (0.0010)	0.0046 (0.0014)	0.9409 (0.0075)	0.0019 (0.0001)	998
Gompertz	-0.4589	0.0018	0.0417 (0.0014)	0.0411 (0.0020)	0.8361 (0.0180)	0.0034 (0.0002)	421
RP (3)	-0.5010	0.0019	0.0433 (0.0010)	-0.0010 (0.0014)	0.9400 (0.0075)	0.0019 (0.0001)	1000
RP (5)	-0.4998	0.0019	0.0432 (0.0010)	0.0002 (0.0014)	0.9420 (0.0074)	0.0019 (0.0001)	1000
RP (9)	-0.4999	0.0019	0.0431 (0.0010)	0.0001 (0.0014)	0.9430 (0.0073)	0.0019 (0.0001)	1000
RP (P)	-0.5001	0.0019	0.0432 (0.0010)	-0.0001 (0.0014)	0.9420 (0.0074)	0.0019 (0.0001)	1000
FP (W)	-0.4947	0.0018	0.0435 (0.0013)	0.0053 (0.0018)	0.9302 (0.0105)	0.0019 (0.0001)	587
FP (k=10)	-0.4964	0.0018	0.0439 (0.0010)	0.0036 (0.0015)	0.9412 (0.0078)	0.0019 (0.0001)	902
FP (k=10000)	-0.4982	0.0016	0.0449 (0.0011)	0.0018 (0.0015)	0.9230 (0.0089)	0.0020 (0.0001)	896

Table 59: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4982	0.0019	0.0423 (0.0009)	0.0018 (0.0013)	0.9609 (0.0061)	0.0018 (0.0001)	997
Exp	-0.3567	0.0019	0.0361 (0.0008)	0.1433 (0.0011)	0.0640 (0.0077)	0.0218 (0.0003)	1000
Weibull	-0.4960	0.0019	0.0423 (0.0009)	0.0040 (0.0013)	0.9620 (0.0060)	0.0018 (0.0001)	1000
Gompertz	-0.3590	0.0019	0.0371 (0.0012)	0.1410 (0.0016)	0.0799 (0.0120)	0.0213 (0.0005)	513
RP (3)	-0.4977	0.0019	0.0422 (0.0009)	0.0023 (0.0013)	0.9630 (0.0060)	0.0018 (0.0001)	1000
RP (5)	-0.4983	0.0019	0.0422 (0.0009)	0.0017 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
RP (9)	-0.4985	0.0019	0.0423 (0.0009)	0.0015 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
RP (P)	-0.4969	0.0019	0.0421 (0.0009)	0.0031 (0.0013)	0.9620 (0.0060)	0.0018 (0.0001)	1000
FP (W)	-0.4960	0.0019	0.0423 (0.0009)	0.0040 (0.0013)	0.9620 (0.0060)	0.0018 (0.0001)	1000
FP (k=10)	-0.4893	0.0019	0.0421 (0.0009)	0.0107 (0.0013)	0.9560 (0.0065)	0.0019 (0.0001)	1000
FP (k=10000)	-0.4850	0.0020	0.0428 (0.0012)	0.0150 (0.0017)	0.9528 (0.0086)	0.0021 (0.0001)	614
Model frailty: Normal							
Cox	-0.4985	0.0019	0.0423 (0.0009)	0.0015 (0.0013)	0.9609 (0.0061)	0.0018 (0.0001)	997
Exp	-0.3566	0.0019	0.0362 (0.0008)	0.1434 (0.0011)	0.0643 (0.0078)	0.0219 (0.0003)	995
Weibull	-0.4961	0.0019	0.0423 (0.0009)	0.0039 (0.0013)	0.9618 (0.0061)	0.0018 (0.0001)	996
Gompertz	-0.3586	0.0019	0.0365 (0.0012)	0.1414 (0.0016)	0.0775 (0.0119)	0.0213 (0.0005)	503
RP (3)	-0.4978	0.0019	0.0423 (0.0009)	0.0022 (0.0013)	0.9630 (0.0060)	0.0018 (0.0001)	1000
RP (5)	-0.4984	0.0019	0.0422 (0.0009)	0.0016 (0.0013)	0.9590 (0.0063)	0.0018 (0.0001)	1000
RP (9)	-0.4986	0.0019	0.0423 (0.0009)	0.0014 (0.0013)	0.9600 (0.0062)	0.0018 (0.0001)	1000
RP (P)	-0.4970	0.0019	0.0421 (0.0009)	0.0030 (0.0013)	0.9610 (0.0061)	0.0018 (0.0001)	1000
FP (W)	-0.4943	0.0019	0.0427 (0.0013)	0.0057 (0.0018)	0.9535 (0.0091)	0.0019 (0.0001)	538
FP (k=10)	-0.4899	0.0019	0.0436 (0.0010)	0.0101 (0.0014)	0.9538 (0.0070)	0.0020 (0.0001)	909
FP (k=10000)	-0.4986	0.0017	0.0521 (0.0012)	0.0014 (0.0017)	0.8679 (0.0111)	0.0027 (0.0001)	931

Table 60: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4986	0.0022	0.0464 (0.0010)	0.0014 (0.0015)	0.9415 (0.0074)	0.0022 (0.0001)	992
Exp	-0.5228	0.0021	0.0479 (0.0011)	-0.0228 (0.0015)	0.9050 (0.0093)	0.0028 (0.0001)	1000
Weibull	-0.4883	0.0022	0.0454 (0.0010)	0.0117 (0.0014)	0.9490 (0.0070)	0.0022 (0.0001)	1000
Gompertz	-0.5221	0.0022	0.0472 (0.0017)	-0.0221 (0.0024)	0.9046 (0.0149)	0.0027 (0.0002)	388
RP (3)	-0.4937	0.0022	0.0460 (0.0010)	0.0063 (0.0015)	0.9460 (0.0071)	0.0022 (0.0001)	1000
RP (5)	-0.4982	0.0022	0.0464 (0.0010)	0.0018 (0.0015)	0.9430 (0.0073)	0.0022 (0.0001)	1000
RP (9)	-0.4989	0.0022	0.0464 (0.0010)	0.0011 (0.0015)	0.9420 (0.0074)	0.0022 (0.0001)	1000
RP (P)	-0.4981	0.0022	0.0464 (0.0010)	0.0019 (0.0015)	0.9418 (0.0074)	0.0022 (0.0001)	997
FP (W)	-0.4883	0.0022	0.0454 (0.0010)	0.0117 (0.0014)	0.9490 (0.0070)	0.0022 (0.0001)	1000
FP (k=10)	-0.4994	0.0022	0.0468 (0.0010)	0.0006 (0.0015)	0.9450 (0.0072)	0.0022 (0.0001)	1000
FP (k=10000)	-0.4987	0.0021	0.0464 (0.0010)	0.0013 (0.0015)	0.9440 (0.0073)	0.0021 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4989	0.0022	0.0464 (0.0010)	0.0011 (0.0015)	0.9428 (0.0074)	0.0021 (0.0001)	996
Exp	-0.5228	0.0021	0.0480 (0.0011)	-0.0228 (0.0015)	0.9045 (0.0093)	0.0028 (0.0001)	995
Weibull	-0.4884	0.0022	0.0454 (0.0010)	0.0116 (0.0014)	0.9509 (0.0068)	0.0022 (0.0001)	997
Gompertz	-0.5206	0.0022	0.0464 (0.0016)	-0.0206 (0.0023)	0.9122 (0.0140)	0.0026 (0.0002)	410
RP (3)	-0.4938	0.0022	0.0461 (0.0010)	0.0062 (0.0015)	0.9470 (0.0071)	0.0022 (0.0001)	1000
RP (5)	-0.4983	0.0022	0.0464 (0.0010)	0.0017 (0.0015)	0.9430 (0.0073)	0.0022 (0.0001)	1000
RP (9)	-0.4991	0.0022	0.0464 (0.0010)	0.0009 (0.0015)	0.9420 (0.0074)	0.0022 (0.0001)	1000
RP (P)	-0.4983	0.0022	0.0464 (0.0010)	0.0017 (0.0015)	0.9420 (0.0074)	0.0022 (0.0001)	1000
FP (W)	-0.4892	0.0021	0.0452 (0.0012)	0.0108 (0.0017)	0.9496 (0.0084)	0.0022 (0.0001)	674
FP (k=10)	-0.4977	0.0022	0.0476 (0.0011)	0.0023 (0.0016)	0.9429 (0.0078)	0.0023 (0.0001)	893
FP (k=10000)	-0.4993	0.0019	0.0473 (0.0011)	0.0007 (0.0015)	0.9263 (0.0084)	0.0022 (0.0001)	964

Table 61: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5013	0.0020	0.0432 (0.0010)	-0.0013 (0.0014)	0.9635 (0.0061)	0.0019 (0.0001)	958
Exp	-0.5010	0.0020	0.0433 (0.0010)	-0.0010 (0.0014)	0.9540 (0.0066)	0.0019 (0.0001)	1000
Weibull	-0.5015	0.0020	0.0437 (0.0010)	-0.0015 (0.0014)	0.9580 (0.0063)	0.0019 (0.0001)	1000
Gompertz	-0.4998	0.0020	0.0440 (0.0014)	0.0002 (0.0020)	0.9494 (0.0099)	0.0019 (0.0001)	494
RP (3)	-0.5012	0.0020	0.0438 (0.0010)	-0.0012 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
RP (5)	-0.5012	0.0020	0.0438 (0.0010)	-0.0012 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
RP (9)	-0.5012	0.0020	0.0438 (0.0010)	-0.0012 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
RP (P)	-0.5013	0.0020	0.0437 (0.0010)	-0.0013 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	999
FP (W)	-0.5015	0.0020	0.0437 (0.0010)	-0.0015 (0.0014)	0.9580 (0.0063)	0.0019 (0.0001)	1000
FP (k=10)	-0.5001	0.0020	0.0438 (0.0010)	-0.0001 (0.0014)	0.9600 (0.0062)	0.0019 (0.0001)	1000
FP (k=10000)	-0.5006	0.0020	0.0438 (0.0010)	-0.0006 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5014	0.0020	0.0438 (0.0010)	-0.0014 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
Exp	-0.5011	0.0020	0.0433 (0.0010)	-0.0011 (0.0014)	0.9540 (0.0066)	0.0019 (0.0001)	999
Weibull	-0.5018	0.0020	0.0437 (0.0010)	-0.0018 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	999
Gompertz	-0.5003	0.0020	0.0428 (0.0014)	-0.0003 (0.0020)	0.9519 (0.0100)	0.0018 (0.0001)	457
RP (3)	-0.5014	0.0020	0.0438 (0.0010)	-0.0014 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
RP (5)	-0.5014	0.0020	0.0438 (0.0010)	-0.0014 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
RP (9)	-0.5015	0.0020	0.0438 (0.0010)	-0.0015 (0.0014)	0.9590 (0.0063)	0.0019 (0.0001)	1000
RP (P)	-0.5016	0.0020	0.0437 (0.0010)	-0.0016 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
FP (W)	-0.5042	0.0020	0.0439 (0.0012)	-0.0042 (0.0017)	0.9601 (0.0074)	0.0019 (0.0001)	701
FP (k=10)	-0.4997	0.0020	0.0446 (0.0010)	0.0003 (0.0014)	0.9502 (0.0070)	0.0020 (0.0001)	963
FP (k=10000)	-0.5014	0.0019	0.0448 (0.0010)	-0.0014 (0.0014)	0.9399 (0.0076)	0.0020 (0.0001)	981

Table 62: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5011	0.0023	0.0479 (0.0011)	-0.0011 (0.0015)	0.9409 (0.0076)	0.0023 (0.0001)	965
Exp	-0.5532	0.0023	0.0530 (0.0012)	-0.0532 (0.0017)	0.7880 (0.0129)	0.0056 (0.0002)	1000
Weibull	-0.5015	0.0023	0.0476 (0.0011)	-0.0015 (0.0015)	0.9460 (0.0071)	0.0023 (0.0001)	1000
Gompertz	-0.5548	0.0023	0.0527 (0.0018)	-0.0548 (0.0026)	0.7900 (0.0199)	0.0058 (0.0004)	419
RP (3)	-0.5005	0.0023	0.0477 (0.0011)	-0.0005 (0.0015)	0.9430 (0.0073)	0.0023 (0.0001)	1000
RP (5)	-0.5006	0.0023	0.0477 (0.0011)	-0.0006 (0.0015)	0.9430 (0.0073)	0.0023 (0.0001)	1000
RP (9)	-0.5007	0.0023	0.0477 (0.0011)	-0.0007 (0.0015)	0.9430 (0.0073)	0.0023 (0.0001)	1000
RP (P)	-0.5009	0.0023	0.0477 (0.0011)	-0.0009 (0.0015)	0.9430 (0.0073)	0.0023 (0.0001)	1000
FP (W)	-0.5015	0.0023	0.0476 (0.0011)	-0.0015 (0.0015)	0.9460 (0.0071)	0.0023 (0.0001)	1000
FP (k=10)	-0.4975	0.0023	0.0478 (0.0011)	0.0025 (0.0015)	0.9440 (0.0073)	0.0023 (0.0001)	1000
FP (k=10000)	-0.5081	0.0022	0.0493 (0.0011)	-0.0081 (0.0016)	0.9330 (0.0079)	0.0025 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5009	0.0023	0.0477 (0.0011)	-0.0009 (0.0015)	0.9410 (0.0075)	0.0023 (0.0001)	1000
Exp	-0.5534	0.0023	0.0530 (0.0012)	-0.0534 (0.0017)	0.7878 (0.0129)	0.0057 (0.0002)	999
Weibull	-0.5018	0.0023	0.0476 (0.0011)	-0.0018 (0.0015)	0.9460 (0.0071)	0.0023 (0.0001)	1000
Gompertz	-0.5547	0.0023	0.0531 (0.0019)	-0.0547 (0.0026)	0.7932 (0.0200)	0.0058 (0.0004)	411
RP (3)	-0.5008	0.0023	0.0477 (0.0011)	-0.0008 (0.0015)	0.9420 (0.0074)	0.0023 (0.0001)	1000
RP (5)	-0.5009	0.0023	0.0477 (0.0011)	-0.0009 (0.0015)	0.9410 (0.0075)	0.0023 (0.0001)	1000
RP (9)	-0.5010	0.0023	0.0477 (0.0011)	-0.0010 (0.0015)	0.9410 (0.0075)	0.0023 (0.0001)	1000
RP (P)	-0.5012	0.0023	0.0477 (0.0011)	-0.0012 (0.0015)	0.9430 (0.0073)	0.0023 (0.0001)	1000
FP (W)	-0.5024	0.0023	0.0478 (0.0012)	-0.0024 (0.0017)	0.9490 (0.0080)	0.0023 (0.0001)	765
FP (k=10)	-0.4980	0.0023	0.0484 (0.0011)	0.0020 (0.0016)	0.9366 (0.0079)	0.0023 (0.0001)	962
FP (k=10000)	-0.5061	0.0022	0.0496 (0.0011)	-0.0061 (0.0016)	0.9260 (0.0083)	0.0025 (0.0001)	987

Table 63: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4990	0.0017	0.0417 (0.0009)	0.0010 (0.0013)	0.9545 (0.0067)	0.0017 (0.0001)	966
Exp	-0.4321	0.0017	0.0363 (0.0008)	0.0679 (0.0011)	0.6210 (0.0153)	0.0059 (0.0002)	1000
Weibull	-0.4806	0.0017	0.0403 (0.0009)	0.0194 (0.0013)	0.9410 (0.0075)	0.0020 (0.0001)	1000
Gompertz	-0.4524	0.0017	0.0495 (0.0013)	0.0476 (0.0018)	0.7284 (0.0164)	0.0047 (0.0002)	740
RP (3)	-0.4989	0.0017	0.0418 (0.0009)	0.0011 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
RP (5)	-0.4992	0.0017	0.0418 (0.0009)	0.0008 (0.0013)	0.9530 (0.0067)	0.0017 (0.0001)	1000
RP (9)	-0.4993	0.0017	0.0418 (0.0009)	0.0007 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
RP (P)	-0.4972	0.0017	0.0416 (0.0009)	0.0028 (0.0013)	0.9540 (0.0066)	0.0017 (0.0001)	1000
FP (W)	-0.4806	0.0017	0.0403 (0.0009)	0.0194 (0.0013)	0.9410 (0.0075)	0.0020 (0.0001)	1000
FP (k=10)	-0.4983	0.0017	0.0418 (0.0009)	0.0017 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
FP (k=10000)	-0.4972	0.0017	0.0417 (0.0009)	0.0028 (0.0013)	0.9490 (0.0070)	0.0017 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4993	0.0017	0.0418 (0.0009)	0.0007 (0.0013)	0.9530 (0.0067)	0.0017 (0.0001)	1000
Exp	-0.4321	0.0017	0.0363 (0.0008)	0.0679 (0.0011)	0.6226 (0.0153)	0.0059 (0.0002)	999
Weibull	-0.4808	0.0017	0.0403 (0.0009)	0.0192 (0.0013)	0.9420 (0.0074)	0.0020 (0.0001)	1000
Gompertz	-0.4526	0.0017	0.0492 (0.0013)	0.0474 (0.0018)	0.7317 (0.0165)	0.0047 (0.0002)	723
RP (3)	-0.4991	0.0017	0.0418 (0.0009)	0.0009 (0.0013)	0.9530 (0.0067)	0.0017 (0.0001)	1000
RP (5)	-0.4993	0.0017	0.0418 (0.0009)	0.0007 (0.0013)	0.9530 (0.0067)	0.0017 (0.0001)	1000
RP (9)	-0.4994	0.0017	0.0418 (0.0009)	0.0006 (0.0013)	0.9550 (0.0066)	0.0017 (0.0001)	1000
RP (P)	-0.4973	0.0017	0.0417 (0.0009)	0.0027 (0.0013)	0.9560 (0.0065)	0.0017 (0.0001)	1000
FP (W)	-0.4818	0.0017	0.0413 (0.0011)	0.0182 (0.0016)	0.9353 (0.0095)	0.0020 (0.0001)	665
FP (k=10)	-0.4979	0.0017	0.0423 (0.0010)	0.0021 (0.0014)	0.9498 (0.0071)	0.0018 (0.0001)	936
FP (k=10000)	-0.4977	0.0016	0.0421 (0.0010)	0.0023 (0.0014)	0.9317 (0.0081)	0.0018 (0.0001)	966

Table 64: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4985	0.0018	0.0433 (0.0010)	0.0015 (0.0014)	0.9473 (0.0073)	0.0019 (0.0001)	948
Exp	-0.3933	0.0017	0.0360 (0.0008)	0.1067 (0.0011)	0.2500 (0.0137)	0.0127 (0.0003)	1000
Weibull	-0.5176	0.0018	0.0448 (0.0010)	-0.0176 (0.0014)	0.9220 (0.0085)	0.0023 (0.0001)	1000
Gompertz	-0.4678	0.0018	0.0595 (0.0014)	0.0322 (0.0019)	0.7856 (0.0134)	0.0046 (0.0002)	942
RP (3)	-0.4997	0.0018	0.0431 (0.0010)	0.0003 (0.0014)	0.9550 (0.0066)	0.0019 (0.0001)	1000
RP (5)	-0.4989	0.0018	0.0431 (0.0010)	0.0011 (0.0014)	0.9510 (0.0068)	0.0019 (0.0001)	1000
RP (9)	-0.4990	0.0018	0.0431 (0.0010)	0.0010 (0.0014)	0.9510 (0.0068)	0.0019 (0.0001)	999
RP (P)	-0.4993	0.0018	0.0431 (0.0010)	0.0007 (0.0014)	0.9520 (0.0068)	0.0019 (0.0001)	1000
FP (W)	-0.5175	0.0018	0.0446 (0.0010)	-0.0175 (0.0014)	0.9228 (0.0085)	0.0023 (0.0001)	997
FP (k=10)	-0.4946	0.0018	0.0431 (0.0010)	0.0054 (0.0014)	0.9440 (0.0073)	0.0019 (0.0001)	1000
FP (k=10000)	-0.4892	0.0018	0.0439 (0.0010)	0.0108 (0.0014)	0.9284 (0.0083)	0.0020 (0.0001)	977
Model frailty: Normal							
Cox	-0.4990	0.0018	0.0431 (0.0010)	0.0010 (0.0014)	0.9490 (0.0070)	0.0019 (0.0001)	1000
Exp	-0.3932	0.0017	0.0361 (0.0008)	0.1068 (0.0011)	0.2515 (0.0137)	0.0127 (0.0003)	998
Weibull	-0.5177	0.0018	0.0448 (0.0010)	-0.0177 (0.0014)	0.9228 (0.0084)	0.0023 (0.0001)	998
Gompertz	-0.4668	0.0018	0.0599 (0.0014)	0.0332 (0.0020)	0.7784 (0.0141)	0.0047 (0.0002)	862
RP (3)	-0.4999	0.0018	0.0431 (0.0010)	0.0001 (0.0014)	0.9540 (0.0066)	0.0019 (0.0001)	1000
RP (5)	-0.4991	0.0018	0.0431 (0.0010)	0.0009 (0.0014)	0.9500 (0.0069)	0.0019 (0.0001)	1000
RP (9)	-0.4991	0.0018	0.0431 (0.0010)	0.0009 (0.0014)	0.9490 (0.0070)	0.0019 (0.0001)	1000
RP (P)	-0.4995	0.0018	0.0431 (0.0010)	0.0005 (0.0014)	0.9520 (0.0068)	0.0019 (0.0001)	1000
FP (W)	-0.5163	0.0018	0.0458 (0.0013)	-0.0163 (0.0019)	0.9171 (0.0112)	0.0024 (0.0001)	603
FP (k=10)	-0.4957	0.0018	0.0444 (0.0010)	0.0043 (0.0014)	0.9340 (0.0081)	0.0020 (0.0001)	940
FP (k=10000)	-0.5018	0.0017	0.0490 (0.0011)	-0.0018 (0.0016)	0.8964 (0.0098)	0.0024 (0.0001)	965

Table 65: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4988	0.0021	0.0472 (0.0011)	0.0012 (0.0015)	0.9525 (0.0068)	0.0022 (0.0001)	969
Exp	-0.5256	0.0021	0.0492 (0.0011)	-0.0256 (0.0016)	0.8970 (0.0096)	0.0031 (0.0001)	1000
Weibull	-0.5016	0.0021	0.0472 (0.0011)	-0.0016 (0.0015)	0.9510 (0.0068)	0.0022 (0.0001)	1000
Gompertz	-0.5248	0.0021	0.0492 (0.0016)	-0.0248 (0.0023)	0.8969 (0.0142)	0.0030 (0.0002)	456
RP (3)	-0.4986	0.0021	0.0470 (0.0011)	0.0014 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
RP (5)	-0.4991	0.0021	0.0470 (0.0011)	0.0009 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
RP (9)	-0.4992	0.0021	0.0470 (0.0011)	0.0008 (0.0015)	0.9530 (0.0067)	0.0022 (0.0001)	1000
RP (P)	-0.4992	0.0021	0.0470 (0.0011)	0.0008 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
FP (W)	-0.5016	0.0021	0.0472 (0.0011)	-0.0016 (0.0015)	0.9510 (0.0068)	0.0022 (0.0001)	1000
FP (k=10)	-0.4972	0.0021	0.0471 (0.0011)	0.0028 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
FP (k=10000)	-0.4951	0.0021	0.0467 (0.0010)	0.0049 (0.0015)	0.9530 (0.0067)	0.0022 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4994	0.0021	0.0470 (0.0011)	0.0006 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
Exp	-0.5257	0.0021	0.0492 (0.0011)	-0.0257 (0.0016)	0.8940 (0.0097)	0.0031 (0.0001)	1000
Weibull	-0.5019	0.0021	0.0472 (0.0011)	-0.0019 (0.0015)	0.9509 (0.0068)	0.0022 (0.0001)	998
Gompertz	-0.5259	0.0021	0.0497 (0.0017)	-0.0259 (0.0024)	0.8923 (0.0150)	0.0031 (0.0002)	427
RP (3)	-0.4988	0.0021	0.0470 (0.0011)	0.0012 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
RP (5)	-0.4993	0.0021	0.0470 (0.0011)	0.0007 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
RP (9)	-0.4994	0.0021	0.0470 (0.0011)	0.0006 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
RP (P)	-0.4994	0.0021	0.0470 (0.0011)	0.0006 (0.0015)	0.9520 (0.0068)	0.0022 (0.0001)	1000
FP (W)	-0.5020	0.0021	0.0482 (0.0012)	-0.0020 (0.0017)	0.9466 (0.0081)	0.0023 (0.0001)	768
FP (k=10)	-0.4964	0.0021	0.0475 (0.0011)	0.0036 (0.0015)	0.9496 (0.0071)	0.0023 (0.0001)	953
FP (k=10000)	-0.4952	0.0020	0.0476 (0.0011)	0.0048 (0.0015)	0.9459 (0.0072)	0.0023 (0.0001)	979

Table 66: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4985	0.0018	0.0423 (0.0010)	0.0015 (0.0014)	0.9511 (0.0070)	0.0018 (0.0001)	962
Exp	-0.4988	0.0017	0.0418 (0.0009)	0.0012 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
Weibull	-0.4989	0.0018	0.0422 (0.0009)	0.0011 (0.0013)	0.9510 (0.0068)	0.0018 (0.0001)	1000
Gompertz	-0.4994	0.0017	0.0415 (0.0013)	0.0006 (0.0019)	0.9519 (0.0096)	0.0017 (0.0001)	499
RP (3)	-0.4984	0.0018	0.0424 (0.0009)	0.0016 (0.0013)	0.9530 (0.0067)	0.0018 (0.0001)	1000
RP (5)	-0.4985	0.0018	0.0424 (0.0009)	0.0015 (0.0013)	0.9530 (0.0067)	0.0018 (0.0001)	1000
RP (9)	-0.4985	0.0018	0.0424 (0.0009)	0.0015 (0.0013)	0.9530 (0.0067)	0.0018 (0.0001)	1000
RP (P)	-0.4987	0.0018	0.0423 (0.0009)	0.0013 (0.0013)	0.9509 (0.0068)	0.0018 (0.0001)	998
FP (W)	-0.4989	0.0018	0.0422 (0.0009)	0.0011 (0.0013)	0.9510 (0.0068)	0.0018 (0.0001)	999
FP (k=10)	-0.4975	0.0018	0.0424 (0.0009)	0.0025 (0.0013)	0.9520 (0.0068)	0.0018 (0.0001)	1000
FP (k=10000)	-0.4978	0.0017	0.0424 (0.0009)	0.0022 (0.0013)	0.9460 (0.0071)	0.0018 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4986	0.0018	0.0424 (0.0009)	0.0014 (0.0013)	0.9520 (0.0068)	0.0018 (0.0001)	1000
Exp	-0.4988	0.0017	0.0418 (0.0009)	0.0012 (0.0013)	0.9519 (0.0068)	0.0017 (0.0001)	998
Weibull	-0.4991	0.0018	0.0422 (0.0009)	0.0009 (0.0013)	0.9510 (0.0068)	0.0018 (0.0001)	999
Gompertz	-0.4981	0.0017	0.0426 (0.0014)	0.0019 (0.0019)	0.9414 (0.0106)	0.0018 (0.0001)	495
RP (3)	-0.4986	0.0018	0.0424 (0.0009)	0.0014 (0.0013)	0.9520 (0.0068)	0.0018 (0.0001)	1000
RP (5)	-0.4986	0.0018	0.0424 (0.0009)	0.0014 (0.0013)	0.9520 (0.0068)	0.0018 (0.0001)	1000
RP (9)	-0.4987	0.0018	0.0424 (0.0009)	0.0013 (0.0013)	0.9530 (0.0067)	0.0018 (0.0001)	1000
RP (P)	-0.4989	0.0018	0.0423 (0.0009)	0.0011 (0.0013)	0.9520 (0.0068)	0.0018 (0.0001)	1000
FP (W)	-0.5005	0.0017	0.0423 (0.0012)	-0.0005 (0.0016)	0.9568 (0.0078)	0.0018 (0.0001)	672
FP (k=10)	-0.4982	0.0017	0.0428 (0.0010)	0.0018 (0.0014)	0.9467 (0.0073)	0.0018 (0.0001)	938
FP (k=10000)	-0.4980	0.0016	0.0431 (0.0010)	0.0020 (0.0014)	0.9280 (0.0083)	0.0019 (0.0001)	972

Table 67: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5007	0.0020	0.0447 (0.0010)	-0.0007 (0.0014)	0.9356 (0.0079)	0.0020 (0.0001)	963
Exp	-0.5634	0.0019	0.0505 (0.0011)	-0.0634 (0.0016)	0.6840 (0.0147)	0.0066 (0.0002)	1000
Weibull	-0.5027	0.0019	0.0445 (0.0010)	-0.0027 (0.0014)	0.9350 (0.0078)	0.0020 (0.0001)	1000
Gompertz	-0.5629	0.0020	0.0487 (0.0017)	-0.0629 (0.0024)	0.6751 (0.0235)	0.0063 (0.0003)	397
RP (3)	-0.5010	0.0020	0.0445 (0.0010)	-0.0010 (0.0014)	0.9390 (0.0076)	0.0020 (0.0001)	1000
RP (5)	-0.5011	0.0020	0.0445 (0.0010)	-0.0011 (0.0014)	0.9380 (0.0076)	0.0020 (0.0001)	1000
RP (9)	-0.5011	0.0020	0.0445 (0.0010)	-0.0011 (0.0014)	0.9370 (0.0077)	0.0020 (0.0001)	1000
RP (P)	-0.5014	0.0020	0.0445 (0.0010)	-0.0014 (0.0014)	0.9380 (0.0076)	0.0020 (0.0001)	1000
FP (W)	-0.5027	0.0019	0.0445 (0.0010)	-0.0027 (0.0014)	0.9350 (0.0078)	0.0020 (0.0001)	1000
FP (k=10)	-0.4989	0.0020	0.0449 (0.0010)	0.0011 (0.0014)	0.9340 (0.0079)	0.0020 (0.0001)	1000
FP (k=10000)	-0.5165	0.0019	0.0470 (0.0011)	-0.0165 (0.0015)	0.9110 (0.0090)	0.0025 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5013	0.0020	0.0445 (0.0010)	-0.0013 (0.0014)	0.9370 (0.0077)	0.0020 (0.0001)	1000
Exp	-0.5635	0.0019	0.0505 (0.0011)	-0.0635 (0.0016)	0.6807 (0.0148)	0.0066 (0.0002)	999
Weibull	-0.5029	0.0019	0.0446 (0.0010)	-0.0029 (0.0014)	0.9360 (0.0077)	0.0020 (0.0001)	1000
Gompertz	-0.5629	0.0020	0.0504 (0.0019)	-0.0629 (0.0027)	0.6762 (0.0250)	0.0065 (0.0004)	349
RP (3)	-0.5013	0.0020	0.0445 (0.0010)	-0.0013 (0.0014)	0.9390 (0.0076)	0.0020 (0.0001)	1000
RP (5)	-0.5014	0.0020	0.0445 (0.0010)	-0.0014 (0.0014)	0.9390 (0.0076)	0.0020 (0.0001)	1000
RP (9)	-0.5014	0.0020	0.0445 (0.0010)	-0.0014 (0.0014)	0.9370 (0.0077)	0.0020 (0.0001)	1000
RP (P)	-0.5017	0.0020	0.0445 (0.0010)	-0.0017 (0.0014)	0.9390 (0.0076)	0.0020 (0.0001)	1000
FP (W)	-0.5031	0.0019	0.0451 (0.0012)	-0.0031 (0.0017)	0.9440 (0.0086)	0.0020 (0.0001)	714
FP (k=10)	-0.4986	0.0019	0.0458 (0.0011)	0.0014 (0.0015)	0.9244 (0.0086)	0.0021 (0.0001)	952
FP (k=10000)	-0.5130	0.0018	0.0472 (0.0011)	-0.0130 (0.0015)	0.9087 (0.0092)	0.0024 (0.0001)	975

Table 68: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4974	0.0016	0.0393 (0.0009)	0.0026 (0.0013)	0.9509 (0.0070)	0.0016 (0.0001)	958
Exp	-0.4307	0.0015	0.0340 (0.0008)	0.0693 (0.0011)	0.5850 (0.0156)	0.0060 (0.0002)	1000
Weibull	-0.4791	0.0016	0.0381 (0.0009)	0.0209 (0.0012)	0.9280 (0.0082)	0.0019 (0.0001)	1000
Gompertz	-0.4539	0.0016	0.0491 (0.0013)	0.0461 (0.0018)	0.7078 (0.0169)	0.0045 (0.0002)	722
RP (3)	-0.4980	0.0016	0.0396 (0.0009)	0.0020 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
RP (5)	-0.4984	0.0016	0.0396 (0.0009)	0.0016 (0.0013)	0.9490 (0.0070)	0.0016 (0.0001)	1000
RP (9)	-0.4985	0.0016	0.0396 (0.0009)	0.0015 (0.0013)	0.9520 (0.0068)	0.0016 (0.0001)	1000
RP (P)	-0.4965	0.0016	0.0395 (0.0009)	0.0035 (0.0012)	0.9459 (0.0072)	0.0016 (0.0001)	999
FP (W)	-0.4791	0.0016	0.0381 (0.0009)	0.0209 (0.0012)	0.9280 (0.0082)	0.0019 (0.0001)	1000
FP (k=10)	-0.4976	0.0016	0.0396 (0.0009)	0.0024 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
FP (k=10000)	-0.4965	0.0015	0.0395 (0.0009)	0.0035 (0.0012)	0.9430 (0.0073)	0.0016 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4985	0.0016	0.0396 (0.0009)	0.0015 (0.0013)	0.9490 (0.0070)	0.0016 (0.0001)	1000
Exp	-0.4306	0.0015	0.0341 (0.0008)	0.0694 (0.0011)	0.5846 (0.0156)	0.0060 (0.0002)	999
Weibull	-0.4793	0.0016	0.0381 (0.0009)	0.0207 (0.0012)	0.9290 (0.0081)	0.0019 (0.0001)	1000
Gompertz	-0.4529	0.0016	0.0487 (0.0013)	0.0471 (0.0018)	0.7014 (0.0171)	0.0046 (0.0002)	720
RP (3)	-0.4981	0.0016	0.0396 (0.0009)	0.0019 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
RP (5)	-0.4985	0.0016	0.0396 (0.0009)	0.0015 (0.0013)	0.9490 (0.0070)	0.0016 (0.0001)	1000
RP (9)	-0.4986	0.0016	0.0396 (0.0009)	0.0014 (0.0013)	0.9490 (0.0070)	0.0016 (0.0001)	1000
RP (P)	-0.4966	0.0016	0.0395 (0.0009)	0.0034 (0.0012)	0.9470 (0.0071)	0.0016 (0.0001)	1000
FP (W)	-0.4788	0.0015	0.0383 (0.0011)	0.0212 (0.0015)	0.9236 (0.0107)	0.0019 (0.0001)	615
FP (k=10)	-0.4970	0.0016	0.0406 (0.0009)	0.0030 (0.0013)	0.9386 (0.0079)	0.0017 (0.0001)	928
FP (k=10000)	-0.4973	0.0014	0.0407 (0.0009)	0.0027 (0.0013)	0.9193 (0.0088)	0.0017 (0.0001)	954

Table 69: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4994	0.0016	0.0406 (0.0009)	0.0006 (0.0013)	0.9466 (0.0073)	0.0016 (0.0001)	955
Exp	-0.3795	0.0016	0.0336 (0.0008)	0.1205 (0.0011)	0.1100 (0.0099)	0.0157 (0.0003)	1000
Weibull	-0.5191	0.0016	0.0422 (0.0009)	-0.0191 (0.0013)	0.9080 (0.0091)	0.0021 (0.0001)	1000
Gompertz	-0.4725	0.0016	0.0552 (0.0013)	0.0275 (0.0018)	0.8326 (0.0120)	0.0038 (0.0002)	962
RP (3)	-0.5005	0.0016	0.0406 (0.0009)	-0.0005 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
RP (5)	-0.5002	0.0016	0.0405 (0.0009)	-0.0002 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
RP (9)	-0.5002	0.0016	0.0406 (0.0009)	-0.0002 (0.0013)	0.9468 (0.0071)	0.0016 (0.0001)	997
RP (P)	-0.5004	0.0016	0.0406 (0.0009)	-0.0004 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
FP (W)	-0.5191	0.0016	0.0422 (0.0009)	-0.0191 (0.0013)	0.9080 (0.0091)	0.0021 (0.0001)	1000
FP (k=10)	-0.4946	0.0016	0.0407 (0.0009)	0.0054 (0.0013)	0.9480 (0.0070)	0.0017 (0.0001)	1000
FP (k=10000)	-0.4910	0.0016	0.0409 (0.0010)	0.0090 (0.0014)	0.9466 (0.0074)	0.0018 (0.0001)	918
Model frailty: Normal							
Cox	-0.5003	0.0016	0.0406 (0.0009)	-0.0003 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
Exp	-0.3793	0.0016	0.0336 (0.0008)	0.1207 (0.0011)	0.1071 (0.0098)	0.0157 (0.0003)	999
Weibull	-0.5192	0.0016	0.0422 (0.0009)	-0.0192 (0.0013)	0.9090 (0.0091)	0.0021 (0.0001)	1000
Gompertz	-0.4724	0.0016	0.0552 (0.0013)	0.0276 (0.0018)	0.8270 (0.0125)	0.0038 (0.0002)	919
RP (3)	-0.5007	0.0016	0.0406 (0.0009)	-0.0007 (0.0013)	0.9470 (0.0071)	0.0016 (0.0001)	1000
RP (5)	-0.5003	0.0016	0.0406 (0.0009)	-0.0003 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
RP (9)	-0.5004	0.0016	0.0406 (0.0009)	-0.0004 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
RP (P)	-0.5005	0.0016	0.0406 (0.0009)	-0.0005 (0.0013)	0.9480 (0.0070)	0.0016 (0.0001)	1000
FP (W)	-0.5201	0.0016	0.0424 (0.0013)	-0.0201 (0.0018)	0.9019 (0.0124)	0.0022 (0.0001)	571
FP (k=10)	-0.4960	0.0016	0.0422 (0.0010)	0.0040 (0.0014)	0.9361 (0.0080)	0.0018 (0.0001)	939
FP (k=10000)	-0.5160	0.0014	0.0464 (0.0011)	-0.0160 (0.0015)	0.8597 (0.0112)	0.0024 (0.0001)	962

Table 70: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4992	0.0018	0.0429 (0.0010)	0.0008 (0.0014)	0.9501 (0.0070)	0.0018 (0.0001)	961
Exp	-0.5273	0.0018	0.0443 (0.0010)	-0.0273 (0.0014)	0.8720 (0.0106)	0.0027 (0.0001)	1000
Weibull	-0.5005	0.0018	0.0427 (0.0010)	-0.0005 (0.0013)	0.9590 (0.0063)	0.0018 (0.0001)	1000
Gompertz	-0.5272	0.0018	0.0434 (0.0015)	-0.0272 (0.0021)	0.8807 (0.0155)	0.0026 (0.0002)	436
RP (3)	-0.4991	0.0018	0.0426 (0.0010)	0.0009 (0.0013)	0.9490 (0.0070)	0.0018 (0.0001)	1000
RP (5)	-0.4995	0.0018	0.0426 (0.0010)	0.0005 (0.0013)	0.9500 (0.0069)	0.0018 (0.0001)	1000
RP (9)	-0.4996	0.0018	0.0427 (0.0010)	0.0004 (0.0013)	0.9500 (0.0069)	0.0018 (0.0001)	1000
RP (P)	-0.4995	0.0018	0.0427 (0.0010)	0.0005 (0.0014)	0.9499 (0.0069)	0.0018 (0.0001)	998
FP (W)	-0.5005	0.0018	0.0427 (0.0010)	-0.0005 (0.0013)	0.9590 (0.0063)	0.0018 (0.0001)	1000
FP (k=10)	-0.4982	0.0018	0.0427 (0.0010)	0.0018 (0.0014)	0.9480 (0.0070)	0.0018 (0.0001)	1000
FP (k=10000)	-0.4963	0.0018	0.0423 (0.0009)	0.0037 (0.0013)	0.9469 (0.0071)	0.0018 (0.0001)	999
Model frailty: Normal							
Cox	-0.4997	0.0018	0.0427 (0.0010)	0.0003 (0.0014)	0.9490 (0.0070)	0.0018 (0.0001)	1000
Exp	-0.5273	0.0018	0.0443 (0.0010)	-0.0273 (0.0014)	0.8716 (0.0106)	0.0027 (0.0001)	997
Weibull	-0.5007	0.0018	0.0427 (0.0010)	-0.0007 (0.0014)	0.9590 (0.0063)	0.0018 (0.0001)	1000
Gompertz	-0.5263	0.0018	0.0427 (0.0015)	-0.0263 (0.0021)	0.8832 (0.0155)	0.0025 (0.0002)	428
RP (3)	-0.4994	0.0018	0.0427 (0.0010)	0.0006 (0.0013)	0.9500 (0.0069)	0.0018 (0.0001)	1000
RP (5)	-0.4997	0.0018	0.0427 (0.0010)	0.0003 (0.0013)	0.9500 (0.0069)	0.0018 (0.0001)	1000
RP (9)	-0.4998	0.0018	0.0427 (0.0010)	0.0002 (0.0013)	0.9500 (0.0069)	0.0018 (0.0001)	1000
RP (P)	-0.4998	0.0018	0.0427 (0.0010)	0.0002 (0.0013)	0.9500 (0.0069)	0.0018 (0.0001)	1000
FP (W)	-0.5027	0.0018	0.0426 (0.0012)	-0.0027 (0.0016)	0.9576 (0.0077)	0.0018 (0.0001)	684
FP (k=10)	-0.4983	0.0018	0.0433 (0.0010)	0.0017 (0.0014)	0.9504 (0.0071)	0.0019 (0.0001)	948
FP (k=10000)	-0.4968	0.0017	0.0429 (0.0010)	0.0032 (0.0014)	0.9415 (0.0075)	0.0018 (0.0001)	975

Table 71: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4985	0.0026	0.0487 (0.0011)	0.0015 (0.0015)	0.9540 (0.0066)	0.0024 (0.0001)	1000
Exp	-0.4979	0.0025	0.0478 (0.0011)	0.0021 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
Weibull	-0.5034	0.0025	0.0490 (0.0011)	-0.0034 (0.0015)	0.9490 (0.0070)	0.0024 (0.0001)	1000
Gompertz	-0.4838	0.0027	0.0507 (0.0059)	0.0162 (0.0082)	0.9737 (0.0260)	0.0028 (0.0006)	38
RP (3)	-0.4976	0.0025	0.0484 (0.0011)	0.0024 (0.0015)	0.9548 (0.0066)	0.0023 (0.0001)	996
RP (5)	-0.4989	0.0025	0.0487 (0.0011)	0.0011 (0.0015)	0.9518 (0.0068)	0.0024 (0.0001)	995
RP (9)	-0.4991	0.0025	0.0487 (0.0011)	0.0009 (0.0015)	0.9538 (0.0067)	0.0024 (0.0001)	996
RP (P)	-0.4992	0.0025	0.0487 (0.0011)	0.0008 (0.0015)	0.9538 (0.0067)	0.0024 (0.0001)	996
FP (W)	-0.5034	0.0025	0.0490 (0.0011)	-0.0034 (0.0015)	0.9490 (0.0070)	0.0024 (0.0001)	1000
FP (k=10)	-0.4969	0.0025	0.0481 (0.0011)	0.0031 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
FP (k=10000)	-0.4868	0.0033	0.0654 (0.0071)	0.0132 (0.0100)	0.8605 (0.0528)	0.0044 (0.0012)	43
Model frailty: Normal							
Cox	-0.4933	0.0025	0.0501 (0.0011)	0.0067 (0.0016)	0.9483 (0.0071)	0.0026 (0.0001)	967
Exp	-0.4979	0.0025	0.0483 (0.0011)	0.0021 (0.0016)	0.9484 (0.0072)	0.0023 (0.0001)	950
Weibull	-0.5035	0.0025	0.0491 (0.0011)	-0.0035 (0.0016)	0.9487 (0.0072)	0.0024 (0.0001)	936
Gompertz	-0.5032	0.0027	0.0516 (0.0063)	-0.0032 (0.0087)	0.9429 (0.0392)	0.0026 (0.0006)	35
RP (3)	-0.4979	0.0025	0.0485 (0.0011)	0.0021 (0.0015)	0.9540 (0.0066)	0.0024 (0.0001)	1000
RP (5)	-0.4992	0.0025	0.0487 (0.0011)	0.0008 (0.0015)	0.9520 (0.0068)	0.0024 (0.0001)	1000
RP (9)	-0.4995	0.0025	0.0488 (0.0011)	0.0005 (0.0015)	0.9530 (0.0067)	0.0024 (0.0001)	1000
RP (P)	-0.4995	0.0025	0.0487 (0.0011)	0.0005 (0.0015)	0.9530 (0.0067)	0.0024 (0.0001)	1000
FP (W)	-0.5008	0.0025	0.0483 (0.0016)	-0.0008 (0.0022)	0.9512 (0.0099)	0.0023 (0.0002)	471
FP (k=10)	-0.4933	0.0025	0.0483 (0.0012)	0.0067 (0.0017)	0.9517 (0.0074)	0.0024 (0.0001)	848
FP (k=10000)	-0.4949	0.0022	0.0483 (0.0012)	0.0051 (0.0016)	0.9326 (0.0085)	0.0024 (0.0001)	876

Table 72: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4989	0.0027	0.0513 (0.0011)	0.0011 (0.0016)	0.9540 (0.0066)	0.0026 (0.0001)	1000
Exp	-0.6047	0.0026	0.0616 (0.0014)	-0.1047 (0.0019)	0.4460 (0.0157)	0.0148 (0.0004)	1000
Weibull	-0.5148	0.0027	0.0529 (0.0012)	-0.0148 (0.0017)	0.9300 (0.0081)	0.0030 (0.0001)	1000
Gompertz	-0.6116	0.0026	0.0579 (0.0082)	-0.1116 (0.0113)	0.3846 (0.0954)	0.0157 (0.0029)	26
RP (3)	-0.4996	0.0027	0.0516 (0.0012)	0.0004 (0.0016)	0.9507 (0.0069)	0.0027 (0.0001)	994
RP (5)	-0.5009	0.0027	0.0517 (0.0012)	-0.0009 (0.0016)	0.9517 (0.0068)	0.0027 (0.0001)	993
RP (9)	-0.5006	0.0027	0.0519 (0.0012)	-0.0006 (0.0017)	0.9534 (0.0069)	0.0027 (0.0001)	923
RP (P)	-0.5008	0.0027	0.0517 (0.0012)	-0.0008 (0.0016)	0.9527 (0.0067)	0.0027 (0.0001)	994
FP (W)	-0.5148	0.0027	0.0529 (0.0012)	-0.0148 (0.0017)	0.9300 (0.0081)	0.0030 (0.0001)	1000
FP (k=10)	-0.5486	0.0027	0.0623 (0.0014)	-0.0486 (0.0020)	0.7859 (0.0130)	0.0062 (0.0002)	995
FP (k=10000)	-0.5596	0.0035	0.0682 (0.0091)	-0.0596 (0.0127)	0.7586 (0.0795)	0.0080 (0.0018)	29
Model frailty: Normal							
Cox	-0.4943	0.0027	0.0527 (0.0012)	0.0057 (0.0017)	0.9486 (0.0071)	0.0028 (0.0001)	972
Exp	-0.6049	0.0026	0.0613 (0.0014)	-0.1049 (0.0020)	0.4499 (0.0163)	0.0148 (0.0004)	929
Weibull	-0.5149	0.0027	0.0527 (0.0012)	-0.0149 (0.0017)	0.9309 (0.0081)	0.0030 (0.0001)	970
Gompertz	-0.6117	0.0030	0.0673 (0.0137)	-0.1117 (0.0187)	0.4615 (0.1383)	0.0167 (0.0038)	13
RP (3)	-0.4998	0.0027	0.0515 (0.0012)	0.0002 (0.0016)	0.9520 (0.0068)	0.0026 (0.0001)	999
RP (5)	-0.5008	0.0027	0.0527 (0.0012)	-0.0008 (0.0017)	0.9499 (0.0069)	0.0028 (0.0002)	998
RP (9)	-0.4923	0.0027	0.0757 (0.0017)	0.0077 (0.0024)	0.9260 (0.0083)	0.0058 (0.0006)	986
RP (P)	-0.5011	0.0027	0.0517 (0.0012)	-0.0011 (0.0016)	0.9529 (0.0067)	0.0027 (0.0001)	997
FP (W)	-0.5118	0.0027	0.0542 (0.0016)	-0.0118 (0.0023)	0.9267 (0.0112)	0.0031 (0.0002)	546
FP (k=10)	-0.5331	0.0026	0.0595 (0.0015)	-0.0331 (0.0021)	0.8433 (0.0126)	0.0046 (0.0002)	836
FP (k=10000)	-0.5802	0.0023	0.0601 (0.0015)	-0.0802 (0.0021)	0.5916 (0.0173)	0.0100 (0.0004)	808

Table 73: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4991	0.0023	0.0461 (0.0010)	0.0009 (0.0015)	0.9630 (0.0060)	0.0021 (0.0001)	999
Exp	-0.4771	0.0022	0.0439 (0.0010)	0.0229 (0.0014)	0.9400 (0.0075)	0.0024 (0.0001)	1000
Weibull	-0.5065	0.0023	0.0471 (0.0011)	-0.0065 (0.0015)	0.9560 (0.0065)	0.0023 (0.0001)	1000
Gompertz	-0.4653	0.0024	0.0473 (0.0044)	0.0347 (0.0062)	0.8621 (0.0453)	0.0034 (0.0005)	58
RP (3)	-0.5027	0.0023	0.0466 (0.0010)	-0.0027 (0.0015)	0.9598 (0.0062)	0.0022 (0.0001)	996
RP (5)	-0.5002	0.0023	0.0463 (0.0010)	-0.0002 (0.0015)	0.9639 (0.0059)	0.0021 (0.0001)	996
RP (9)	-0.4998	0.0023	0.0463 (0.0010)	0.0002 (0.0015)	0.9649 (0.0058)	0.0021 (0.0001)	996
RP (P)	-0.5001	0.0023	0.0463 (0.0010)	-0.0001 (0.0015)	0.9618 (0.0061)	0.0021 (0.0001)	996
FP (W)	-0.5065	0.0023	0.0471 (0.0011)	-0.0065 (0.0015)	0.9560 (0.0065)	0.0023 (0.0001)	1000
FP (k=10)	-0.5013	0.0023	0.0461 (0.0010)	-0.0013 (0.0015)	0.9580 (0.0063)	0.0021 (0.0001)	1000
FP (k=10000)	-0.4972	0.0023	0.0438 (0.0109)	0.0028 (0.0146)	1.0000 (0.0000)	0.0017 (0.0005)	9
Model frailty: Normal							
Cox	-0.4945	0.0023	0.0473 (0.0011)	0.0055 (0.0015)	0.9538 (0.0067)	0.0023 (0.0001)	973
Exp	-0.4773	0.0023	0.0441 (0.0010)	0.0227 (0.0014)	0.9385 (0.0078)	0.0025 (0.0001)	960
Weibull	-0.5062	0.0023	0.0472 (0.0011)	-0.0062 (0.0015)	0.9559 (0.0067)	0.0023 (0.0001)	952
Gompertz	-0.4748	0.0023	0.0412 (0.0046)	0.0252 (0.0064)	0.9512 (0.0336)	0.0023 (0.0005)	41
RP (3)	-0.5028	0.0023	0.0465 (0.0010)	-0.0028 (0.0015)	0.9600 (0.0062)	0.0022 (0.0001)	1000
RP (5)	-0.5004	0.0023	0.0463 (0.0010)	-0.0004 (0.0015)	0.9640 (0.0059)	0.0021 (0.0001)	1000
RP (9)	-0.5000	0.0023	0.0463 (0.0010)	0.0000 (0.0015)	0.9650 (0.0058)	0.0021 (0.0001)	1000
RP (P)	-0.5002	0.0023	0.0463 (0.0010)	-0.0002 (0.0015)	0.9630 (0.0060)	0.0021 (0.0001)	1000
FP (W)	-0.5038	0.0023	0.0474 (0.0016)	-0.0038 (0.0023)	0.9556 (0.0100)	0.0023 (0.0001)	428
FP (k=10)	-0.4905	0.0023	0.0470 (0.0011)	0.0095 (0.0016)	0.9403 (0.0082)	0.0023 (0.0001)	838
FP (k=10000)	-0.4987	0.0020	0.0463 (0.0012)	0.0013 (0.0016)	0.9396 (0.0084)	0.0021 (0.0001)	811

Table 74: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4993	0.0024	0.0498 (0.0011)	0.0007 (0.0016)	0.9550 (0.0066)	0.0025 (0.0001)	1000
Exp	-0.3317	0.0023	0.0378 (0.0008)	0.1683 (0.0012)	0.0480 (0.0068)	0.0298 (0.0004)	1000
Weibull	-0.4838	0.0024	0.0482 (0.0011)	0.0162 (0.0015)	0.9410 (0.0075)	0.0026 (0.0001)	1000
Gompertz	-0.3350	0.0024	0.0376 (0.0015)	0.1650 (0.0021)	0.0457 (0.0115)	0.0286 (0.0007)	328
RP (3)	-0.4936	0.0024	0.0494 (0.0013)	0.0064 (0.0018)	0.9519 (0.0079)	0.0025 (0.0001)	728
RP (5)	-0.4987	0.0024	0.0499 (0.0011)	0.0013 (0.0016)	0.9574 (0.0065)	0.0025 (0.0001)	962
RP (9)	-0.4997	0.0024	0.0499 (0.0011)	0.0003 (0.0016)	0.9555 (0.0066)	0.0025 (0.0001)	989
RP (P)	-0.4960	0.0024	0.0495 (0.0011)	0.0040 (0.0016)	0.9527 (0.0067)	0.0025 (0.0001)	993
FP (W)	-0.4838	0.0024	0.0482 (0.0011)	0.0162 (0.0015)	0.9410 (0.0075)	0.0026 (0.0001)	1000
FP (k=10)	-0.4865	0.0024	0.0497 (0.0011)	0.0135 (0.0016)	0.9320 (0.0080)	0.0026 (0.0001)	1000
FP (k=10000)	-0.4712	0.0029	0.0614 (0.0084)	0.0288 (0.0116)	0.8929 (0.0585)	0.0045 (0.0011)	28
Model frailty: Normal							
Cox	-0.4947	0.0024	0.0507 (0.0011)	0.0053 (0.0016)	0.9462 (0.0072)	0.0026 (0.0001)	986
Exp	-0.3319	0.0023	0.0378 (0.0009)	0.1681 (0.0012)	0.0487 (0.0069)	0.0297 (0.0004)	986
Weibull	-0.4834	0.0024	0.0486 (0.0011)	0.0166 (0.0016)	0.9407 (0.0078)	0.0026 (0.0001)	928
Gompertz	-0.3320	0.0023	0.0370 (0.0015)	0.1680 (0.0022)	0.0475 (0.0124)	0.0296 (0.0007)	295
RP (3)	-0.4843	0.0024	0.0747 (0.0019)	0.0157 (0.0027)	0.9261 (0.0095)	0.0058 (0.0008)	758
RP (5)	-0.4937	0.0024	0.0658 (0.0015)	0.0063 (0.0021)	0.9471 (0.0071)	0.0044 (0.0005)	983
RP (9)	-0.4992	0.0024	0.0523 (0.0012)	0.0008 (0.0017)	0.9529 (0.0067)	0.0027 (0.0002)	998
RP (P)	-0.4962	0.0024	0.0495 (0.0011)	0.0038 (0.0016)	0.9530 (0.0067)	0.0025 (0.0001)	1000
FP (W)	-0.4814	0.0023	0.0500 (0.0017)	0.0186 (0.0024)	0.9254 (0.0127)	0.0028 (0.0002)	429
FP (k=10)	-0.4816	0.0023	0.0512 (0.0012)	0.0184 (0.0017)	0.9212 (0.0092)	0.0030 (0.0001)	863
FP (k=10000)	-0.5056	0.0019	0.0552 (0.0014)	-0.0056 (0.0020)	0.8651 (0.0123)	0.0031 (0.0002)	771

Table 75: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5029	0.0026	0.0515 (0.0012)	-0.0029 (0.0016)	0.9499 (0.0069)	0.0027 (0.0001)	999
Exp	-0.5569	0.0025	0.0570 (0.0013)	-0.0569 (0.0018)	0.7660 (0.0134)	0.0065 (0.0003)	1000
Weibull	-0.5005	0.0026	0.0516 (0.0012)	-0.0005 (0.0016)	0.9540 (0.0066)	0.0027 (0.0001)	1000
Gompertz	-0.5297	0.0025	0.0593 (0.0102)	-0.0297 (0.0140)	0.8889 (0.0741)	0.0042 (0.0016)	18
RP (3)	-0.4981	0.0026	0.0512 (0.0011)	0.0019 (0.0016)	0.9528 (0.0067)	0.0026 (0.0001)	995
RP (5)	-0.5028	0.0026	0.0516 (0.0012)	-0.0028 (0.0016)	0.9547 (0.0066)	0.0027 (0.0001)	994
RP (9)	-0.5047	0.0026	0.0516 (0.0012)	-0.0047 (0.0017)	0.9502 (0.0070)	0.0027 (0.0001)	964
RP (P)	-0.5044	0.0026	0.0517 (0.0012)	-0.0044 (0.0016)	0.9508 (0.0069)	0.0027 (0.0001)	995
FP (W)	-0.5005	0.0026	0.0516 (0.0012)	-0.0005 (0.0016)	0.9540 (0.0066)	0.0027 (0.0001)	1000
FP (k=10)	-0.5413	0.0026	0.0564 (0.0013)	-0.0413 (0.0018)	0.8390 (0.0116)	0.0049 (0.0002)	1000
FP (k=10000)	-0.5217	0.0033	0.0663 (0.0066)	-0.0217 (0.0093)	0.9608 (0.0272)	0.0048 (0.0010)	51
Model frailty: Normal							
Cox	-0.4977	0.0026	0.0521 (0.0012)	0.0023 (0.0017)	0.9519 (0.0068)	0.0027 (0.0001)	978
Exp	-0.5568	0.0025	0.0573 (0.0013)	-0.0568 (0.0019)	0.7647 (0.0139)	0.0065 (0.0003)	935
Weibull	-0.5007	0.0026	0.0516 (0.0012)	-0.0007 (0.0017)	0.9556 (0.0067)	0.0027 (0.0001)	946
Gompertz	-0.5369	0.0028	0.0617 (0.0113)	-0.0369 (0.0154)	0.9375 (0.0605)	0.0049 (0.0013)	16
RP (3)	-0.4986	0.0026	0.0514 (0.0012)	0.0014 (0.0016)	0.9499 (0.0069)	0.0026 (0.0001)	998
RP (5)	-0.5031	0.0026	0.0517 (0.0012)	-0.0031 (0.0016)	0.9519 (0.0068)	0.0027 (0.0001)	997
RP (9)	-0.4995	0.0026	0.0681 (0.0015)	0.0005 (0.0022)	0.9327 (0.0079)	0.0046 (0.0005)	996
RP (P)	-0.5045	0.0026	0.0517 (0.0012)	-0.0045 (0.0016)	0.9508 (0.0069)	0.0027 (0.0001)	996
FP (W)	-0.4961	0.0026	0.0518 (0.0016)	0.0039 (0.0023)	0.9494 (0.0097)	0.0027 (0.0002)	514
FP (k=10)	-0.5276	0.0026	0.0582 (0.0014)	-0.0276 (0.0020)	0.8733 (0.0113)	0.0041 (0.0002)	860
FP (k=10000)	-0.5412	0.0022	0.0569 (0.0014)	-0.0412 (0.0020)	0.8137 (0.0134)	0.0049 (0.0002)	848

Table 76: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5001	0.0023	0.0477 (0.0011)	-0.0001 (0.0015)	0.9505 (0.0069)	0.0023 (0.0001)	990
Exp	-0.5003	0.0022	0.0474 (0.0011)	-0.0003 (0.0015)	0.9460 (0.0071)	0.0022 (0.0001)	1000
Weibull	-0.5010	0.0022	0.0479 (0.0011)	-0.0010 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
Gompertz	-0.4972	0.0022	0.0477 (0.0015)	0.0028 (0.0021)	0.9442 (0.0102)	0.0023 (0.0001)	502
RP (3)	-0.5004	0.0023	0.0479 (0.0011)	-0.0004 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (5)	-0.5005	0.0023	0.0478 (0.0011)	-0.0005 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (9)	-0.5005	0.0023	0.0478 (0.0011)	-0.0005 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (P)	-0.5007	0.0022	0.0478 (0.0011)	-0.0007 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
FP (W)	-0.5010	0.0022	0.0479 (0.0011)	-0.0010 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
FP (k=10)	-0.4991	0.0023	0.0478 (0.0011)	0.0009 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
FP (k=10000)	-0.4998	0.0022	0.0478 (0.0011)	0.0002 (0.0015)	0.9460 (0.0071)	0.0023 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5008	0.0023	0.0479 (0.0011)	-0.0008 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
Exp	-0.5004	0.0022	0.0474 (0.0011)	-0.0004 (0.0015)	0.9459 (0.0072)	0.0022 (0.0001)	999
Weibull	-0.5014	0.0022	0.0479 (0.0011)	-0.0014 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	999
Gompertz	-0.4961	0.0022	0.0461 (0.0015)	0.0039 (0.0021)	0.9508 (0.0098)	0.0021 (0.0001)	488
RP (3)	-0.5008	0.0023	0.0479 (0.0011)	-0.0008 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (5)	-0.5009	0.0023	0.0479 (0.0011)	-0.0009 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (9)	-0.5009	0.0023	0.0479 (0.0011)	-0.0009 (0.0015)	0.9490 (0.0070)	0.0023 (0.0001)	1000
RP (P)	-0.5011	0.0022	0.0479 (0.0011)	-0.0011 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
FP (W)	-0.5021	0.0022	0.0493 (0.0014)	-0.0021 (0.0019)	0.9504 (0.0084)	0.0024 (0.0001)	665
FP (k=10)	-0.4997	0.0022	0.0482 (0.0011)	0.0003 (0.0016)	0.9476 (0.0073)	0.0023 (0.0001)	936
FP (k=10000)	-0.4998	0.0021	0.0488 (0.0011)	0.0002 (0.0016)	0.9350 (0.0079)	0.0024 (0.0001)	969

Table 77: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4975	0.0025	0.0501 (0.0011)	0.0025 (0.0016)	0.9369 (0.0078)	0.0025 (0.0001)	983
Exp	-0.5535	0.0025	0.0562 (0.0013)	-0.0535 (0.0018)	0.7920 (0.0128)	0.0060 (0.0002)	1000
Weibull	-0.4990	0.0025	0.0502 (0.0011)	0.0010 (0.0016)	0.9390 (0.0076)	0.0025 (0.0001)	1000
Gompertz	-0.5503	0.0026	0.0561 (0.0019)	-0.0503 (0.0026)	0.8114 (0.0183)	0.0057 (0.0003)	456
RP (3)	-0.4976	0.0025	0.0502 (0.0011)	0.0024 (0.0016)	0.9380 (0.0076)	0.0025 (0.0001)	1000
RP (5)	-0.4977	0.0025	0.0501 (0.0011)	0.0023 (0.0016)	0.9370 (0.0077)	0.0025 (0.0001)	1000
RP (9)	-0.4978	0.0025	0.0501 (0.0011)	0.0022 (0.0016)	0.9380 (0.0076)	0.0025 (0.0001)	1000
RP (P)	-0.4981	0.0025	0.0502 (0.0011)	0.0019 (0.0016)	0.9370 (0.0077)	0.0025 (0.0001)	1000
FP (W)	-0.4990	0.0025	0.0502 (0.0011)	0.0010 (0.0016)	0.9390 (0.0076)	0.0025 (0.0001)	1000
FP (k=10)	-0.4946	0.0025	0.0504 (0.0011)	0.0054 (0.0016)	0.9390 (0.0076)	0.0026 (0.0001)	1000
FP (k=10000)	-0.5074	0.0025	0.0522 (0.0012)	-0.0074 (0.0017)	0.9230 (0.0084)	0.0028 (0.0001)	1000
Model frailty: Normal							
Cox	-0.4981	0.0025	0.0502 (0.0011)	0.0019 (0.0016)	0.9380 (0.0076)	0.0025 (0.0001)	1000
Exp	-0.5538	0.0025	0.0563 (0.0013)	-0.0538 (0.0018)	0.7896 (0.0129)	0.0061 (0.0002)	998
Weibull	-0.4994	0.0025	0.0503 (0.0011)	0.0006 (0.0016)	0.9399 (0.0075)	0.0025 (0.0001)	999
Gompertz	-0.5520	0.0025	0.0573 (0.0019)	-0.0520 (0.0027)	0.7964 (0.0190)	0.0060 (0.0004)	447
RP (3)	-0.4980	0.0025	0.0502 (0.0011)	0.0020 (0.0016)	0.9380 (0.0076)	0.0025 (0.0001)	1000
RP (5)	-0.4982	0.0025	0.0502 (0.0011)	0.0018 (0.0016)	0.9380 (0.0076)	0.0025 (0.0001)	1000
RP (9)	-0.4982	0.0025	0.0502 (0.0011)	0.0018 (0.0016)	0.9390 (0.0076)	0.0025 (0.0001)	1000
RP (P)	-0.4986	0.0025	0.0503 (0.0011)	0.0014 (0.0016)	0.9390 (0.0076)	0.0025 (0.0001)	1000
FP (W)	-0.4997	0.0025	0.0515 (0.0013)	0.0003 (0.0019)	0.9342 (0.0090)	0.0026 (0.0001)	760
FP (k=10)	-0.4941	0.0025	0.0513 (0.0012)	0.0059 (0.0017)	0.9340 (0.0080)	0.0027 (0.0001)	955
FP (k=10000)	-0.5033	0.0024	0.0523 (0.0012)	-0.0033 (0.0017)	0.9214 (0.0087)	0.0027 (0.0001)	967

Table 78: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5000	0.0019	0.0430 (0.0010)	-0.0000 (0.0014)	0.9575 (0.0064)	0.0019 (0.0001)	989
Exp	-0.4362	0.0019	0.0379 (0.0008)	0.0638 (0.0012)	0.7080 (0.0144)	0.0055 (0.0002)	1000
Weibull	-0.4835	0.0019	0.0418 (0.0009)	0.0165 (0.0013)	0.9460 (0.0071)	0.0020 (0.0001)	1000
Gompertz	-0.4415	0.0019	0.0421 (0.0012)	0.0585 (0.0017)	0.7334 (0.0174)	0.0052 (0.0002)	649
RP (3)	-0.4998	0.0019	0.0430 (0.0010)	0.0002 (0.0014)	0.9560 (0.0065)	0.0018 (0.0001)	1000
RP (5)	-0.4999	0.0019	0.0430 (0.0010)	0.0001 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (9)	-0.5000	0.0019	0.0430 (0.0010)	0.0000 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (P)	-0.4981	0.0019	0.0429 (0.0010)	0.0019 (0.0014)	0.9580 (0.0063)	0.0018 (0.0001)	1000
FP (W)	-0.4835	0.0019	0.0418 (0.0009)	0.0165 (0.0013)	0.9460 (0.0071)	0.0020 (0.0001)	1000
FP (k=10)	-0.4988	0.0019	0.0430 (0.0010)	0.0012 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
FP (k=10000)	-0.4984	0.0019	0.0429 (0.0010)	0.0016 (0.0014)	0.9550 (0.0066)	0.0018 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5002	0.0019	0.0431 (0.0010)	-0.0002 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	999
Exp	-0.4362	0.0019	0.0380 (0.0008)	0.0638 (0.0012)	0.7097 (0.0144)	0.0055 (0.0002)	999
Weibull	-0.4838	0.0019	0.0419 (0.0009)	0.0162 (0.0013)	0.9469 (0.0071)	0.0020 (0.0001)	998
Gompertz	-0.4412	0.0019	0.0417 (0.0012)	0.0588 (0.0017)	0.7341 (0.0176)	0.0052 (0.0002)	628
RP (3)	-0.5000	0.0019	0.0430 (0.0010)	-0.0000 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (5)	-0.5002	0.0019	0.0431 (0.0010)	-0.0002 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (9)	-0.5003	0.0019	0.0431 (0.0010)	-0.0003 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (P)	-0.4984	0.0019	0.0429 (0.0010)	0.0016 (0.0014)	0.9580 (0.0063)	0.0018 (0.0001)	1000
FP (W)	-0.4828	0.0019	0.0433 (0.0012)	0.0172 (0.0017)	0.9308 (0.0102)	0.0022 (0.0001)	621
FP (k=10)	-0.4985	0.0019	0.0439 (0.0010)	0.0015 (0.0014)	0.9469 (0.0073)	0.0019 (0.0001)	941
FP (k=10000)	-0.4983	0.0018	0.0437 (0.0010)	0.0017 (0.0014)	0.9446 (0.0074)	0.0019 (0.0001)	956

Table 79: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4996	0.0020	0.0434 (0.0010)	0.0004 (0.0014)	0.9587 (0.0063)	0.0019 (0.0001)	993
Exp	-0.3913	0.0019	0.0363 (0.0008)	0.1087 (0.0011)	0.2610 (0.0139)	0.0131 (0.0003)	1000
Weibull	-0.5162	0.0020	0.0453 (0.0010)	-0.0162 (0.0014)	0.9310 (0.0080)	0.0023 (0.0001)	1000
Gompertz	-0.4170	0.0020	0.0565 (0.0015)	0.0830 (0.0021)	0.4470 (0.0184)	0.0101 (0.0003)	727
RP (3)	-0.5007	0.0020	0.0434 (0.0010)	-0.0007 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
RP (5)	-0.4999	0.0020	0.0434 (0.0010)	0.0001 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (9)	-0.4999	0.0020	0.0434 (0.0010)	0.0001 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (P)	-0.5001	0.0020	0.0434 (0.0010)	-0.0001 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
FP (W)	-0.5162	0.0020	0.0453 (0.0010)	-0.0162 (0.0014)	0.9310 (0.0080)	0.0023 (0.0001)	1000
FP (k=10)	-0.4953	0.0020	0.0434 (0.0010)	0.0047 (0.0014)	0.9560 (0.0065)	0.0019 (0.0001)	1000
FP (k=10000)	-0.4888	0.0020	0.0442 (0.0010)	0.0112 (0.0014)	0.9468 (0.0071)	0.0021 (0.0001)	996
Model frailty: Normal							
Cox	-0.5001	0.0020	0.0434 (0.0010)	-0.0001 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
Exp	-0.3912	0.0019	0.0363 (0.0008)	0.1088 (0.0011)	0.2613 (0.0139)	0.0132 (0.0003)	999
Weibull	-0.5164	0.0020	0.0453 (0.0010)	-0.0164 (0.0014)	0.9299 (0.0081)	0.0023 (0.0001)	998
Gompertz	-0.4134	0.0020	0.0559 (0.0015)	0.0866 (0.0021)	0.4188 (0.0188)	0.0106 (0.0003)	690
RP (3)	-0.5010	0.0020	0.0435 (0.0010)	-0.0010 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (5)	-0.5002	0.0020	0.0434 (0.0010)	-0.0002 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (9)	-0.5002	0.0020	0.0434 (0.0010)	-0.0002 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
RP (P)	-0.5004	0.0020	0.0434 (0.0010)	-0.0004 (0.0014)	0.9570 (0.0064)	0.0019 (0.0001)	1000
FP (W)	-0.5166	0.0020	0.0443 (0.0013)	-0.0166 (0.0019)	0.9431 (0.0098)	0.0022 (0.0001)	562
FP (k=10)	-0.4951	0.0020	0.0441 (0.0010)	0.0049 (0.0014)	0.9522 (0.0070)	0.0020 (0.0001)	941
FP (k=10000)	-0.4936	0.0019	0.0486 (0.0011)	0.0064 (0.0016)	0.9157 (0.0089)	0.0024 (0.0001)	973

Table 80: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5014	0.0024	0.0495 (0.0011)	-0.0014 (0.0016)	0.9483 (0.0071)	0.0024 (0.0001)	986
Exp	-0.5275	0.0023	0.0511 (0.0011)	-0.0275 (0.0016)	0.8950 (0.0097)	0.0034 (0.0001)	1000
Weibull	-0.5027	0.0024	0.0490 (0.0011)	-0.0027 (0.0016)	0.9500 (0.0069)	0.0024 (0.0001)	1000
Gompertz	-0.5316	0.0024	0.0508 (0.0017)	-0.0316 (0.0024)	0.8781 (0.0155)	0.0036 (0.0002)	443
RP (3)	-0.5007	0.0024	0.0492 (0.0011)	-0.0007 (0.0016)	0.9500 (0.0069)	0.0024 (0.0001)	1000
RP (5)	-0.5014	0.0024	0.0493 (0.0011)	-0.0014 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
RP (9)	-0.5016	0.0024	0.0493 (0.0011)	-0.0016 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
RP (P)	-0.5014	0.0024	0.0493 (0.0011)	-0.0014 (0.0016)	0.9500 (0.0069)	0.0024 (0.0001)	1000
FP (W)	-0.5027	0.0024	0.0490 (0.0011)	-0.0027 (0.0016)	0.9500 (0.0069)	0.0024 (0.0001)	1000
FP (k=10)	-0.4995	0.0024	0.0493 (0.0011)	0.0005 (0.0016)	0.9500 (0.0069)	0.0024 (0.0001)	1000
FP (k=10000)	-0.4975	0.0023	0.0489 (0.0011)	0.0025 (0.0015)	0.9490 (0.0070)	0.0024 (0.0001)	1000
Model frailty: Normal							
Cox	-0.5018	0.0024	0.0493 (0.0011)	-0.0018 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
Exp	-0.5276	0.0023	0.0511 (0.0011)	-0.0276 (0.0016)	0.8947 (0.0097)	0.0034 (0.0001)	997
Weibull	-0.5030	0.0024	0.0492 (0.0011)	-0.0030 (0.0016)	0.9498 (0.0069)	0.0024 (0.0001)	997
Gompertz	-0.5307	0.0024	0.0512 (0.0017)	-0.0307 (0.0025)	0.8833 (0.0154)	0.0036 (0.0002)	437
RP (3)	-0.5012	0.0024	0.0492 (0.0011)	-0.0012 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
RP (5)	-0.5019	0.0024	0.0493 (0.0011)	-0.0019 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
RP (9)	-0.5020	0.0024	0.0494 (0.0011)	-0.0020 (0.0016)	0.9480 (0.0070)	0.0024 (0.0001)	1000
RP (P)	-0.5018	0.0024	0.0493 (0.0011)	-0.0018 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
FP (W)	-0.5041	0.0023	0.0498 (0.0013)	-0.0041 (0.0019)	0.9443 (0.0087)	0.0025 (0.0001)	700
FP (k=10)	-0.4996	0.0023	0.0504 (0.0012)	0.0004 (0.0016)	0.9422 (0.0076)	0.0025 (0.0001)	951
FP (k=10000)	-0.4989	0.0022	0.0497 (0.0011)	0.0011 (0.0016)	0.9368 (0.0078)	0.0025 (0.0001)	965

Table 81: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4998	0.0018	0.0454 (0.0010)	0.0002 (0.0015)	0.9288 (0.0083)	0.0021 (0.0001)	969
Exp	-0.5009	0.0018	0.0449 (0.0010)	-0.0009 (0.0014)	0.9370 (0.0077)	0.0020 (0.0001)	1000
Weibull	-0.5010	0.0018	0.0453 (0.0010)	-0.0010 (0.0014)	0.9280 (0.0082)	0.0020 (0.0001)	1000
Gompertz	-0.5020	0.0018	0.0473 (0.0016)	-0.0020 (0.0022)	0.9233 (0.0126)	0.0022 (0.0001)	443
RP (3)	-0.5002	0.0018	0.0453 (0.0010)	-0.0002 (0.0014)	0.9300 (0.0081)	0.0021 (0.0001)	1000
RP (5)	-0.5002	0.0018	0.0453 (0.0010)	-0.0002 (0.0014)	0.9300 (0.0081)	0.0021 (0.0001)	1000
RP (9)	-0.5003	0.0018	0.0453 (0.0010)	-0.0003 (0.0014)	0.9300 (0.0081)	0.0021 (0.0001)	1000
RP (P)	-0.5007	0.0018	0.0453 (0.0010)	-0.0007 (0.0014)	0.9259 (0.0083)	0.0021 (0.0001)	998
FP (W)	-0.5010	0.0018	0.0453 (0.0010)	-0.0010 (0.0014)	0.9280 (0.0082)	0.0020 (0.0001)	1000
FP (k=10)	-0.4993	0.0018	0.0453 (0.0010)	0.0007 (0.0014)	0.9320 (0.0080)	0.0021 (0.0001)	1000
FP (k=10000)	-0.4995	0.0018	0.0452 (0.0010)	0.0005 (0.0014)	0.9279 (0.0082)	0.0020 (0.0001)	999
Model frailty: Normal							
Cox	-0.5005	0.0018	0.0454 (0.0010)	-0.0005 (0.0014)	0.9300 (0.0081)	0.0021 (0.0001)	1000
Exp	-0.5009	0.0018	0.0449 (0.0010)	-0.0009 (0.0014)	0.9369 (0.0077)	0.0020 (0.0001)	999
Weibull	-0.5012	0.0018	0.0453 (0.0010)	-0.0012 (0.0014)	0.9280 (0.0082)	0.0021 (0.0001)	1000
Gompertz	-0.5004	0.0018	0.0461 (0.0015)	-0.0004 (0.0022)	0.9238 (0.0126)	0.0021 (0.0001)	446
RP (3)	-0.5005	0.0018	0.0454 (0.0010)	-0.0005 (0.0014)	0.9290 (0.0081)	0.0021 (0.0001)	1000
RP (5)	-0.5005	0.0018	0.0454 (0.0010)	-0.0005 (0.0014)	0.9300 (0.0081)	0.0021 (0.0001)	1000
RP (9)	-0.5006	0.0018	0.0454 (0.0010)	-0.0006 (0.0014)	0.9300 (0.0081)	0.0021 (0.0001)	1000
RP (P)	-0.5009	0.0018	0.0454 (0.0010)	-0.0009 (0.0014)	0.9270 (0.0082)	0.0021 (0.0001)	1000
FP (W)	-0.5021	0.0018	0.0446 (0.0012)	-0.0021 (0.0018)	0.9353 (0.0097)	0.0020 (0.0001)	649
FP (k=10)	-0.4988	0.0018	0.0464 (0.0011)	0.0012 (0.0015)	0.9230 (0.0087)	0.0021 (0.0001)	935
FP (k=10000)	-0.4995	0.0017	0.0462 (0.0011)	0.0005 (0.0015)	0.9081 (0.0094)	0.0021 (0.0001)	947

Table 82: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.5000	0.0020	0.0454 (0.0010)	0.0000 (0.0014)	0.9541 (0.0067)	0.0021 (0.0001)	980
Exp	-0.5680	0.0020	0.0521 (0.0012)	-0.0680 (0.0016)	0.6280 (0.0153)	0.0073 (0.0002)	1000
Weibull	-0.5019	0.0020	0.0454 (0.0010)	-0.0019 (0.0014)	0.9540 (0.0066)	0.0021 (0.0001)	1000
Gompertz	-0.5672	0.0020	0.0492 (0.0017)	-0.0672 (0.0025)	0.6303 (0.0240)	0.0069 (0.0003)	403
RP (3)	-0.5000	0.0020	0.0453 (0.0010)	0.0000 (0.0014)	0.9550 (0.0066)	0.0021 (0.0001)	1000
RP (5)	-0.4999	0.0020	0.0453 (0.0010)	0.0001 (0.0014)	0.9540 (0.0066)	0.0021 (0.0001)	1000
RP (9)	-0.4999	0.0020	0.0453 (0.0010)	0.0001 (0.0014)	0.9550 (0.0066)	0.0020 (0.0001)	1000
RP (P)	-0.5001	0.0020	0.0453 (0.0010)	-0.0001 (0.0014)	0.9550 (0.0066)	0.0021 (0.0001)	1000
FP (W)	-0.5019	0.0020	0.0454 (0.0010)	-0.0019 (0.0014)	0.9540 (0.0066)	0.0021 (0.0001)	1000
FP (k=10)	-0.4996	0.0020	0.0462 (0.0010)	0.0004 (0.0015)	0.9510 (0.0068)	0.0021 (0.0001)	1000
FP (k=10000)	-0.5223	0.0020	0.0487 (0.0011)	-0.0223 (0.0016)	0.8918 (0.0099)	0.0029 (0.0001)	980
Model frailty: Normal							
Cox	-0.5001	0.0020	0.0453 (0.0010)	-0.0001 (0.0014)	0.9550 (0.0066)	0.0020 (0.0001)	1000
Exp	-0.5681	0.0020	0.0521 (0.0012)	-0.0681 (0.0016)	0.6280 (0.0153)	0.0074 (0.0002)	1000
Weibull	-0.5022	0.0020	0.0454 (0.0010)	-0.0022 (0.0014)	0.9540 (0.0066)	0.0021 (0.0001)	1000
Gompertz	-0.5668	0.0020	0.0501 (0.0018)	-0.0668 (0.0025)	0.6485 (0.0238)	0.0070 (0.0004)	404
RP (3)	-0.5003	0.0020	0.0454 (0.0010)	-0.0003 (0.0014)	0.9550 (0.0066)	0.0021 (0.0001)	1000
RP (5)	-0.5003	0.0020	0.0453 (0.0010)	-0.0003 (0.0014)	0.9540 (0.0066)	0.0021 (0.0001)	1000
RP (9)	-0.5003	0.0020	0.0453 (0.0010)	-0.0003 (0.0014)	0.9550 (0.0066)	0.0021 (0.0001)	1000
RP (P)	-0.5005	0.0020	0.0454 (0.0010)	-0.0005 (0.0014)	0.9540 (0.0066)	0.0021 (0.0001)	1000
FP (W)	-0.5016	0.0020	0.0456 (0.0012)	-0.0016 (0.0017)	0.9538 (0.0080)	0.0021 (0.0001)	693
FP (k=10)	-0.4990	0.0020	0.0473 (0.0011)	0.0010 (0.0015)	0.9421 (0.0077)	0.0022 (0.0001)	932
FP (k=10000)	-0.5188	0.0019	0.0497 (0.0011)	-0.0188 (0.0016)	0.8911 (0.0100)	0.0028 (0.0001)	964

Table 83: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4976	0.0016	0.0392 (0.0009)	0.0024 (0.0013)	0.9547 (0.0067)	0.0015 (0.0001)	972
Exp	-0.4354	0.0016	0.0340 (0.0008)	0.0646 (0.0011)	0.6450 (0.0151)	0.0053 (0.0001)	1000
Weibull	-0.4814	0.0016	0.0381 (0.0009)	0.0186 (0.0012)	0.9370 (0.0077)	0.0018 (0.0001)	1000
Gompertz	-0.4386	0.0016	0.0374 (0.0011)	0.0614 (0.0016)	0.6661 (0.0199)	0.0052 (0.0002)	563
RP (3)	-0.4975	0.0016	0.0394 (0.0009)	0.0025 (0.0012)	0.9540 (0.0066)	0.0016 (0.0001)	1000
RP (5)	-0.4978	0.0016	0.0394 (0.0009)	0.0022 (0.0012)	0.9560 (0.0065)	0.0016 (0.0001)	1000
RP (9)	-0.4979	0.0016	0.0394 (0.0009)	0.0021 (0.0012)	0.9560 (0.0065)	0.0016 (0.0001)	1000
RP (P)	-0.4964	0.0016	0.0393 (0.0009)	0.0036 (0.0012)	0.9569 (0.0064)	0.0016 (0.0001)	998
FP (W)	-0.4814	0.0016	0.0381 (0.0009)	0.0186 (0.0012)	0.9370 (0.0077)	0.0018 (0.0001)	1000
FP (k=10)	-0.4970	0.0016	0.0394 (0.0009)	0.0030 (0.0012)	0.9570 (0.0064)	0.0016 (0.0001)	1000
FP (k=10000)	-0.4965	0.0016	0.0392 (0.0009)	0.0035 (0.0013)	0.9534 (0.0068)	0.0015 (0.0001)	965
Model frailty: Normal							
Cox	-0.4979	0.0016	0.0394 (0.0009)	0.0021 (0.0012)	0.9560 (0.0065)	0.0016 (0.0001)	1000
Exp	-0.4353	0.0016	0.0340 (0.0008)	0.0647 (0.0011)	0.6456 (0.0151)	0.0053 (0.0001)	999
Weibull	-0.4816	0.0016	0.0382 (0.0009)	0.0184 (0.0012)	0.9389 (0.0076)	0.0018 (0.0001)	998
Gompertz	-0.4379	0.0016	0.0363 (0.0011)	0.0621 (0.0015)	0.6516 (0.0202)	0.0052 (0.0002)	554
RP (3)	-0.4976	0.0016	0.0394 (0.0009)	0.0024 (0.0012)	0.9550 (0.0066)	0.0016 (0.0001)	1000
RP (5)	-0.4979	0.0016	0.0394 (0.0009)	0.0021 (0.0012)	0.9560 (0.0065)	0.0016 (0.0001)	1000
RP (9)	-0.4981	0.0016	0.0394 (0.0009)	0.0019 (0.0012)	0.9560 (0.0065)	0.0016 (0.0001)	1000
RP (P)	-0.4966	0.0016	0.0393 (0.0009)	0.0034 (0.0012)	0.9570 (0.0064)	0.0016 (0.0001)	1000
FP (W)	-0.4821	0.0016	0.0394 (0.0012)	0.0179 (0.0017)	0.9326 (0.0106)	0.0019 (0.0001)	564
FP (k=10)	-0.4957	0.0016	0.0398 (0.0009)	0.0043 (0.0013)	0.9534 (0.0070)	0.0016 (0.0001)	902
FP (k=10000)	-0.4965	0.0014	0.0397 (0.0009)	0.0035 (0.0013)	0.9313 (0.0083)	0.0016 (0.0001)	932

Table 84: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4974	0.0017	0.0409 (0.0009)	0.0026 (0.0013)	0.9521 (0.0068)	0.0017 (0.0001)	982
Exp	-0.3710	0.0016	0.0330 (0.0007)	0.1290 (0.0010)	0.0670 (0.0079)	0.0177 (0.0003)	1000
Weibull	-0.5128	0.0017	0.0423 (0.0009)	-0.0128 (0.0013)	0.9310 (0.0080)	0.0020 (0.0001)	1000
Gompertz	-0.4150	0.0016	0.0658 (0.0016)	0.0850 (0.0023)	0.4234 (0.0174)	0.0116 (0.0004)	803
RP (3)	-0.4978	0.0017	0.0410 (0.0009)	0.0022 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
RP (5)	-0.4976	0.0017	0.0410 (0.0009)	0.0024 (0.0013)	0.9500 (0.0069)	0.0017 (0.0001)	1000
RP (9)	-0.4977	0.0017	0.0410 (0.0009)	0.0023 (0.0013)	0.9510 (0.0068)	0.0017 (0.0001)	1000
RP (P)	-0.4976	0.0017	0.0409 (0.0009)	0.0024 (0.0013)	0.9530 (0.0067)	0.0017 (0.0001)	1000
FP (W)	-0.5129	0.0017	0.0423 (0.0009)	-0.0129 (0.0013)	0.9309 (0.0080)	0.0020 (0.0001)	998
FP (k=10)	-0.4911	0.0017	0.0409 (0.0009)	0.0089 (0.0013)	0.9480 (0.0070)	0.0017 (0.0001)	1000
FP (k=10000)	-0.4873	0.0017	0.0414 (0.0009)	0.0127 (0.0013)	0.9298 (0.0082)	0.0019 (0.0001)	968
Model frailty: Normal							
Cox	-0.4977	0.0017	0.0410 (0.0009)	0.0023 (0.0013)	0.9510 (0.0068)	0.0017 (0.0001)	1000
Exp	-0.3709	0.0016	0.0330 (0.0007)	0.1291 (0.0010)	0.0670 (0.0079)	0.0178 (0.0003)	1000
Weibull	-0.5129	0.0017	0.0423 (0.0009)	-0.0129 (0.0013)	0.9308 (0.0080)	0.0020 (0.0001)	997
Gompertz	-0.4121	0.0016	0.0647 (0.0017)	0.0879 (0.0024)	0.3975 (0.0182)	0.0119 (0.0004)	727
RP (3)	-0.4980	0.0017	0.0410 (0.0009)	0.0020 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
RP (5)	-0.4977	0.0017	0.0410 (0.0009)	0.0023 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
RP (9)	-0.4978	0.0017	0.0410 (0.0009)	0.0022 (0.0013)	0.9510 (0.0068)	0.0017 (0.0001)	1000
RP (P)	-0.4977	0.0017	0.0410 (0.0009)	0.0023 (0.0013)	0.9520 (0.0068)	0.0017 (0.0001)	1000
FP (W)	-0.5135	0.0017	0.0444 (0.0013)	-0.0135 (0.0019)	0.9114 (0.0122)	0.0021 (0.0001)	542
FP (k=10)	-0.4904	0.0016	0.0427 (0.0010)	0.0096 (0.0014)	0.9260 (0.0086)	0.0019 (0.0001)	919
FP (k=10000)	-0.5091	0.0015	0.0504 (0.0012)	-0.0091 (0.0017)	0.8525 (0.0116)	0.0026 (0.0001)	929

Table 85: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4979	0.0019	0.0438 (0.0010)	0.0021 (0.0014)	0.9490 (0.0070)	0.0019 (0.0001)	981
Exp	-0.5260	0.0019	0.0459 (0.0010)	-0.0260 (0.0015)	0.9000 (0.0095)	0.0028 (0.0001)	1000
Weibull	-0.4969	0.0019	0.0439 (0.0010)	0.0031 (0.0014)	0.9470 (0.0071)	0.0019 (0.0001)	1000
Gompertz	-0.5260	0.0019	0.0465 (0.0016)	-0.0260 (0.0023)	0.8955 (0.0149)	0.0028 (0.0002)	421
RP (3)	-0.4975	0.0019	0.0438 (0.0010)	0.0025 (0.0014)	0.9460 (0.0071)	0.0019 (0.0001)	1000
RP (5)	-0.4980	0.0019	0.0438 (0.0010)	0.0020 (0.0014)	0.9490 (0.0070)	0.0019 (0.0001)	1000
RP (9)	-0.4980	0.0019	0.0438 (0.0010)	0.0020 (0.0014)	0.9470 (0.0071)	0.0019 (0.0001)	1000
RP (P)	-0.4980	0.0019	0.0438 (0.0010)	0.0020 (0.0014)	0.9488 (0.0070)	0.0019 (0.0001)	997
FP (W)	-0.4969	0.0019	0.0439 (0.0010)	0.0031 (0.0014)	0.9470 (0.0071)	0.0019 (0.0001)	1000
FP (k=10)	-0.4979	0.0019	0.0441 (0.0010)	0.0021 (0.0014)	0.9470 (0.0071)	0.0019 (0.0001)	1000
FP (k=10000)	-0.4963	0.0019	0.0439 (0.0010)	0.0037 (0.0014)	0.9437 (0.0073)	0.0019 (0.0001)	994
Model frailty: Normal							
Cox	-0.4982	0.0019	0.0438 (0.0010)	0.0018 (0.0014)	0.9479 (0.0070)	0.0019 (0.0001)	999
Exp	-0.5261	0.0019	0.0459 (0.0010)	-0.0261 (0.0015)	0.8997 (0.0095)	0.0028 (0.0001)	997
Weibull	-0.4973	0.0019	0.0439 (0.0010)	0.0027 (0.0014)	0.9469 (0.0071)	0.0019 (0.0001)	998
Gompertz	-0.5279	0.0019	0.0459 (0.0017)	-0.0279 (0.0023)	0.8938 (0.0157)	0.0029 (0.0002)	386
RP (3)	-0.4979	0.0019	0.0438 (0.0010)	0.0021 (0.0014)	0.9480 (0.0070)	0.0019 (0.0001)	1000
RP (5)	-0.4983	0.0019	0.0438 (0.0010)	0.0017 (0.0014)	0.9480 (0.0070)	0.0019 (0.0001)	1000
RP (9)	-0.4984	0.0019	0.0438 (0.0010)	0.0016 (0.0014)	0.9480 (0.0070)	0.0019 (0.0001)	1000
RP (P)	-0.4983	0.0019	0.0438 (0.0010)	0.0017 (0.0014)	0.9500 (0.0069)	0.0019 (0.0001)	1000
FP (W)	-0.4985	0.0019	0.0439 (0.0012)	0.0015 (0.0017)	0.9441 (0.0088)	0.0019 (0.0001)	680
FP (k=10)	-0.4972	0.0019	0.0454 (0.0011)	0.0028 (0.0015)	0.9300 (0.0084)	0.0021 (0.0001)	929
FP (k=10000)	-0.4970	0.0017	0.0450 (0.0010)	0.0030 (0.0015)	0.9313 (0.0082)	0.0020 (0.0001)	961

Table 86: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4987	0.0028	0.0516 (0.0012)	0.0013 (0.0016)	0.9540 (0.0066)	0.0027 (0.0001)	999
Exp	-0.4956	0.0027	0.0506 (0.0011)	0.0044 (0.0016)	0.9440 (0.0073)	0.0026 (0.0001)	1000
Weibull	-0.5116	0.0027	0.0534 (0.0012)	-0.0116 (0.0017)	0.9420 (0.0074)	0.0030 (0.0001)	1000
Gompertz	-0.5064	0.0024	0.0407 (0.0057)	-0.0064 (0.0080)	1.0000 (0.0000)	0.0016 (0.0004)	26
RP (3)	-0.4993	0.0027	0.0521 (0.0012)	0.0007 (0.0017)	0.9496 (0.0071)	0.0027 (0.0001)	953
RP (5)	-0.5002	0.0027	0.0533 (0.0012)	-0.0002 (0.0017)	0.9525 (0.0069)	0.0028 (0.0002)	947
RP (9)	-0.4997	0.0028	0.0515 (0.0012)	0.0003 (0.0017)	0.9547 (0.0069)	0.0027 (0.0001)	905
RP (P)	-0.5007	0.0027	0.0518 (0.0012)	-0.0007 (0.0017)	0.9515 (0.0069)	0.0027 (0.0001)	970
FP (W)	-0.5115	0.0027	0.0534 (0.0012)	-0.0115 (0.0017)	0.9419 (0.0074)	0.0030 (0.0001)	999
FP (k=10)	-0.4950	0.0027	0.0506 (0.0011)	0.0050 (0.0016)	0.9470 (0.0071)	0.0026 (0.0001)	1000
FP (k=10000)	-0.5020	0.0032	0.0889 (0.0281)	-0.0020 (0.0363)	0.6667 (0.1925)	0.0066 (0.0032)	6
Model frailty: Normal							
Cox	-0.4829	0.0027	0.0580 (0.0013)	0.0171 (0.0019)	0.9095 (0.0093)	0.0037 (0.0002)	950
Exp	-0.4957	0.0027	0.0501 (0.0012)	0.0043 (0.0016)	0.9483 (0.0073)	0.0025 (0.0001)	928
Weibull	-0.5117	0.0028	0.0529 (0.0012)	-0.0117 (0.0018)	0.9439 (0.0076)	0.0029 (0.0001)	909
Gompertz	-0.5031	0.0023	0.0426 (0.0069)	-0.0031 (0.0095)	1.0000 (0.0000)	0.0017 (0.0005)	20
RP (3)	-0.4957	0.0028	0.0662 (0.0015)	0.0043 (0.0021)	0.9358 (0.0078)	0.0044 (0.0006)	981
RP (5)	-0.4960	0.0028	0.0675 (0.0015)	0.0040 (0.0022)	0.9416 (0.0075)	0.0046 (0.0006)	976
RP (9)	-0.4899	0.0028	0.0810 (0.0018)	0.0101 (0.0026)	0.9281 (0.0083)	0.0067 (0.0008)	973
RP (P)	-0.5009	0.0028	0.0520 (0.0012)	-0.0009 (0.0017)	0.9511 (0.0069)	0.0027 (0.0001)	981
FP (W)	-0.4983	0.0027	0.0533 (0.0016)	0.0017 (0.0023)	0.9476 (0.0096)	0.0028 (0.0002)	534
FP (k=10)	-0.4869	0.0026	0.0512 (0.0013)	0.0131 (0.0018)	0.9448 (0.0079)	0.0028 (0.0001)	834
FP (k=10000)	-0.4932	0.0023	0.0508 (0.0014)	0.0068 (0.0019)	0.9309 (0.0096)	0.0026 (0.0001)	695

Table 87: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4932	0.0029	0.0535 (0.0012)	0.0068 (0.0017)	0.9560 (0.0065)	0.0029 (0.0001)	999
Exp	-0.5884	0.0028	0.0648 (0.0014)	-0.0884 (0.0020)	0.5880 (0.0156)	0.0120 (0.0004)	1000
Weibull	-0.5263	0.0029	0.0571 (0.0013)	-0.0263 (0.0018)	0.9100 (0.0090)	0.0039 (0.0002)	1000
Gompertz	-0.5861	0.0027	0.0693 (0.0148)	-0.0861 (0.0200)	0.6667 (0.1361)	0.0118 (0.0042)	12
RP (3)	-0.5005	0.0028	0.0537 (0.0012)	-0.0005 (0.0017)	0.9518 (0.0069)	0.0029 (0.0001)	976
RP (5)	-0.5016	0.0029	0.0535 (0.0014)	-0.0016 (0.0019)	0.9569 (0.0073)	0.0029 (0.0001)	766
RP (9)	-0.4934	0.0030	0.0586 (0.0031)	0.0066 (0.0044)	0.9432 (0.0174)	0.0035 (0.0003)	176
RP (P)	-0.5026	0.0029	0.0536 (0.0012)	-0.0026 (0.0017)	0.9550 (0.0066)	0.0029 (0.0001)	978
FP (W)	-0.5262	0.0029	0.0570 (0.0013)	-0.0262 (0.0018)	0.9108 (0.0090)	0.0039 (0.0002)	998
FP (k=10)	-0.5714	0.0028	0.0640 (0.0014)	-0.0714 (0.0020)	0.6794 (0.0148)	0.0092 (0.0003)	995
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	-0.4788	0.0028	0.0590 (0.0014)	0.0212 (0.0019)	0.9115 (0.0092)	0.0039 (0.0002)	949
Exp	-0.5892	0.0027	0.0635 (0.0015)	-0.0892 (0.0022)	0.5869 (0.0168)	0.0120 (0.0004)	857
Weibull	-0.5257	0.0028	0.0569 (0.0013)	-0.0257 (0.0019)	0.9078 (0.0095)	0.0039 (0.0002)	922
Gompertz	-0.6166	0.0025	0.0663 (0.0191)	-0.1166 (0.0251)	0.7143 (0.1707)	0.0174 (0.0083)	7
RP (3)	-0.5011	0.0029	0.0550 (0.0013)	-0.0011 (0.0019)	0.9456 (0.0078)	0.0030 (0.0001)	845
RP (5)	-0.4718	0.0029	0.1220 (0.0031)	0.0282 (0.0044)	0.8841 (0.0114)	0.0156 (0.0017)	785
RP (9)	-0.2709	0.0030	0.2055 (0.0055)	0.2291 (0.0078)	0.3333 (0.0178)	0.0946 (0.0032)	702
RP (P)	-0.5015	0.0029	0.0572 (0.0015)	-0.0015 (0.0021)	0.9488 (0.0080)	0.0033 (0.0003)	761
FP (W)	-0.5123	0.0028	0.0563 (0.0017)	-0.0123 (0.0024)	0.9357 (0.0104)	0.0033 (0.0002)	560
FP (k=10)	-0.5402	0.0028	0.0630 (0.0016)	-0.0402 (0.0022)	0.8101 (0.0139)	0.0056 (0.0003)	795
FP (k=10000)	-0.5870	0.0024	0.0631 (0.0024)	-0.0870 (0.0033)	0.5363 (0.0264)	0.0115 (0.0006)	358

Table 88: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4982	0.0026	0.0504 (0.0011)	0.0018 (0.0016)	0.9480 (0.0070)	0.0025 (0.0001)	1000
Exp	-0.4815	0.0025	0.0482 (0.0011)	0.0185 (0.0015)	0.9410 (0.0075)	0.0027 (0.0001)	1000
Weibull	-0.5139	0.0026	0.0520 (0.0012)	-0.0139 (0.0016)	0.9290 (0.0081)	0.0029 (0.0001)	1000
Gompertz	-0.4731	0.0023	0.0506 (0.0089)	0.0269 (0.0123)	0.8824 (0.0781)	0.0031 (0.0011)	17
RP (3)	-0.5031	0.0026	0.0511 (0.0012)	-0.0031 (0.0016)	0.9401 (0.0076)	0.0026 (0.0001)	968
RP (5)	-0.5012	0.0026	0.0512 (0.0012)	-0.0012 (0.0016)	0.9400 (0.0076)	0.0026 (0.0001)	966
RP (9)	-0.4993	0.0026	0.0509 (0.0012)	0.0007 (0.0017)	0.9442 (0.0075)	0.0026 (0.0001)	932
RP (P)	-0.4998	0.0026	0.0508 (0.0012)	0.0002 (0.0016)	0.9424 (0.0075)	0.0026 (0.0001)	972
FP (W)	-0.5140	0.0026	0.0520 (0.0012)	-0.0140 (0.0016)	0.9289 (0.0081)	0.0029 (0.0001)	998
FP (k=10)	-0.4975	0.0025	0.0500 (0.0011)	0.0025 (0.0016)	0.9439 (0.0073)	0.0025 (0.0001)	999
FP (k=10000)	-0.5073	0.0020	0.0425 (0.0114)	-0.0073 (0.0150)	1.0000 (0.0000)	0.0016 (0.0004)	8
Model frailty: Normal							
Cox	-0.4818	0.0026	0.0567 (0.0013)	0.0182 (0.0018)	0.9091 (0.0093)	0.0035 (0.0002)	957
Exp	-0.4804	0.0025	0.0480 (0.0011)	0.0196 (0.0016)	0.9418 (0.0078)	0.0027 (0.0001)	894
Weibull	-0.5128	0.0026	0.0520 (0.0013)	-0.0128 (0.0018)	0.9326 (0.0086)	0.0029 (0.0001)	860
Gompertz	-0.4809	0.0028	0.0593 (0.0133)	0.0191 (0.0179)	0.9091 (0.0867)	0.0036 (0.0012)	11
RP (3)	-0.5036	0.0026	0.0524 (0.0012)	-0.0036 (0.0017)	0.9412 (0.0075)	0.0028 (0.0002)	986
RP (5)	-0.5005	0.0026	0.0545 (0.0012)	-0.0005 (0.0017)	0.9429 (0.0074)	0.0030 (0.0003)	981
RP (9)	-0.4948	0.0026	0.0675 (0.0015)	0.0052 (0.0022)	0.9335 (0.0080)	0.0046 (0.0005)	978
RP (P)	-0.5001	0.0026	0.0504 (0.0011)	-0.0001 (0.0016)	0.9489 (0.0070)	0.0025 (0.0001)	979
FP (W)	-0.5027	0.0025	0.0501 (0.0017)	-0.0027 (0.0024)	0.9486 (0.0107)	0.0025 (0.0002)	428
FP (k=10)	-0.4842	0.0025	0.0516 (0.0013)	0.0158 (0.0018)	0.9290 (0.0091)	0.0029 (0.0001)	789
FP (k=10000)	-0.4945	0.0021	0.0502 (0.0014)	0.0055 (0.0020)	0.9323 (0.0100)	0.0026 (0.0001)	635

Table 89: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4990	0.0027	0.0522 (0.0012)	0.0010 (0.0017)	0.9450 (0.0072)	0.0027 (0.0001)	1000
Exp	-0.3251	0.0025	0.0372 (0.0008)	0.1749 (0.0012)	0.0430 (0.0064)	0.0320 (0.0004)	1000
Weibull	-0.4842	0.0026	0.0506 (0.0011)	0.0158 (0.0016)	0.9440 (0.0073)	0.0028 (0.0001)	1000
Gompertz	-0.3290	0.0027	0.0377 (0.0025)	0.1710 (0.0035)	0.0702 (0.0239)	0.0307 (0.0012)	114
RP (3)	-0.4896	0.0027	0.0538 (0.0017)	0.0104 (0.0023)	0.9506 (0.0095)	0.0030 (0.0003)	526
RP (5)	-0.4978	0.0027	0.0530 (0.0013)	0.0022 (0.0019)	0.9459 (0.0079)	0.0028 (0.0001)	814
RP (9)	-0.4989	0.0027	0.0524 (0.0012)	0.0011 (0.0017)	0.9436 (0.0075)	0.0027 (0.0001)	939
RP (P)	-0.4953	0.0026	0.0518 (0.0012)	0.0047 (0.0017)	0.9485 (0.0071)	0.0027 (0.0001)	970
FP (W)	-0.4842	0.0026	0.0506 (0.0011)	0.0158 (0.0016)	0.9440 (0.0073)	0.0028 (0.0001)	1000
FP (k=10)	-0.4954	0.0026	0.0558 (0.0012)	0.0046 (0.0018)	0.9250 (0.0083)	0.0031 (0.0001)	1000
FP (k=10000)	-0.4969	0.0027	0.0457 (0.0122)	0.0031 (0.0161)	1.0000 (0.0000)	0.0018 (0.0006)	8
Model frailty: Normal							
Cox	-0.4827	0.0026	0.0587 (0.0013)	0.0173 (0.0019)	0.8960 (0.0098)	0.0037 (0.0002)	971
Exp	-0.3253	0.0026	0.0372 (0.0008)	0.1747 (0.0012)	0.0433 (0.0065)	0.0319 (0.0004)	970
Weibull	-0.4839	0.0027	0.0512 (0.0013)	0.0161 (0.0018)	0.9397 (0.0083)	0.0029 (0.0001)	813
Gompertz	-0.3348	0.0029	0.0418 (0.0032)	0.1652 (0.0045)	0.0920 (0.0310)	0.0290 (0.0015)	87
RP (3)	-0.4714	0.0027	0.0984 (0.0029)	0.0286 (0.0040)	0.9007 (0.0123)	0.0105 (0.0014)	594
RP (5)	-0.4802	0.0027	0.0974 (0.0023)	0.0198 (0.0033)	0.9016 (0.0100)	0.0099 (0.0011)	894
RP (9)	-0.4927	0.0027	0.0721 (0.0016)	0.0073 (0.0023)	0.9242 (0.0084)	0.0052 (0.0006)	990
RP (P)	-0.4955	0.0026	0.0531 (0.0012)	0.0045 (0.0017)	0.9480 (0.0070)	0.0028 (0.0002)	1000
FP (W)	-0.4683	0.0026	0.0523 (0.0018)	0.0317 (0.0026)	0.8933 (0.0154)	0.0037 (0.0002)	403
FP (k=10)	-0.4647	0.0025	0.0583 (0.0014)	0.0353 (0.0020)	0.8534 (0.0122)	0.0046 (0.0002)	839
FP (k=10000)	-0.4961	0.0020	0.0589 (0.0017)	0.0039 (0.0024)	0.8777 (0.0134)	0.0035 (0.0002)	597

Table 90: Simulation results for treatment effect, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	-0.4971	0.0028	0.0562 (0.0013)	0.0029 (0.0018)	0.9419 (0.0074)	0.0032 (0.0002)	998
Exp	-0.5686	0.0027	0.0646 (0.0014)	-0.0686 (0.0020)	0.6940 (0.0146)	0.0089 (0.0003)	1000
Weibull	-0.5158	0.0028	0.0590 (0.0013)	-0.0158 (0.0019)	0.9170 (0.0087)	0.0037 (0.0002)	1000
Gompertz	-0.5666	0.0029	0.0618 (0.0109)	-0.0666 (0.0150)	0.7059 (0.1105)	0.0080 (0.0016)	17
RP (3)	-0.5009	0.0028	0.0572 (0.0013)	-0.0009 (0.0018)	0.9340 (0.0080)	0.0033 (0.0002)	969
RP (5)	-0.5014	0.0028	0.0573 (0.0014)	-0.0014 (0.0020)	0.9321 (0.0088)	0.0033 (0.0002)	810
RP (9)	-0.5009	0.0030	0.0580 (0.0026)	-0.0009 (0.0037)	0.9300 (0.0164)	0.0033 (0.0003)	243
RP (P)	-0.5060	0.0028	0.0574 (0.0013)	-0.0060 (0.0018)	0.9237 (0.0085)	0.0033 (0.0002)	970
FP (W)	-0.5158	0.0028	0.0590 (0.0013)	-0.0158 (0.0019)	0.9170 (0.0087)	0.0037 (0.0002)	1000
FP (k=10)	-0.5594	0.0027	0.0641 (0.0014)	-0.0594 (0.0020)	0.7317 (0.0140)	0.0076 (0.0003)	999
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	-0.4806	0.0028	0.0634 (0.0015)	0.0194 (0.0021)	0.8996 (0.0097)	0.0044 (0.0002)	956
Exp	-0.5696	0.0027	0.0646 (0.0015)	-0.0696 (0.0022)	0.6841 (0.0157)	0.0090 (0.0004)	880
Weibull	-0.5165	0.0028	0.0590 (0.0014)	-0.0165 (0.0019)	0.9146 (0.0092)	0.0037 (0.0002)	925
Gompertz	-0.5261	0.0028	0.0716 (0.0358)	-0.0261 (0.0414)	0.6667 (0.2722)	0.0041 (0.0034)	3
RP (3)	-0.5012	0.0028	0.0568 (0.0014)	-0.0012 (0.0019)	0.9320 (0.0085)	0.0032 (0.0002)	883
RP (5)	-0.4725	0.0029	0.1181 (0.0029)	0.0275 (0.0041)	0.8619 (0.0120)	0.0147 (0.0015)	833
RP (9)	-0.3152	0.0029	0.2026 (0.0053)	0.1848 (0.0075)	0.4425 (0.0183)	0.0751 (0.0030)	739
RP (P)	-0.5052	0.0029	0.0570 (0.0014)	-0.0052 (0.0020)	0.9263 (0.0092)	0.0033 (0.0002)	801
FP (W)	-0.5026	0.0028	0.0599 (0.0018)	-0.0026 (0.0025)	0.9247 (0.0109)	0.0036 (0.0002)	584
FP (k=10)	-0.5433	0.0027	0.0639 (0.0016)	-0.0433 (0.0023)	0.7933 (0.0145)	0.0059 (0.0003)	779
FP (k=10000)	-0.5585	0.0024	0.0653 (0.0021)	-0.0585 (0.0030)	0.6998 (0.0213)	0.0077 (0.0005)	463

Results: loss in life expectancy, LLE

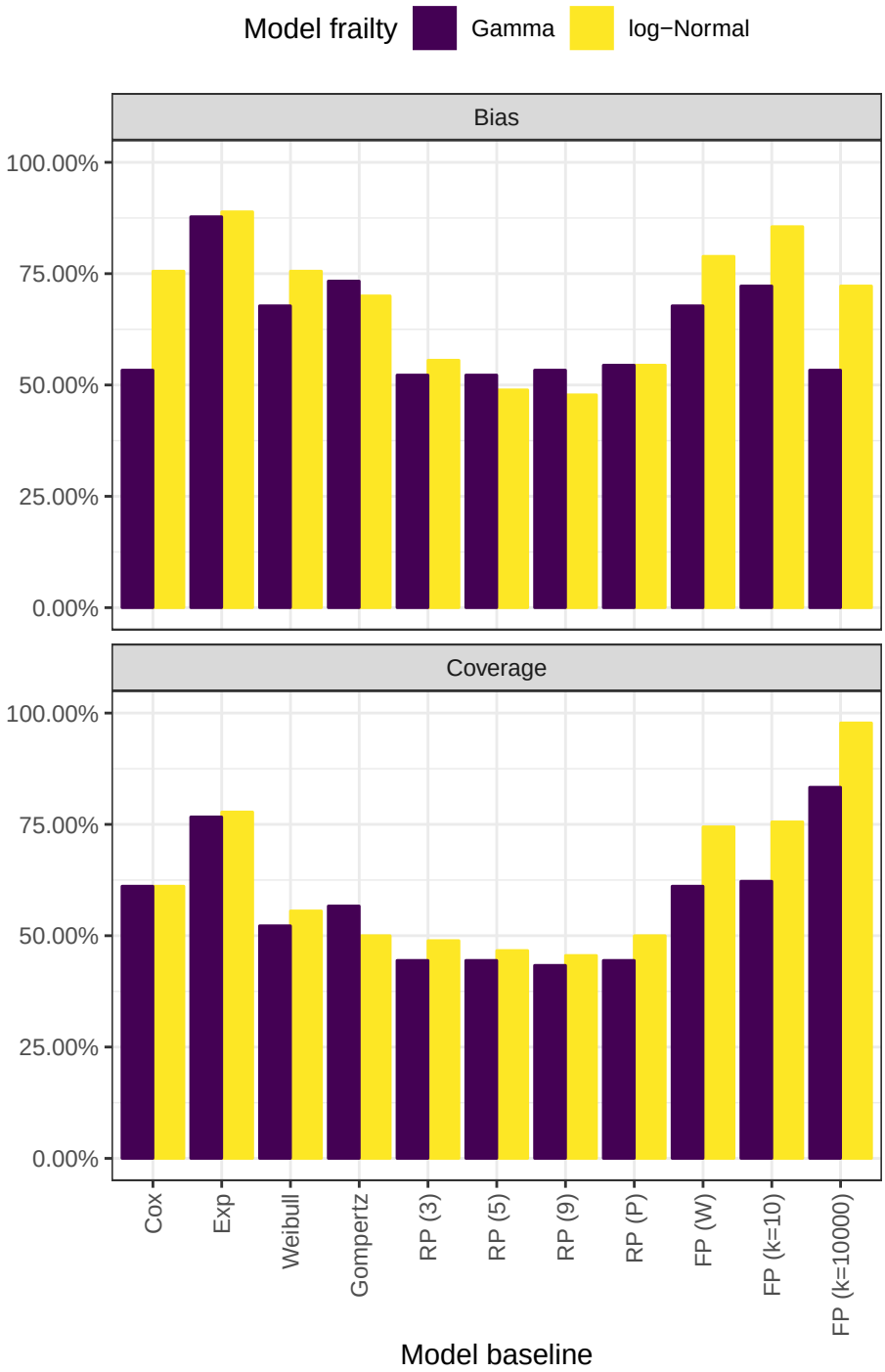

Figure 14: Percentage of simulated scenarios in which bias (top panel) or coverage (lower panel) for the estimated LLE was statistically different than the target value of 0 (for bias) or 95% (coverage), using Z tests based on Monte Carlo standard errors.

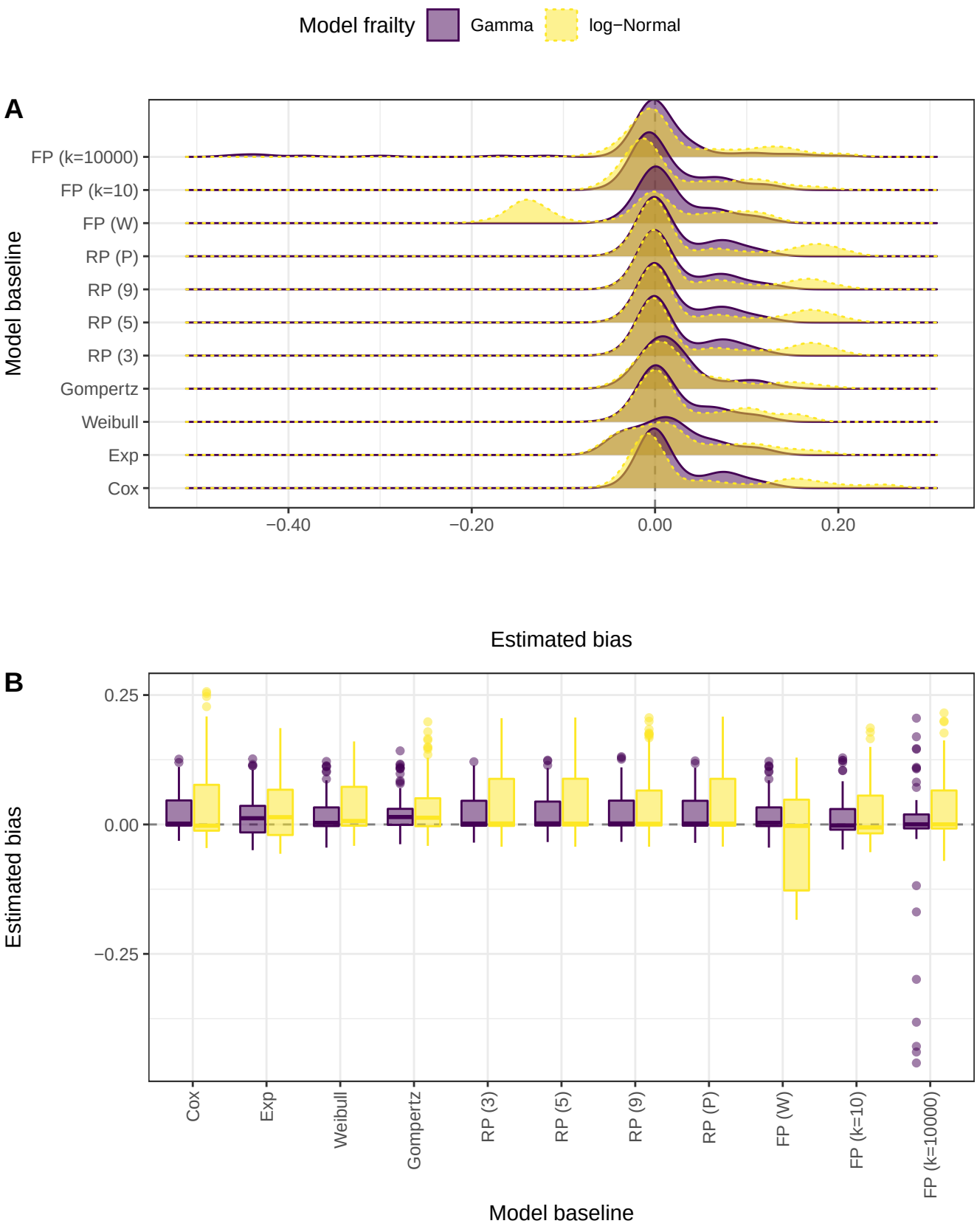

Figure 15: Bias distribution for the estimated LLE under each data-generating mechanisms by fitted model using ridgeline plots (panel A) or box plots (panel B).

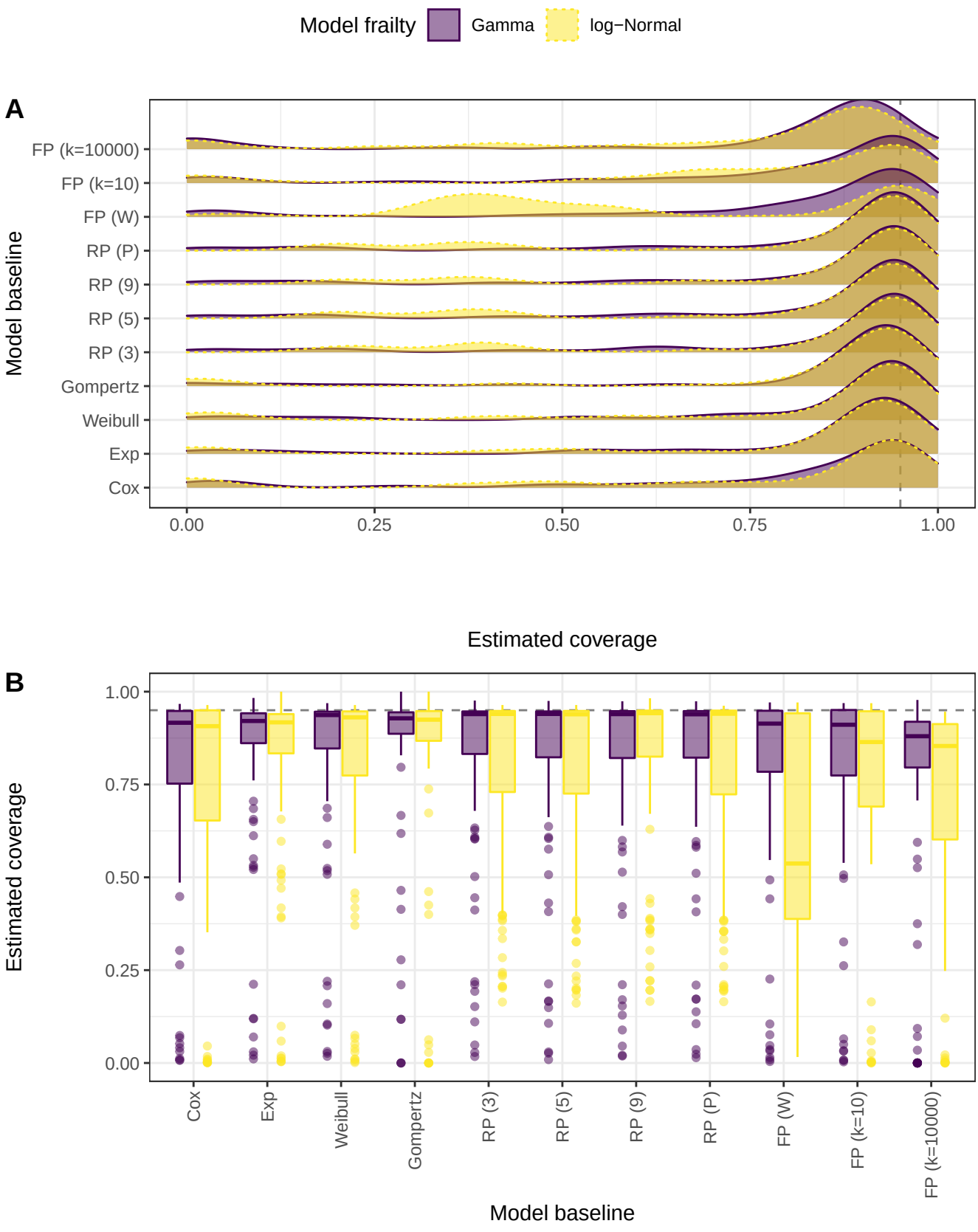

Figure 16: Coverage distribution for the estimated treatment effect under each data-generating mechanisms by fitted model using ridgeline plots (panel A) or box plots (panel B).

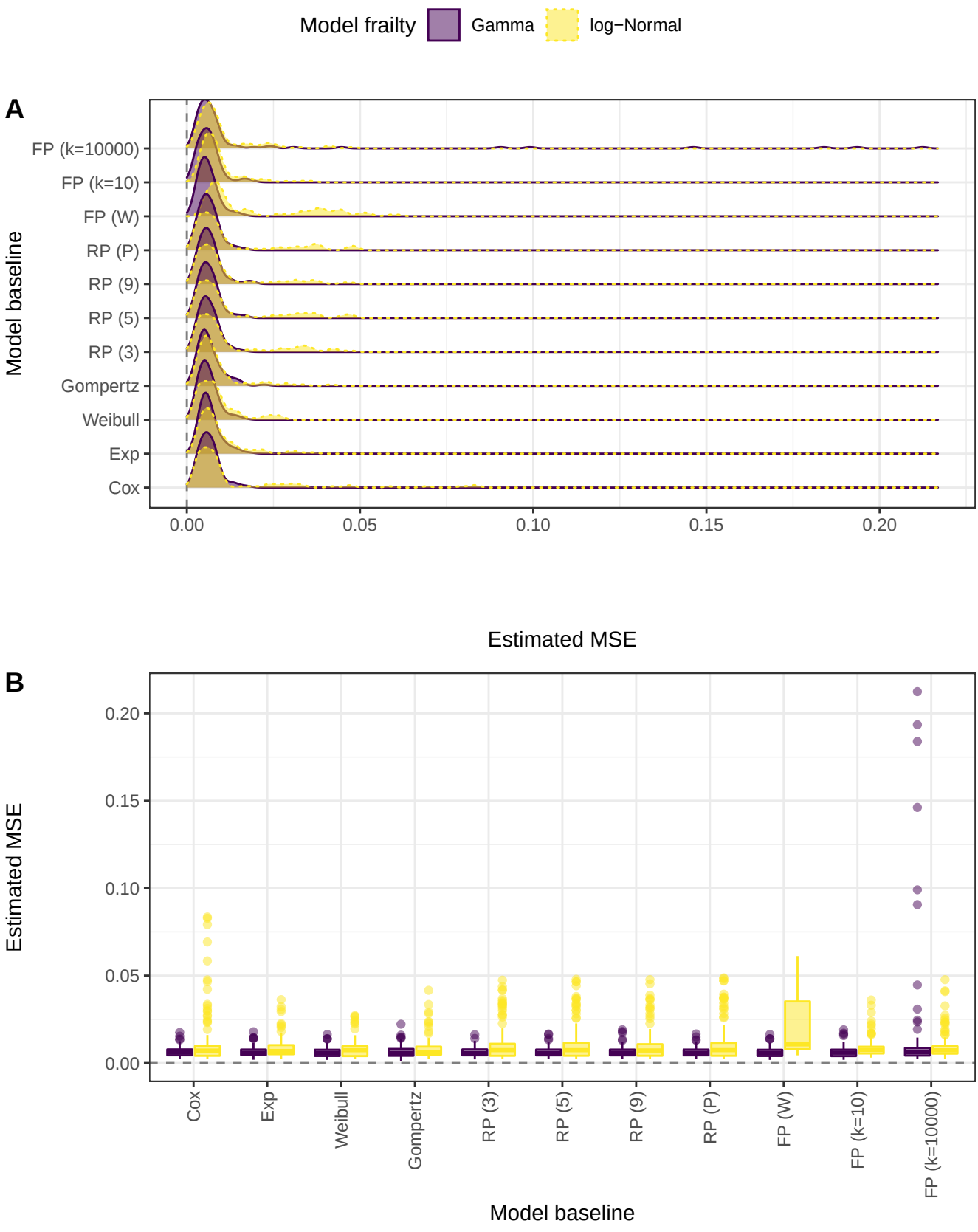

Figure 17: Mean squared error distribution for the estimated LLE under each data-generating mechanisms by fitted model using ridgeline plots (panel A) or box plots (panel B).

Table 91: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6736	0.0078	0.0876 (0.0020)	-0.0015 (0.0028)	0.9480 (0.0070)	0.0077 (0.0003)	1000
Exp	0.6739	0.0076	0.0874 (0.0020)	-0.0012 (0.0028)	0.9450 (0.0072)	0.0076 (0.0003)	1000
Weibull	0.6745	0.0076	0.0877 (0.0020)	-0.0006 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
Gompertz	0.6750	0.0077	0.0872 (0.0025)	-0.0001 (0.0036)	0.9467 (0.0092)	0.0076 (0.0004)	600
RP (3)	0.6743	0.0076	0.0877 (0.0020)	-0.0008 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
RP (5)	0.6741	0.0076	0.0877 (0.0020)	-0.0009 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
RP (9)	0.6742	0.0076	0.0877 (0.0020)	-0.0009 (0.0028)	0.9440 (0.0073)	0.0077 (0.0003)	1000
RP (P)	0.6743	0.0076	0.0877 (0.0020)	-0.0008 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
FP (W)	0.6747	0.0080	0.0877 (0.0020)	-0.0004 (0.0028)	0.9495 (0.0070)	0.0077 (0.0003)	990
FP (k=10)	0.6712	0.0081	0.0878 (0.0020)	-0.0039 (0.0028)	0.9509 (0.0068)	0.0077 (0.0003)	998
FP (k=10000)	0.6729	0.0063	0.0877 (0.0020)	-0.0022 (0.0028)	0.9220 (0.0085)	0.0077 (0.0003)	1000
Model frailty: Normal							
Cox	0.6656	0.0078	0.0868 (0.0019)	-0.0095 (0.0027)	0.9480 (0.0070)	0.0076 (0.0003)	1000
Exp	0.6702	0.0076	0.0873 (0.0020)	-0.0049 (0.0028)	0.9459 (0.0072)	0.0076 (0.0003)	999
Weibull	0.6723	0.0076	0.0878 (0.0020)	-0.0028 (0.0028)	0.9440 (0.0073)	0.0077 (0.0003)	1000
Gompertz	0.6706	0.0077	0.0877 (0.0027)	-0.0045 (0.0039)	0.9374 (0.0107)	0.0077 (0.0005)	511
RP (3)	0.6725	0.0076	0.0878 (0.0020)	-0.0026 (0.0028)	0.9420 (0.0074)	0.0077 (0.0003)	1000
RP (5)	0.6724	0.0076	0.0877 (0.0020)	-0.0027 (0.0028)	0.9420 (0.0074)	0.0077 (0.0003)	1000
RP (9)	0.6723	0.0076	0.0877 (0.0020)	-0.0028 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
RP (P)	0.6727	0.0076	0.0878 (0.0020)	-0.0024 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
FP (W)	0.6718	0.0079	0.0874 (0.0020)	-0.0033 (0.0028)	0.9502 (0.0069)	0.0076 (0.0003)	983
FP (k=10)	0.6693	0.0081	0.0878 (0.0020)	-0.0058 (0.0028)	0.9510 (0.0068)	0.0077 (0.0003)	1000
FP (k=10000)	0.6715	0.0065	0.0877 (0.0020)	-0.0036 (0.0028)	0.9230 (0.0084)	0.0077 (0.0003)	1000

Table 92: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7004	0.0084	0.0961 (0.0022)	0.0015 (0.0030)	0.9380 (0.0076)	0.0092 (0.0004)	1000
Exp	0.7334	0.0082	0.1009 (0.0023)	0.0345 (0.0032)	0.9020 (0.0094)	0.0114 (0.0005)	1000
Weibull	0.7019	0.0089	0.0962 (0.0022)	0.0030 (0.0030)	0.9440 (0.0073)	0.0092 (0.0004)	1000
Gompertz	0.7361	0.0083	0.1033 (0.0034)	0.0371 (0.0048)	0.8985 (0.0140)	0.0120 (0.0008)	463
RP (3)	0.7012	0.0090	0.0962 (0.0022)	0.0023 (0.0030)	0.9449 (0.0072)	0.0093 (0.0004)	999
RP (5)	0.7010	0.0090	0.0962 (0.0022)	0.0021 (0.0030)	0.9450 (0.0072)	0.0093 (0.0004)	1000
RP (9)	0.7010	0.0090	0.0962 (0.0022)	0.0021 (0.0030)	0.9440 (0.0073)	0.0092 (0.0004)	1000
RP (P)	0.7015	0.0090	0.0963 (0.0022)	0.0026 (0.0030)	0.9450 (0.0072)	0.0093 (0.0004)	1000
FP (W)	0.7017	0.0087	0.0961 (0.0022)	0.0028 (0.0031)	0.9425 (0.0074)	0.0092 (0.0004)	991
FP (k=10)	0.6925	0.0088	0.0966 (0.0022)	-0.0064 (0.0031)	0.9380 (0.0076)	0.0094 (0.0004)	1000
FP (k=10000)	0.7043	0.0071	0.0975 (0.0022)	0.0053 (0.0031)	0.9020 (0.0094)	0.0095 (0.0004)	1000
Model frailty: Normal							
Cox	0.7009	0.0087	0.0963 (0.0022)	0.0019 (0.0030)	0.9430 (0.0073)	0.0093 (0.0004)	1000
Exp	0.7250	0.0082	0.0998 (0.0022)	0.0260 (0.0032)	0.9108 (0.0090)	0.0106 (0.0005)	998
Weibull	0.6998	0.0089	0.0960 (0.0021)	0.0009 (0.0030)	0.9429 (0.0073)	0.0092 (0.0004)	999
Gompertz	0.7363	0.0083	0.1011 (0.0035)	0.0374 (0.0050)	0.8859 (0.0157)	0.0116 (0.0008)	412
RP (3)	0.6998	0.0090	0.0961 (0.0021)	0.0009 (0.0030)	0.9450 (0.0072)	0.0092 (0.0004)	1000
RP (5)	0.6997	0.0089	0.0960 (0.0021)	0.0008 (0.0030)	0.9440 (0.0073)	0.0092 (0.0004)	1000
RP (9)	0.6997	0.0089	0.0960 (0.0021)	0.0008 (0.0030)	0.9460 (0.0071)	0.0092 (0.0004)	1000
RP (P)	0.7002	0.0089	0.0961 (0.0021)	0.0013 (0.0030)	0.9450 (0.0072)	0.0092 (0.0004)	1000
FP (W)	0.7009	0.0087	0.0961 (0.0022)	0.0020 (0.0031)	0.9405 (0.0075)	0.0092 (0.0004)	991
FP (k=10)	0.6916	0.0088	0.0964 (0.0022)	-0.0073 (0.0030)	0.9390 (0.0076)	0.0093 (0.0004)	1000
FP (k=10000)	0.7030	0.0075	0.0973 (0.0022)	0.0040 (0.0031)	0.9130 (0.0089)	0.0095 (0.0004)	1000

Table 93: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6108	0.0065	0.0790 (0.0018)	-0.0017 (0.0025)	0.9539 (0.0066)	0.0062 (0.0003)	997
Exp	0.5704	0.0062	0.0757 (0.0017)	-0.0420 (0.0024)	0.9286 (0.0082)	0.0075 (0.0004)	995
Weibull	0.5914	0.0059	0.0769 (0.0017)	-0.0211 (0.0024)	0.9470 (0.0071)	0.0063 (0.0003)	1000
Gompertz	0.6111	0.0058	0.0790 (0.0018)	-0.0014 (0.0025)	0.9450 (0.0072)	0.0062 (0.0003)	1000
RP (3)	0.6091	0.0058	0.0787 (0.0018)	-0.0034 (0.0025)	0.9470 (0.0071)	0.0062 (0.0003)	1000
RP (5)	0.6104	0.0058	0.0790 (0.0018)	-0.0021 (0.0025)	0.9440 (0.0073)	0.0062 (0.0003)	1000
RP (9)	0.6109	0.0058	0.0791 (0.0018)	-0.0016 (0.0025)	0.9450 (0.0072)	0.0063 (0.0003)	1000
RP (P)	0.6059	0.0058	0.0786 (0.0018)	-0.0066 (0.0025)	0.9480 (0.0070)	0.0062 (0.0003)	1000
FP (W)	0.5914	0.0068	0.0769 (0.0017)	-0.0211 (0.0024)	0.9620 (0.0060)	0.0063 (0.0003)	1000
FP (k=10)	0.6085	0.0068	0.0791 (0.0018)	-0.0040 (0.0025)	0.9570 (0.0064)	0.0063 (0.0003)	1000
FP (k=10000)	0.6056	0.0050	0.0784 (0.0018)	-0.0069 (0.0025)	0.9260 (0.0083)	0.0062 (0.0003)	1000
Model frailty: Normal							
Cox	0.5940	0.0063	0.0774 (0.0017)	-0.0185 (0.0024)	0.9560 (0.0065)	0.0063 (0.0003)	1000
Exp	0.5698	0.0063	0.0756 (0.0018)	-0.0426 (0.0026)	0.9282 (0.0087)	0.0075 (0.0004)	877
Weibull	0.5909	0.0059	0.0768 (0.0017)	-0.0216 (0.0024)	0.9449 (0.0072)	0.0064 (0.0003)	998
Gompertz	0.6099	0.0058	0.0790 (0.0018)	-0.0025 (0.0025)	0.9460 (0.0071)	0.0062 (0.0003)	1000
RP (3)	0.6074	0.0058	0.0787 (0.0018)	-0.0050 (0.0025)	0.9500 (0.0069)	0.0062 (0.0003)	1000
RP (5)	0.6085	0.0058	0.0789 (0.0018)	-0.0040 (0.0025)	0.9480 (0.0070)	0.0062 (0.0003)	1000
RP (9)	0.6089	0.0058	0.0790 (0.0018)	-0.0035 (0.0025)	0.9470 (0.0071)	0.0062 (0.0003)	1000
RP (P)	0.6043	0.0058	0.0785 (0.0018)	-0.0082 (0.0025)	0.9490 (0.0070)	0.0062 (0.0003)	1000
FP (W)	0.5909	0.0068	0.0769 (0.0017)	-0.0216 (0.0024)	0.9610 (0.0061)	0.0064 (0.0003)	1000
FP (k=10)	0.6066	0.0068	0.0790 (0.0018)	-0.0058 (0.0025)	0.9590 (0.0063)	0.0063 (0.0003)	1000
FP (k=10000)	0.6049	0.0049	0.0785 (0.0018)	-0.0076 (0.0025)	0.9200 (0.0086)	0.0062 (0.0003)	1000

Table 94: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5864	0.0061	0.0716 (0.0016)	-0.0023 (0.0023)	0.9669 (0.0057)	0.0051 (0.0002)	998
Exp	0.5504	0.0065	0.0656 (0.0019)	-0.0383 (0.0027)	0.9685 (0.0073)	0.0058 (0.0003)	572
Weibull	0.6014	0.0053	0.0746 (0.0017)	0.0127 (0.0024)	0.9410 (0.0075)	0.0057 (0.0003)	1000
Gompertz	0.6039	0.0059	0.0748 (0.0017)	0.0152 (0.0024)	0.9510 (0.0068)	0.0058 (0.0003)	1000
RP (3)	0.5842	0.0054	0.0714 (0.0016)	-0.0045 (0.0023)	0.9510 (0.0068)	0.0051 (0.0002)	1000
RP (5)	0.5863	0.0055	0.0717 (0.0016)	-0.0024 (0.0023)	0.9510 (0.0068)	0.0051 (0.0002)	1000
RP (9)	0.5865	0.0055	0.0718 (0.0016)	-0.0022 (0.0023)	0.9520 (0.0068)	0.0051 (0.0002)	1000
RP (P)	0.5871	0.0054	0.0718 (0.0016)	-0.0016 (0.0023)	0.9510 (0.0068)	0.0052 (0.0002)	1000
FP (W)	0.6014	0.0060	0.0746 (0.0017)	0.0127 (0.0024)	0.9550 (0.0066)	0.0057 (0.0003)	1000
FP (k=10)	0.5733	0.0063	0.0717 (0.0016)	-0.0154 (0.0023)	0.9620 (0.0060)	0.0054 (0.0002)	1000
FP (k=10000)	0.6081	0.0041	0.0774 (0.0017)	0.0194 (0.0024)	0.8780 (0.0103)	0.0064 (0.0003)	1000
Model frailty: Normal							
Cox	0.5709	0.0059	0.0700 (0.0016)	-0.0178 (0.0022)	0.9590 (0.0063)	0.0052 (0.0002)	1000
Exp	0.5380	0.0067	0.0781 (0.0050)	-0.0508 (0.0070)	0.9194 (0.0245)	0.0086 (0.0012)	124
Weibull	0.5998	0.0053	0.0741 (0.0017)	0.0111 (0.0023)	0.9369 (0.0077)	0.0056 (0.0003)	999
Gompertz	0.6014	0.0059	0.0744 (0.0017)	0.0126 (0.0024)	0.9489 (0.0070)	0.0057 (0.0003)	999
RP (3)	0.5826	0.0054	0.0712 (0.0016)	-0.0061 (0.0023)	0.9540 (0.0066)	0.0051 (0.0002)	1000
RP (5)	0.5848	0.0055	0.0716 (0.0016)	-0.0040 (0.0023)	0.9520 (0.0068)	0.0051 (0.0002)	1000
RP (9)	0.5850	0.0055	0.0716 (0.0016)	-0.0038 (0.0023)	0.9510 (0.0068)	0.0051 (0.0002)	1000
RP (P)	0.5855	0.0054	0.0716 (0.0016)	-0.0032 (0.0023)	0.9520 (0.0068)	0.0051 (0.0002)	1000
FP (W)	0.5994	0.0060	0.0744 (0.0017)	0.0107 (0.0024)	0.9589 (0.0064)	0.0056 (0.0003)	973
FP (k=10)	0.5736	0.0063	0.0715 (0.0016)	-0.0152 (0.0023)	0.9610 (0.0061)	0.0053 (0.0002)	1000
FP (k=10000)	0.6053	0.0039	0.0768 (0.0017)	0.0166 (0.0024)	0.8730 (0.0105)	0.0062 (0.0003)	1000

Table 95: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6881	0.0082	0.0962 (0.0022)	0.0017 (0.0030)	0.9300 (0.0081)	0.0092 (0.0004)	1000
Exp	0.7064	0.0079	0.0984 (0.0022)	0.0200 (0.0031)	0.9180 (0.0087)	0.0101 (0.0005)	1000
Weibull	0.6958	0.0082	0.0971 (0.0022)	0.0094 (0.0031)	0.9270 (0.0082)	0.0095 (0.0004)	1000
Gompertz	0.7071	0.0080	0.0997 (0.0032)	0.0207 (0.0045)	0.9182 (0.0124)	0.0103 (0.0007)	489
RP (3)	0.6903	0.0082	0.0964 (0.0022)	0.0039 (0.0030)	0.9310 (0.0080)	0.0093 (0.0004)	1000
RP (5)	0.6891	0.0082	0.0963 (0.0022)	0.0027 (0.0030)	0.9320 (0.0080)	0.0093 (0.0004)	1000
RP (9)	0.6887	0.0082	0.0963 (0.0022)	0.0023 (0.0030)	0.9290 (0.0081)	0.0093 (0.0004)	1000
RP (P)	0.6905	0.0082	0.0965 (0.0022)	0.0042 (0.0031)	0.9300 (0.0081)	0.0093 (0.0004)	1000
FP (W)	0.6947	0.0084	0.0969 (0.0022)	0.0083 (0.0031)	0.9336 (0.0080)	0.0095 (0.0004)	979
FP (k=10)	0.6843	0.0085	0.0964 (0.0022)	-0.0021 (0.0030)	0.9350 (0.0078)	0.0093 (0.0004)	1000
FP (k=10000)	0.6866	0.0069	0.0961 (0.0022)	0.0002 (0.0030)	0.9130 (0.0089)	0.0092 (0.0004)	1000
Model frailty: Normal							
Cox	0.6821	0.0083	0.0955 (0.0021)	-0.0043 (0.0030)	0.9340 (0.0079)	0.0091 (0.0004)	1000
Exp	0.7016	0.0079	0.0977 (0.0022)	0.0152 (0.0031)	0.9178 (0.0087)	0.0098 (0.0005)	998
Weibull	0.6931	0.0082	0.0966 (0.0022)	0.0067 (0.0031)	0.9280 (0.0082)	0.0094 (0.0004)	1000
Gompertz	0.6986	0.0080	0.0960 (0.0034)	0.0122 (0.0048)	0.9240 (0.0131)	0.0093 (0.0006)	408
RP (3)	0.6890	0.0082	0.0962 (0.0022)	0.0027 (0.0030)	0.9330 (0.0079)	0.0092 (0.0004)	1000
RP (5)	0.6878	0.0082	0.0960 (0.0021)	0.0014 (0.0030)	0.9330 (0.0079)	0.0092 (0.0004)	1000
RP (9)	0.6874	0.0082	0.0960 (0.0021)	0.0011 (0.0030)	0.9320 (0.0080)	0.0092 (0.0004)	1000
RP (P)	0.6891	0.0082	0.0962 (0.0022)	0.0027 (0.0030)	0.9330 (0.0079)	0.0093 (0.0004)	1000
FP (W)	0.6933	0.0083	0.0965 (0.0022)	0.0069 (0.0031)	0.9347 (0.0078)	0.0093 (0.0004)	995
FP (k=10)	0.6829	0.0085	0.0962 (0.0022)	-0.0035 (0.0030)	0.9400 (0.0075)	0.0093 (0.0004)	1000
FP (k=10000)	0.6855	0.0071	0.0959 (0.0021)	-0.0009 (0.0030)	0.9160 (0.0088)	0.0092 (0.0004)	1000

Table 96: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6785	0.0077	0.0853 (0.0019)	0.0021 (0.0027)	0.9570 (0.0064)	0.0073 (0.0003)	1000
Exp	0.6798	0.0073	0.0855 (0.0019)	0.0034 (0.0027)	0.9450 (0.0072)	0.0073 (0.0003)	1000
Weibull	0.6792	0.0073	0.0853 (0.0019)	0.0027 (0.0027)	0.9480 (0.0070)	0.0073 (0.0003)	1000
Gompertz	0.6828	0.0073	0.0870 (0.0025)	0.0063 (0.0036)	0.9427 (0.0095)	0.0076 (0.0005)	593
RP (3)	0.6790	0.0074	0.0854 (0.0019)	0.0026 (0.0027)	0.9500 (0.0069)	0.0073 (0.0003)	1000
RP (5)	0.6790	0.0074	0.0854 (0.0019)	0.0026 (0.0027)	0.9500 (0.0069)	0.0073 (0.0003)	1000
RP (9)	0.6790	0.0074	0.0854 (0.0019)	0.0026 (0.0027)	0.9500 (0.0069)	0.0073 (0.0003)	1000
RP (P)	0.6791	0.0074	0.0854 (0.0019)	0.0027 (0.0027)	0.9490 (0.0070)	0.0073 (0.0003)	1000
FP (W)	0.6792	0.0079	0.0853 (0.0019)	0.0027 (0.0027)	0.9590 (0.0063)	0.0073 (0.0003)	1000
FP (k=10)	0.6763	0.0081	0.0855 (0.0019)	-0.0001 (0.0027)	0.9620 (0.0060)	0.0073 (0.0003)	1000
FP (k=10000)	0.6776	0.0062	0.0853 (0.0019)	0.0011 (0.0027)	0.9280 (0.0082)	0.0073 (0.0003)	1000
Model frailty: Normal							
Cox	0.6683	0.0077	0.0842 (0.0019)	-0.0081 (0.0027)	0.9580 (0.0063)	0.0071 (0.0003)	1000
Exp	0.6765	0.0073	0.0851 (0.0019)	0.0001 (0.0027)	0.9510 (0.0068)	0.0072 (0.0003)	999
Weibull	0.6773	0.0073	0.0850 (0.0019)	0.0009 (0.0027)	0.9497 (0.0069)	0.0072 (0.0003)	995
Gompertz	0.6770	0.0074	0.0875 (0.0027)	0.0006 (0.0037)	0.9486 (0.0095)	0.0076 (0.0005)	545
RP (3)	0.6780	0.0074	0.0853 (0.0019)	0.0016 (0.0027)	0.9520 (0.0068)	0.0073 (0.0003)	1000
RP (5)	0.6779	0.0074	0.0853 (0.0019)	0.0015 (0.0027)	0.9520 (0.0068)	0.0073 (0.0003)	1000
RP (9)	0.6779	0.0074	0.0853 (0.0019)	0.0015 (0.0027)	0.9520 (0.0068)	0.0073 (0.0003)	1000
RP (P)	0.6781	0.0073	0.0853 (0.0019)	0.0017 (0.0027)	0.9490 (0.0070)	0.0073 (0.0003)	1000
FP (W)	0.6781	0.0079	0.0852 (0.0019)	0.0017 (0.0027)	0.9598 (0.0062)	0.0072 (0.0003)	995
FP (k=10)	0.6752	0.0081	0.0853 (0.0019)	-0.0013 (0.0027)	0.9630 (0.0060)	0.0073 (0.0003)	1000
FP (k=10000)	0.6770	0.0063	0.0852 (0.0019)	0.0005 (0.0027)	0.9300 (0.0081)	0.0073 (0.0003)	1000

Table 97: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7082	0.0086	0.0930 (0.0021)	-0.0022 (0.0029)	0.9520 (0.0068)	0.0086 (0.0004)	999
Exp	0.7421	0.0081	0.0979 (0.0022)	0.0316 (0.0031)	0.9120 (0.0090)	0.0106 (0.0005)	1000
Weibull	0.7095	0.0088	0.0933 (0.0021)	-0.0009 (0.0030)	0.9540 (0.0066)	0.0087 (0.0004)	1000
Gompertz	0.7398	0.0081	0.0985 (0.0032)	0.0294 (0.0045)	0.9110 (0.0130)	0.0105 (0.0007)	483
RP (3)	0.7088	0.0088	0.0931 (0.0021)	-0.0016 (0.0029)	0.9550 (0.0066)	0.0087 (0.0004)	1000
RP (5)	0.7087	0.0088	0.0931 (0.0021)	-0.0017 (0.0029)	0.9540 (0.0066)	0.0087 (0.0004)	999
RP (9)	0.7087	0.0088	0.0932 (0.0021)	-0.0018 (0.0029)	0.9539 (0.0066)	0.0087 (0.0004)	998
RP (P)	0.7091	0.0088	0.0932 (0.0021)	-0.0013 (0.0029)	0.9550 (0.0066)	0.0087 (0.0004)	1000
FP (W)	0.7101	0.0088	0.0934 (0.0021)	-0.0003 (0.0030)	0.9543 (0.0067)	0.0087 (0.0004)	985
FP (k=10)	0.7002	0.0090	0.0935 (0.0021)	-0.0103 (0.0030)	0.9540 (0.0066)	0.0088 (0.0004)	1000
FP (k=10000)	0.7122	0.0071	0.0941 (0.0021)	0.0018 (0.0030)	0.9210 (0.0085)	0.0088 (0.0004)	1000
Model frailty: Normal							
Cox	0.7049	0.0088	0.0927 (0.0021)	-0.0055 (0.0029)	0.9550 (0.0066)	0.0086 (0.0004)	1000
Exp	0.7338	0.0081	0.0969 (0.0022)	0.0234 (0.0031)	0.9225 (0.0085)	0.0099 (0.0004)	994
Weibull	0.7075	0.0087	0.0930 (0.0021)	-0.0029 (0.0029)	0.9570 (0.0064)	0.0086 (0.0004)	1000
Gompertz	0.7281	0.0081	0.0971 (0.0032)	0.0177 (0.0046)	0.9222 (0.0126)	0.0097 (0.0007)	450
RP (3)	0.7077	0.0088	0.0929 (0.0021)	-0.0028 (0.0029)	0.9540 (0.0066)	0.0086 (0.0004)	1000
RP (5)	0.7075	0.0088	0.0929 (0.0021)	-0.0029 (0.0029)	0.9540 (0.0066)	0.0086 (0.0004)	1000
RP (9)	0.7075	0.0088	0.0929 (0.0021)	-0.0029 (0.0029)	0.9540 (0.0066)	0.0086 (0.0004)	1000
RP (P)	0.7080	0.0088	0.0930 (0.0021)	-0.0024 (0.0029)	0.9570 (0.0064)	0.0086 (0.0004)	1000
FP (W)	0.7078	0.0088	0.0931 (0.0021)	-0.0026 (0.0030)	0.9552 (0.0066)	0.0087 (0.0004)	983
FP (k=10)	0.6995	0.0089	0.0933 (0.0021)	-0.0109 (0.0030)	0.9550 (0.0066)	0.0088 (0.0004)	1000
FP (k=10000)	0.7109	0.0074	0.0939 (0.0021)	0.0005 (0.0030)	0.9280 (0.0082)	0.0088 (0.0004)	1000

Table 98: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6018	0.0062	0.0758 (0.0017)	0.0003 (0.0024)	0.9559 (0.0065)	0.0057 (0.0003)	997
Exp	0.5630	0.0058	0.0725 (0.0017)	-0.0384 (0.0024)	0.9257 (0.0086)	0.0067 (0.0003)	929
Weibull	0.5810	0.0055	0.0733 (0.0016)	-0.0204 (0.0023)	0.9420 (0.0074)	0.0058 (0.0003)	1000
Gompertz	0.6015	0.0054	0.0756 (0.0017)	0.0000 (0.0024)	0.9400 (0.0075)	0.0057 (0.0003)	1000
RP (3)	0.5995	0.0054	0.0754 (0.0017)	-0.0020 (0.0024)	0.9400 (0.0075)	0.0057 (0.0003)	1000
RP (5)	0.6013	0.0054	0.0756 (0.0017)	-0.0002 (0.0024)	0.9430 (0.0073)	0.0057 (0.0003)	1000
RP (9)	0.6019	0.0054	0.0757 (0.0017)	0.0005 (0.0024)	0.9410 (0.0075)	0.0057 (0.0003)	1000
RP (P)	0.5967	0.0054	0.0750 (0.0017)	-0.0047 (0.0024)	0.9420 (0.0074)	0.0056 (0.0002)	1000
FP (W)	0.5810	0.0065	0.0733 (0.0016)	-0.0204 (0.0023)	0.9560 (0.0065)	0.0058 (0.0003)	999
FP (k=10)	0.5996	0.0065	0.0756 (0.0017)	-0.0019 (0.0024)	0.9650 (0.0058)	0.0057 (0.0003)	1000
FP (k=10000)	0.5955	0.0047	0.0750 (0.0017)	-0.0060 (0.0024)	0.9190 (0.0086)	0.0057 (0.0003)	1000
Model frailty: Normal							
Cox	0.5851	0.0060	0.0737 (0.0016)	-0.0163 (0.0023)	0.9530 (0.0067)	0.0057 (0.0003)	1000
Exp	0.5641	0.0058	0.0727 (0.0020)	-0.0374 (0.0028)	0.9308 (0.0097)	0.0067 (0.0003)	679
Weibull	0.5810	0.0055	0.0731 (0.0016)	-0.0204 (0.0023)	0.9430 (0.0073)	0.0058 (0.0003)	1000
Gompertz	0.6014	0.0054	0.0755 (0.0017)	-0.0001 (0.0024)	0.9410 (0.0075)	0.0057 (0.0003)	1000
RP (3)	0.5986	0.0054	0.0752 (0.0017)	-0.0028 (0.0024)	0.9400 (0.0075)	0.0057 (0.0003)	1000
RP (5)	0.6002	0.0054	0.0754 (0.0017)	-0.0012 (0.0024)	0.9400 (0.0075)	0.0057 (0.0003)	1000
RP (9)	0.6008	0.0054	0.0755 (0.0017)	-0.0006 (0.0024)	0.9390 (0.0076)	0.0057 (0.0003)	1000
RP (P)	0.5958	0.0054	0.0749 (0.0017)	-0.0056 (0.0024)	0.9430 (0.0073)	0.0056 (0.0002)	1000
FP (W)	0.5809	0.0065	0.0732 (0.0016)	-0.0206 (0.0023)	0.9600 (0.0062)	0.0058 (0.0003)	1000
FP (k=10)	0.5987	0.0065	0.0755 (0.0017)	-0.0028 (0.0024)	0.9630 (0.0060)	0.0057 (0.0003)	1000
FP (k=10000)	0.5954	0.0046	0.0749 (0.0017)	-0.0061 (0.0024)	0.9140 (0.0089)	0.0056 (0.0003)	1000

Table 99: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5786	0.0058	0.0722 (0.0016)	-0.0004 (0.0023)	0.9520 (0.0068)	0.0052 (0.0002)	999
Exp	0.5428	0.0062	0.0702 (0.0022)	-0.0362 (0.0031)	0.9465 (0.0098)	0.0062 (0.0004)	523
Weibull	0.5933	0.0049	0.0742 (0.0017)	0.0143 (0.0023)	0.9240 (0.0084)	0.0057 (0.0003)	1000
Gompertz	0.5991	0.0055	0.0751 (0.0017)	0.0201 (0.0024)	0.9360 (0.0077)	0.0060 (0.0003)	1000
RP (3)	0.5757	0.0050	0.0718 (0.0016)	-0.0033 (0.0023)	0.9380 (0.0076)	0.0052 (0.0002)	1000
RP (5)	0.5783	0.0051	0.0721 (0.0016)	-0.0007 (0.0023)	0.9370 (0.0077)	0.0052 (0.0002)	1000
RP (9)	0.5788	0.0051	0.0721 (0.0016)	-0.0002 (0.0023)	0.9360 (0.0077)	0.0052 (0.0002)	1000
RP (P)	0.5792	0.0051	0.0722 (0.0016)	0.0002 (0.0023)	0.9390 (0.0076)	0.0052 (0.0002)	1000
FP (W)	0.5930	0.0058	0.0740 (0.0017)	0.0141 (0.0023)	0.9469 (0.0071)	0.0057 (0.0003)	998
FP (k=10)	0.5645	0.0061	0.0725 (0.0016)	-0.0145 (0.0023)	0.9530 (0.0067)	0.0055 (0.0003)	1000
FP (k=10000)	0.5986	0.0039	0.0767 (0.0017)	0.0196 (0.0024)	0.8760 (0.0104)	0.0063 (0.0003)	1000
Model frailty: Normal							
Cox	0.5631	0.0056	0.0704 (0.0016)	-0.0158 (0.0022)	0.9510 (0.0068)	0.0052 (0.0002)	1000
Exp	0.5224	0.0064	0.0206 (0.0084)	-0.0566 (0.0103)	1.0000 (0.0000)	0.0035 (0.0013)	4
Weibull	0.5931	0.0049	0.0741 (0.0017)	0.0142 (0.0023)	0.9307 (0.0080)	0.0057 (0.0003)	996
Gompertz	0.5982	0.0055	0.0751 (0.0017)	0.0192 (0.0024)	0.9390 (0.0076)	0.0060 (0.0003)	1000
RP (3)	0.5750	0.0050	0.0718 (0.0016)	-0.0040 (0.0023)	0.9370 (0.0077)	0.0052 (0.0002)	1000
RP (5)	0.5776	0.0051	0.0721 (0.0016)	-0.0013 (0.0023)	0.9360 (0.0077)	0.0052 (0.0002)	1000
RP (9)	0.5781	0.0051	0.0721 (0.0016)	-0.0009 (0.0023)	0.9350 (0.0078)	0.0052 (0.0002)	1000
RP (P)	0.5786	0.0051	0.0722 (0.0016)	-0.0004 (0.0023)	0.9340 (0.0079)	0.0052 (0.0002)	1000
FP (W)	0.5938	0.0057	0.0744 (0.0017)	0.0148 (0.0024)	0.9422 (0.0075)	0.0057 (0.0003)	969
FP (k=10)	0.5657	0.0061	0.0724 (0.0016)	-0.0133 (0.0023)	0.9550 (0.0066)	0.0054 (0.0003)	1000
FP (k=10000)	0.5993	0.0036	0.0765 (0.0017)	0.0203 (0.0024)	0.8670 (0.0107)	0.0063 (0.0003)	1000

Table 100: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6918	0.0082	0.0860 (0.0019)	0.0019 (0.0027)	0.9630 (0.0060)	0.0074 (0.0003)	1000
Exp	0.7112	0.0077	0.0886 (0.0020)	0.0212 (0.0028)	0.9380 (0.0076)	0.0083 (0.0004)	1000
Weibull	0.7004	0.0080	0.0870 (0.0019)	0.0104 (0.0028)	0.9540 (0.0066)	0.0077 (0.0003)	1000
Gompertz	0.7148	0.0077	0.0898 (0.0029)	0.0248 (0.0042)	0.9316 (0.0117)	0.0087 (0.0006)	468
RP (3)	0.6947	0.0080	0.0863 (0.0019)	0.0048 (0.0027)	0.9590 (0.0063)	0.0075 (0.0003)	1000
RP (5)	0.6930	0.0079	0.0861 (0.0019)	0.0030 (0.0027)	0.9600 (0.0062)	0.0074 (0.0003)	1000
RP (9)	0.6926	0.0079	0.0861 (0.0019)	0.0026 (0.0027)	0.9599 (0.0062)	0.0074 (0.0003)	998
RP (P)	0.6946	0.0080	0.0863 (0.0019)	0.0047 (0.0027)	0.9590 (0.0063)	0.0075 (0.0003)	1000
FP (W)	0.7003	0.0084	0.0870 (0.0020)	0.0104 (0.0028)	0.9607 (0.0062)	0.0077 (0.0003)	992
FP (k=10)	0.6883	0.0085	0.0860 (0.0019)	-0.0016 (0.0027)	0.9660 (0.0057)	0.0074 (0.0003)	1000
FP (k=10000)	0.6910	0.0068	0.0860 (0.0019)	0.0011 (0.0027)	0.9419 (0.0074)	0.0074 (0.0003)	999
Model frailty: Normal							
Cox	0.6833	0.0082	0.0852 (0.0019)	-0.0066 (0.0027)	0.9610 (0.0061)	0.0073 (0.0003)	1000
Exp	0.7069	0.0077	0.0882 (0.0020)	0.0170 (0.0028)	0.9399 (0.0075)	0.0081 (0.0004)	998
Weibull	0.6983	0.0079	0.0868 (0.0019)	0.0084 (0.0027)	0.9530 (0.0067)	0.0076 (0.0003)	1000
Gompertz	0.7034	0.0077	0.0905 (0.0032)	0.0134 (0.0045)	0.9444 (0.0115)	0.0083 (0.0006)	396
RP (3)	0.6939	0.0080	0.0863 (0.0019)	0.0040 (0.0027)	0.9590 (0.0063)	0.0075 (0.0003)	1000
RP (5)	0.6922	0.0079	0.0860 (0.0019)	0.0023 (0.0027)	0.9560 (0.0065)	0.0074 (0.0003)	1000
RP (9)	0.6917	0.0079	0.0860 (0.0019)	0.0018 (0.0027)	0.9580 (0.0063)	0.0074 (0.0003)	1000
RP (P)	0.6938	0.0080	0.0863 (0.0019)	0.0038 (0.0027)	0.9570 (0.0064)	0.0074 (0.0003)	1000
FP (W)	0.6999	0.0084	0.0866 (0.0019)	0.0100 (0.0028)	0.9626 (0.0060)	0.0076 (0.0003)	988
FP (k=10)	0.6874	0.0085	0.0860 (0.0019)	-0.0025 (0.0027)	0.9650 (0.0058)	0.0074 (0.0003)	1000
FP (k=10000)	0.6904	0.0069	0.0860 (0.0019)	0.0005 (0.0027)	0.9460 (0.0071)	0.0074 (0.0003)	1000

Table 101: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.3994	0.0057	0.0719 (0.0016)	0.0340 (0.0023)	0.9378 (0.0077)	0.0063 (0.0003)	996
Exp	0.3925	0.0049	0.0710 (0.0016)	0.0270 (0.0022)	0.9240 (0.0084)	0.0058 (0.0003)	1000
Weibull	0.3923	0.0049	0.0711 (0.0016)	0.0268 (0.0022)	0.9260 (0.0083)	0.0058 (0.0003)	1000
Gompertz	0.3918	0.0049	0.0732 (0.0027)	0.0263 (0.0038)	0.9086 (0.0149)	0.0060 (0.0005)	372
RP (3)	0.3985	0.0052	0.0719 (0.0016)	0.0331 (0.0023)	0.9190 (0.0086)	0.0063 (0.0003)	1000
RP (5)	0.3986	0.0052	0.0720 (0.0016)	0.0332 (0.0023)	0.9180 (0.0087)	0.0063 (0.0003)	1000
RP (9)	0.3991	0.0052	0.0720 (0.0016)	0.0337 (0.0023)	0.9180 (0.0087)	0.0063 (0.0003)	1000
RP (P)	0.3970	0.0051	0.0717 (0.0016)	0.0315 (0.0023)	0.9220 (0.0085)	0.0061 (0.0003)	1000
FP (W)	0.3923	0.0054	0.0711 (0.0016)	0.0268 (0.0022)	0.9440 (0.0073)	0.0058 (0.0003)	1000
FP (k=10)	0.3931	0.0058	0.0718 (0.0016)	0.0277 (0.0023)	0.9508 (0.0069)	0.0059 (0.0003)	996
FP (k=10000)	0.3918	0.0042	0.0712 (0.0016)	0.0263 (0.0023)	0.9004 (0.0095)	0.0058 (0.0003)	994
Model frailty: Normal							
Cox	0.4175	0.0068	0.0767 (0.0017)	0.0521 (0.0024)	0.9110 (0.0090)	0.0086 (0.0004)	1000
Exp	0.4245	0.0063	0.0789 (0.0018)	0.0591 (0.0025)	0.8712 (0.0107)	0.0097 (0.0004)	978
Weibull	0.4236	0.0064	0.0788 (0.0018)	0.0582 (0.0025)	0.8749 (0.0106)	0.0096 (0.0004)	983
Gompertz	0.4263	0.0063	0.0771 (0.0040)	0.0608 (0.0056)	0.8730 (0.0242)	0.0096 (0.0009)	189
RP (3)	0.4333	0.0065	0.0795 (0.0018)	0.0678 (0.0025)	0.8560 (0.0111)	0.0109 (0.0004)	1000
RP (5)	0.4333	0.0065	0.0795 (0.0018)	0.0678 (0.0025)	0.8550 (0.0111)	0.0109 (0.0005)	1000
RP (9)	0.4334	0.0065	0.0796 (0.0018)	0.0680 (0.0025)	0.8540 (0.0112)	0.0109 (0.0005)	1000
RP (P)	0.4317	0.0065	0.0794 (0.0018)	0.0663 (0.0025)	0.8580 (0.0110)	0.0107 (0.0004)	1000
FP (W)	0.4190	0.0062	0.0780 (0.0018)	0.0536 (0.0025)	0.8874 (0.0102)	0.0089 (0.0004)	968
FP (k=10)	0.4133	0.0067	0.0779 (0.0017)	0.0479 (0.0025)	0.9140 (0.0089)	0.0084 (0.0004)	1000
FP (k=10000)	0.4167	0.0056	0.0771 (0.0017)	0.0512 (0.0024)	0.8716 (0.0106)	0.0086 (0.0004)	997

Table 102: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4048	0.0061	0.0755 (0.0017)	0.0343 (0.0024)	0.9419 (0.0074)	0.0069 (0.0003)	999
Exp	0.4045	0.0043	0.0756 (0.0017)	0.0340 (0.0024)	0.8870 (0.0100)	0.0069 (0.0003)	1000
Weibull	0.4001	0.0054	0.0748 (0.0017)	0.0295 (0.0024)	0.9340 (0.0079)	0.0065 (0.0003)	1000
Gompertz	0.4035	0.0043	0.0717 (0.0028)	0.0330 (0.0040)	0.9077 (0.0161)	0.0062 (0.0004)	325
RP (3)	0.4055	0.0057	0.0756 (0.0017)	0.0349 (0.0024)	0.9300 (0.0081)	0.0069 (0.0003)	1000
RP (5)	0.4049	0.0057	0.0755 (0.0017)	0.0343 (0.0024)	0.9320 (0.0080)	0.0069 (0.0003)	1000
RP (9)	0.4050	0.0057	0.0755 (0.0017)	0.0344 (0.0024)	0.9320 (0.0080)	0.0069 (0.0003)	1000
RP (P)	0.4046	0.0057	0.0754 (0.0017)	0.0340 (0.0024)	0.9310 (0.0080)	0.0068 (0.0003)	1000
FP (W)	0.4000	0.0059	0.0748 (0.0017)	0.0294 (0.0024)	0.9479 (0.0070)	0.0065 (0.0003)	999
FP (k=10)	0.4039	0.0060	0.0770 (0.0017)	0.0334 (0.0024)	0.9366 (0.0077)	0.0070 (0.0003)	993
FP (k=10000)	0.4074	0.0040	0.0764 (0.0017)	0.0368 (0.0024)	0.8559 (0.0111)	0.0072 (0.0003)	999
Model frailty: Normal							
Cox	0.4247	0.0075	0.0815 (0.0018)	0.0542 (0.0026)	0.9230 (0.0084)	0.0096 (0.0004)	1000
Exp	0.4441	0.0060	0.0863 (0.0020)	0.0735 (0.0028)	0.8323 (0.0119)	0.0128 (0.0005)	978
Weibull	0.4274	0.0070	0.0830 (0.0019)	0.0568 (0.0027)	0.9110 (0.0091)	0.0101 (0.0005)	978
Gompertz	0.4443	0.0061	0.0949 (0.0071)	0.0737 (0.0099)	0.8132 (0.0409)	0.0143 (0.0022)	91
RP (3)	0.4322	0.0070	0.0833 (0.0019)	0.0616 (0.0026)	0.8950 (0.0097)	0.0107 (0.0005)	1000
RP (5)	0.4323	0.0070	0.0833 (0.0019)	0.0617 (0.0026)	0.8950 (0.0097)	0.0107 (0.0005)	1000
RP (9)	0.4322	0.0070	0.0833 (0.0019)	0.0616 (0.0026)	0.8950 (0.0097)	0.0107 (0.0005)	1000
RP (P)	0.4314	0.0070	0.0831 (0.0019)	0.0608 (0.0026)	0.8970 (0.0096)	0.0106 (0.0005)	1000
FP (W)	0.4224	0.0067	0.0821 (0.0019)	0.0518 (0.0026)	0.9122 (0.0091)	0.0094 (0.0004)	968
FP (k=10)	0.4289	0.0072	0.0838 (0.0019)	0.0584 (0.0027)	0.9090 (0.0091)	0.0104 (0.0005)	1000
FP (k=10000)	0.4368	0.0056	0.0843 (0.0019)	0.0662 (0.0027)	0.8421 (0.0116)	0.0115 (0.0005)	994

Table 103: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4010	0.0052	0.0703 (0.0016)	0.0266 (0.0022)	0.9378 (0.0076)	0.0056 (0.0003)	997
Exp	0.3957	0.0049	0.0696 (0.0016)	0.0213 (0.0022)	0.9360 (0.0077)	0.0053 (0.0002)	1000
Weibull	0.3951	0.0046	0.0693 (0.0015)	0.0208 (0.0022)	0.9310 (0.0080)	0.0052 (0.0002)	1000
Gompertz	0.3995	0.0050	0.0693 (0.0028)	0.0251 (0.0039)	0.9302 (0.0144)	0.0054 (0.0005)	315
RP (3)	0.3925	0.0046	0.0692 (0.0015)	0.0181 (0.0022)	0.9340 (0.0079)	0.0051 (0.0002)	1000
RP (5)	0.3988	0.0047	0.0699 (0.0016)	0.0244 (0.0022)	0.9280 (0.0082)	0.0055 (0.0003)	1000
RP (9)	0.4008	0.0047	0.0702 (0.0016)	0.0264 (0.0022)	0.9250 (0.0083)	0.0056 (0.0003)	1000
RP (P)	0.3980	0.0047	0.0697 (0.0016)	0.0236 (0.0022)	0.9280 (0.0082)	0.0054 (0.0003)	1000
FP (W)	0.3951	0.0052	0.0693 (0.0015)	0.0208 (0.0022)	0.9550 (0.0066)	0.0052 (0.0002)	1000
FP (k=10)	0.3914	0.0053	0.0700 (0.0016)	0.0170 (0.0022)	0.9530 (0.0067)	0.0052 (0.0002)	1000
FP (k=10000)	0.3889	0.0038	0.0692 (0.0016)	0.0145 (0.0022)	0.9014 (0.0095)	0.0050 (0.0002)	994
Model frailty: Normal							
Cox	0.4170	0.0059	0.0725 (0.0016)	0.0426 (0.0023)	0.9240 (0.0084)	0.0071 (0.0003)	1000
Exp	0.4275	0.0061	0.0748 (0.0017)	0.0531 (0.0024)	0.9041 (0.0094)	0.0084 (0.0004)	980
Weibull	0.4311	0.0058	0.0751 (0.0017)	0.0567 (0.0024)	0.8837 (0.0102)	0.0088 (0.0004)	989
Gompertz	0.4378	0.0061	0.0703 (0.0035)	0.0634 (0.0049)	0.9118 (0.0199)	0.0089 (0.0008)	204
RP (3)	0.4309	0.0056	0.0749 (0.0017)	0.0565 (0.0024)	0.8800 (0.0103)	0.0088 (0.0004)	1000
RP (5)	0.4353	0.0056	0.0753 (0.0017)	0.0609 (0.0024)	0.8730 (0.0105)	0.0094 (0.0004)	1000
RP (9)	0.4371	0.0057	0.0756 (0.0017)	0.0627 (0.0024)	0.8670 (0.0107)	0.0096 (0.0004)	1000
RP (P)	0.4340	0.0056	0.0752 (0.0017)	0.0596 (0.0024)	0.8720 (0.0106)	0.0092 (0.0004)	1000
FP (W)	0.4252	0.0059	0.0740 (0.0017)	0.0508 (0.0024)	0.9030 (0.0096)	0.0081 (0.0004)	948
FP (k=10)	0.4186	0.0060	0.0745 (0.0017)	0.0442 (0.0024)	0.9190 (0.0086)	0.0075 (0.0003)	1000
FP (k=10000)	0.4207	0.0047	0.0738 (0.0017)	0.0463 (0.0023)	0.8790 (0.0103)	0.0076 (0.0003)	1000

Table 104: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.3792	0.0047	0.0663 (0.0015)	0.0247 (0.0021)	0.9419 (0.0074)	0.0050 (0.0002)	998
Exp	0.3584	0.0064	0.0680 (0.0015)	0.0039 (0.0022)	0.9770 (0.0047)	0.0046 (0.0002)	1000
Weibull	0.3608	0.0038	0.0643 (0.0014)	0.0064 (0.0020)	0.9340 (0.0079)	0.0042 (0.0002)	1000
Gompertz	0.3550	0.0064	0.0710 (0.0025)	0.0006 (0.0035)	0.9754 (0.0077)	0.0050 (0.0003)	406
RP (3)	0.3727	0.0042	0.0652 (0.0015)	0.0182 (0.0021)	0.9359 (0.0077)	0.0046 (0.0002)	999
RP (5)	0.3777	0.0043	0.0660 (0.0015)	0.0233 (0.0021)	0.9330 (0.0079)	0.0049 (0.0002)	1000
RP (9)	0.3791	0.0043	0.0662 (0.0015)	0.0246 (0.0021)	0.9260 (0.0083)	0.0050 (0.0002)	1000
RP (P)	0.3773	0.0043	0.0659 (0.0015)	0.0229 (0.0021)	0.9329 (0.0079)	0.0049 (0.0002)	998
FP (W)	0.3608	0.0042	0.0643 (0.0014)	0.0064 (0.0020)	0.9540 (0.0066)	0.0042 (0.0002)	1000
FP (k=10)	0.3062	0.0046	0.0663 (0.0015)	-0.0483 (0.0021)	0.8989 (0.0095)	0.0067 (0.0003)	999
FP (k=10000)	0.3263	0.0025	0.0614 (0.0021)	-0.0281 (0.0030)	0.8467 (0.0178)	0.0046 (0.0003)	411
Model frailty: Normal							
Cox	0.3960	0.0055	0.0699 (0.0016)	0.0416 (0.0022)	0.9290 (0.0081)	0.0066 (0.0003)	1000
Exp	0.3779	0.0071	0.0731 (0.0016)	0.0234 (0.0023)	0.9666 (0.0057)	0.0059 (0.0003)	989
Weibull	0.3970	0.0050	0.0718 (0.0016)	0.0425 (0.0023)	0.8978 (0.0097)	0.0070 (0.0003)	978
Gompertz	0.3794	0.0071	0.0743 (0.0029)	0.0250 (0.0042)	0.9497 (0.0123)	0.0061 (0.0005)	318
RP (3)	0.4097	0.0052	0.0722 (0.0016)	0.0552 (0.0023)	0.8690 (0.0107)	0.0083 (0.0003)	1000
RP (5)	0.4138	0.0053	0.0725 (0.0016)	0.0594 (0.0023)	0.8630 (0.0109)	0.0088 (0.0004)	1000
RP (9)	0.4152	0.0053	0.0728 (0.0016)	0.0608 (0.0023)	0.8600 (0.0110)	0.0090 (0.0004)	1000
RP (P)	0.4131	0.0053	0.0726 (0.0016)	0.0586 (0.0023)	0.8650 (0.0108)	0.0087 (0.0004)	1000
FP (W)	0.3937	0.0049	0.0707 (0.0017)	0.0392 (0.0024)	0.9143 (0.0097)	0.0065 (0.0003)	840
FP (k=10)	0.3671	0.0054	0.0711 (0.0016)	0.0126 (0.0023)	0.9519 (0.0068)	0.0052 (0.0002)	998
FP (k=10000)	0.3918	0.0033	0.0725 (0.0016)	0.0373 (0.0023)	0.8291 (0.0119)	0.0066 (0.0003)	995

Table 105: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4014	0.0058	0.0749 (0.0017)	0.0362 (0.0024)	0.9287 (0.0082)	0.0069 (0.0003)	996
Exp	0.4016	0.0047	0.0748 (0.0017)	0.0364 (0.0024)	0.8910 (0.0099)	0.0069 (0.0003)	1000
Weibull	0.3986	0.0053	0.0748 (0.0017)	0.0334 (0.0024)	0.9170 (0.0087)	0.0067 (0.0003)	1000
Gompertz	0.3981	0.0047	0.0770 (0.0029)	0.0330 (0.0040)	0.8950 (0.0161)	0.0070 (0.0005)	362
RP (3)	0.4047	0.0054	0.0757 (0.0017)	0.0395 (0.0024)	0.9020 (0.0094)	0.0073 (0.0003)	1000
RP (5)	0.4022	0.0053	0.0751 (0.0017)	0.0370 (0.0024)	0.9060 (0.0092)	0.0070 (0.0003)	1000
RP (9)	0.4017	0.0053	0.0750 (0.0017)	0.0365 (0.0024)	0.9090 (0.0091)	0.0069 (0.0003)	1000
RP (P)	0.4020	0.0054	0.0751 (0.0017)	0.0368 (0.0024)	0.9080 (0.0091)	0.0070 (0.0003)	1000
FP (W)	0.3987	0.0058	0.0749 (0.0017)	0.0335 (0.0024)	0.9369 (0.0077)	0.0067 (0.0003)	998
FP (k=10)	0.4032	0.0058	0.0758 (0.0017)	0.0381 (0.0024)	0.9243 (0.0084)	0.0072 (0.0003)	991
FP (k=10000)	0.4036	0.0043	0.0757 (0.0017)	0.0384 (0.0024)	0.8637 (0.0109)	0.0072 (0.0003)	998
Model frailty: Normal							
Cox	0.4213	0.0070	0.0810 (0.0018)	0.0561 (0.0026)	0.9030 (0.0094)	0.0097 (0.0004)	1000
Exp	0.4361	0.0062	0.0846 (0.0019)	0.0709 (0.0027)	0.8384 (0.0118)	0.0122 (0.0005)	978
Weibull	0.4282	0.0068	0.0835 (0.0019)	0.0630 (0.0027)	0.8703 (0.0107)	0.0109 (0.0004)	987
Gompertz	0.4359	0.0063	0.0807 (0.0050)	0.0707 (0.0070)	0.8797 (0.0282)	0.0115 (0.0013)	133
RP (3)	0.4366	0.0068	0.0840 (0.0019)	0.0714 (0.0027)	0.8490 (0.0113)	0.0122 (0.0005)	1000
RP (5)	0.4363	0.0067	0.0837 (0.0019)	0.0711 (0.0026)	0.8480 (0.0114)	0.0121 (0.0005)	1000
RP (9)	0.4361	0.0067	0.0836 (0.0019)	0.0710 (0.0026)	0.8490 (0.0113)	0.0120 (0.0005)	1000
RP (P)	0.4352	0.0067	0.0836 (0.0019)	0.0701 (0.0026)	0.8520 (0.0112)	0.0119 (0.0005)	1000
FP (W)	0.4234	0.0066	0.0821 (0.0018)	0.0583 (0.0026)	0.8790 (0.0104)	0.0101 (0.0004)	992
FP (k=10)	0.4268	0.0069	0.0831 (0.0019)	0.0617 (0.0026)	0.8780 (0.0103)	0.0107 (0.0004)	1000
FP (k=10000)	0.4291	0.0058	0.0824 (0.0018)	0.0640 (0.0026)	0.8461 (0.0114)	0.0109 (0.0004)	994

Table 106: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5773	0.0078	0.0909 (0.0020)	0.0010 (0.0029)	0.9460 (0.0071)	0.0082 (0.0004)	1000
Exp	0.5778	0.0078	0.0907 (0.0020)	0.0016 (0.0029)	0.9470 (0.0071)	0.0082 (0.0004)	1000
Weibull	0.5780	0.0078	0.0909 (0.0020)	0.0017 (0.0029)	0.9450 (0.0072)	0.0083 (0.0004)	1000
Gompertz	0.5798	0.0078	0.0932 (0.0030)	0.0036 (0.0043)	0.9332 (0.0114)	0.0087 (0.0006)	479
RP (3)	0.5778	0.0078	0.0909 (0.0020)	0.0015 (0.0029)	0.9460 (0.0071)	0.0083 (0.0004)	1000
RP (5)	0.5778	0.0078	0.0909 (0.0020)	0.0016 (0.0029)	0.9450 (0.0072)	0.0083 (0.0004)	1000
RP (9)	0.5778	0.0078	0.0909 (0.0020)	0.0015 (0.0029)	0.9450 (0.0072)	0.0083 (0.0004)	1000
RP (P)	0.5779	0.0078	0.0909 (0.0020)	0.0016 (0.0029)	0.9450 (0.0072)	0.0083 (0.0004)	1000
FP (W)	0.5779	0.0079	0.0909 (0.0020)	0.0017 (0.0029)	0.9479 (0.0070)	0.0083 (0.0004)	998
FP (k=10)	0.5743	0.0080	0.0911 (0.0020)	-0.0019 (0.0029)	0.9470 (0.0071)	0.0083 (0.0004)	1000
FP (k=10000)	0.5765	0.0062	0.0908 (0.0020)	0.0002 (0.0029)	0.9138 (0.0089)	0.0082 (0.0004)	998
Model frailty: Normal							
Cox	0.5705	0.0081	0.0904 (0.0020)	-0.0057 (0.0029)	0.9530 (0.0067)	0.0082 (0.0004)	1000
Exp	0.5741	0.0080	0.0907 (0.0020)	-0.0021 (0.0029)	0.9510 (0.0068)	0.0082 (0.0004)	999
Weibull	0.5754	0.0080	0.0911 (0.0020)	-0.0009 (0.0029)	0.9499 (0.0069)	0.0083 (0.0004)	999
Gompertz	0.5801	0.0080	0.0921 (0.0032)	0.0038 (0.0045)	0.9366 (0.0120)	0.0085 (0.0007)	410
RP (3)	0.5734	0.0079	0.0907 (0.0020)	-0.0029 (0.0029)	0.9480 (0.0070)	0.0082 (0.0004)	1000
RP (5)	0.5733	0.0079	0.0907 (0.0020)	-0.0030 (0.0029)	0.9460 (0.0071)	0.0082 (0.0004)	1000
RP (9)	0.5732	0.0079	0.0907 (0.0020)	-0.0030 (0.0029)	0.9460 (0.0071)	0.0082 (0.0004)	1000
RP (P)	0.5734	0.0079	0.0907 (0.0020)	-0.0028 (0.0029)	0.9470 (0.0071)	0.0082 (0.0004)	1000
FP (W)	0.5737	0.0078	0.0907 (0.0021)	-0.0025 (0.0029)	0.9458 (0.0073)	0.0082 (0.0004)	960
FP (k=10)	0.5691	0.0079	0.0908 (0.0020)	-0.0071 (0.0029)	0.9458 (0.0072)	0.0083 (0.0004)	996
FP (k=10000)	0.5714	0.0066	0.0906 (0.0020)	-0.0049 (0.0029)	0.9210 (0.0085)	0.0082 (0.0004)	1000

Table 107: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5861	0.0084	0.0945 (0.0021)	-0.0048 (0.0030)	0.9370 (0.0077)	0.0090 (0.0004)	1000
Exp	0.6142	0.0079	0.0996 (0.0022)	0.0234 (0.0031)	0.9190 (0.0086)	0.0105 (0.0005)	1000
Weibull	0.5874	0.0089	0.0947 (0.0021)	-0.0034 (0.0030)	0.9430 (0.0073)	0.0090 (0.0004)	1000
Gompertz	0.6128	0.0080	0.0960 (0.0033)	0.0220 (0.0046)	0.9263 (0.0125)	0.0097 (0.0007)	434
RP (3)	0.5867	0.0089	0.0946 (0.0021)	-0.0042 (0.0030)	0.9410 (0.0075)	0.0090 (0.0004)	1000
RP (5)	0.5866	0.0089	0.0946 (0.0021)	-0.0042 (0.0030)	0.9410 (0.0075)	0.0090 (0.0004)	1000
RP (9)	0.5866	0.0089	0.0947 (0.0021)	-0.0042 (0.0030)	0.9430 (0.0073)	0.0090 (0.0004)	1000
RP (P)	0.5871	0.0089	0.0947 (0.0021)	-0.0038 (0.0030)	0.9410 (0.0075)	0.0090 (0.0004)	1000
FP (W)	0.5874	0.0085	0.0947 (0.0021)	-0.0034 (0.0030)	0.9390 (0.0076)	0.0090 (0.0004)	1000
FP (k=10)	0.5778	0.0086	0.0952 (0.0021)	-0.0130 (0.0030)	0.9340 (0.0079)	0.0092 (0.0004)	1000
FP (k=10000)	0.5943	0.0067	0.0968 (0.0022)	0.0035 (0.0031)	0.9000 (0.0095)	0.0094 (0.0004)	1000
Model frailty: Normal							
Cox	0.5884	0.0090	0.0952 (0.0021)	-0.0024 (0.0030)	0.9440 (0.0073)	0.0091 (0.0004)	1000
Exp	0.6044	0.0081	0.0984 (0.0022)	0.0136 (0.0031)	0.9257 (0.0083)	0.0099 (0.0005)	996
Weibull	0.5835	0.0089	0.0943 (0.0021)	-0.0073 (0.0030)	0.9419 (0.0074)	0.0089 (0.0004)	998
Gompertz	0.6078	0.0081	0.0955 (0.0040)	0.0170 (0.0056)	0.9129 (0.0166)	0.0094 (0.0008)	287
RP (3)	0.5821	0.0089	0.0942 (0.0021)	-0.0087 (0.0030)	0.9430 (0.0073)	0.0089 (0.0004)	1000
RP (5)	0.5820	0.0089	0.0942 (0.0021)	-0.0088 (0.0030)	0.9430 (0.0073)	0.0090 (0.0004)	1000
RP (9)	0.5820	0.0089	0.0943 (0.0021)	-0.0088 (0.0030)	0.9430 (0.0073)	0.0090 (0.0004)	1000
RP (P)	0.5823	0.0089	0.0943 (0.0021)	-0.0085 (0.0030)	0.9440 (0.0073)	0.0089 (0.0004)	1000
FP (W)	0.5824	0.0084	0.0946 (0.0021)	-0.0084 (0.0030)	0.9403 (0.0076)	0.0090 (0.0004)	972
FP (k=10)	0.5740	0.0085	0.0947 (0.0021)	-0.0168 (0.0030)	0.9339 (0.0079)	0.0092 (0.0004)	999
FP (k=10000)	0.5869	0.0072	0.0962 (0.0022)	-0.0039 (0.0030)	0.9147 (0.0088)	0.0093 (0.0004)	997

Table 108: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5422	0.0068	0.0792 (0.0018)	-0.0015 (0.0025)	0.9650 (0.0058)	0.0063 (0.0003)	999
Exp	0.5191	0.0073	0.0762 (0.0017)	-0.0246 (0.0024)	0.9610 (0.0061)	0.0064 (0.0003)	1000
Weibull	0.5352	0.0067	0.0780 (0.0017)	-0.0085 (0.0025)	0.9640 (0.0059)	0.0061 (0.0003)	1000
Gompertz	0.5206	0.0073	0.0774 (0.0021)	-0.0231 (0.0030)	0.9625 (0.0074)	0.0065 (0.0003)	666
RP (3)	0.5417	0.0064	0.0791 (0.0018)	-0.0020 (0.0025)	0.9570 (0.0064)	0.0063 (0.0003)	1000
RP (5)	0.5422	0.0064	0.0792 (0.0018)	-0.0015 (0.0025)	0.9560 (0.0065)	0.0063 (0.0003)	1000
RP (9)	0.5424	0.0064	0.0793 (0.0018)	-0.0014 (0.0025)	0.9570 (0.0064)	0.0063 (0.0003)	1000
RP (P)	0.5407	0.0065	0.0790 (0.0018)	-0.0030 (0.0025)	0.9590 (0.0063)	0.0062 (0.0003)	1000
FP (W)	0.5352	0.0072	0.0777 (0.0017)	-0.0085 (0.0025)	0.9687 (0.0055)	0.0061 (0.0003)	990
FP (k=10)	0.5397	0.0070	0.0792 (0.0018)	-0.0040 (0.0025)	0.9670 (0.0056)	0.0063 (0.0003)	1000
FP (k=10000)	0.5395	0.0052	0.0790 (0.0018)	-0.0042 (0.0025)	0.9209 (0.0085)	0.0062 (0.0003)	999
Model frailty: Normal							
Cox	0.5266	0.0068	0.0770 (0.0017)	-0.0171 (0.0024)	0.9620 (0.0060)	0.0062 (0.0003)	1000
Exp	0.5174	0.0074	0.0764 (0.0017)	-0.0263 (0.0024)	0.9640 (0.0059)	0.0065 (0.0003)	1000
Weibull	0.5349	0.0068	0.0780 (0.0017)	-0.0088 (0.0025)	0.9638 (0.0059)	0.0061 (0.0003)	995
Gompertz	0.5181	0.0074	0.0791 (0.0023)	-0.0256 (0.0032)	0.9610 (0.0078)	0.0069 (0.0004)	616
RP (3)	0.5394	0.0065	0.0786 (0.0018)	-0.0043 (0.0025)	0.9620 (0.0060)	0.0062 (0.0003)	1000
RP (5)	0.5397	0.0065	0.0787 (0.0018)	-0.0040 (0.0025)	0.9610 (0.0061)	0.0062 (0.0003)	1000
RP (9)	0.5398	0.0065	0.0787 (0.0018)	-0.0039 (0.0025)	0.9600 (0.0062)	0.0062 (0.0003)	1000
RP (P)	0.5382	0.0066	0.0784 (0.0018)	-0.0055 (0.0025)	0.9620 (0.0060)	0.0062 (0.0003)	1000
FP (W)	0.5342	0.0072	0.0781 (0.0018)	-0.0095 (0.0026)	0.9709 (0.0055)	0.0062 (0.0003)	929
FP (k=10)	0.5367	0.0070	0.0787 (0.0018)	-0.0070 (0.0025)	0.9690 (0.0055)	0.0062 (0.0003)	1000
FP (k=10000)	0.5378	0.0053	0.0785 (0.0018)	-0.0059 (0.0025)	0.9380 (0.0076)	0.0062 (0.0003)	1000

Table 109: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5154	0.0063	0.0750 (0.0017)	-0.0026 (0.0024)	0.9670 (0.0056)	0.0056 (0.0002)	1000
Exp	0.4813	0.0076	0.0731 (0.0016)	-0.0368 (0.0023)	0.9620 (0.0060)	0.0067 (0.0003)	1000
Weibull	0.5202	0.0057	0.0760 (0.0017)	0.0022 (0.0024)	0.9460 (0.0071)	0.0058 (0.0002)	1000
Gompertz	0.5081	0.0065	0.0763 (0.0017)	-0.0100 (0.0024)	0.9662 (0.0058)	0.0059 (0.0003)	976
RP (3)	0.5147	0.0059	0.0749 (0.0017)	-0.0034 (0.0024)	0.9620 (0.0060)	0.0056 (0.0002)	1000
RP (5)	0.5156	0.0059	0.0750 (0.0017)	-0.0024 (0.0024)	0.9600 (0.0062)	0.0056 (0.0002)	1000
RP (9)	0.5157	0.0060	0.0751 (0.0017)	-0.0023 (0.0024)	0.9610 (0.0061)	0.0056 (0.0002)	1000
RP (P)	0.5156	0.0059	0.0750 (0.0017)	-0.0025 (0.0024)	0.9600 (0.0062)	0.0056 (0.0002)	1000
FP (W)	0.5201	0.0060	0.0761 (0.0017)	0.0021 (0.0024)	0.9528 (0.0067)	0.0058 (0.0002)	996
FP (k=10)	0.4991	0.0064	0.0749 (0.0017)	-0.0189 (0.0024)	0.9560 (0.0065)	0.0060 (0.0003)	1000
FP (k=10000)	0.5214	0.0041	0.0778 (0.0017)	0.0033 (0.0025)	0.8880 (0.0100)	0.0061 (0.0003)	1000
Model frailty: Normal							
Cox	0.5023	0.0063	0.0733 (0.0016)	-0.0157 (0.0023)	0.9640 (0.0059)	0.0056 (0.0002)	1000
Exp	0.4805	0.0076	0.0739 (0.0017)	-0.0375 (0.0023)	0.9590 (0.0063)	0.0069 (0.0003)	999
Weibull	0.5224	0.0059	0.0762 (0.0017)	0.0043 (0.0024)	0.9499 (0.0069)	0.0058 (0.0002)	998
Gompertz	0.5059	0.0068	0.0767 (0.0018)	-0.0121 (0.0025)	0.9660 (0.0059)	0.0060 (0.0003)	940
RP (3)	0.5131	0.0060	0.0748 (0.0017)	-0.0049 (0.0024)	0.9570 (0.0064)	0.0056 (0.0002)	1000
RP (5)	0.5141	0.0061	0.0750 (0.0017)	-0.0039 (0.0024)	0.9570 (0.0064)	0.0056 (0.0002)	1000
RP (9)	0.5142	0.0061	0.0751 (0.0017)	-0.0039 (0.0024)	0.9580 (0.0063)	0.0056 (0.0002)	1000
RP (P)	0.5141	0.0061	0.0750 (0.0017)	-0.0040 (0.0024)	0.9560 (0.0065)	0.0056 (0.0002)	1000
FP (W)	0.5179	0.0061	0.0755 (0.0017)	-0.0001 (0.0024)	0.9540 (0.0068)	0.0057 (0.0002)	956
FP (k=10)	0.5019	0.0064	0.0749 (0.0017)	-0.0161 (0.0024)	0.9630 (0.0060)	0.0059 (0.0002)	999
FP (k=10000)	0.5184	0.0040	0.0782 (0.0017)	0.0004 (0.0025)	0.8760 (0.0104)	0.0061 (0.0003)	1000

Table 110: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5865	0.0081	0.0923 (0.0021)	0.0036 (0.0029)	0.9499 (0.0069)	0.0085 (0.0004)	998
Exp	0.5965	0.0079	0.0943 (0.0021)	0.0135 (0.0030)	0.9330 (0.0079)	0.0091 (0.0004)	1000
Weibull	0.5876	0.0083	0.0926 (0.0021)	0.0047 (0.0029)	0.9530 (0.0067)	0.0086 (0.0004)	1000
Gompertz	0.5943	0.0079	0.0919 (0.0030)	0.0113 (0.0042)	0.9387 (0.0110)	0.0086 (0.0005)	473
RP (3)	0.5872	0.0083	0.0924 (0.0021)	0.0043 (0.0029)	0.9510 (0.0068)	0.0086 (0.0004)	1000
RP (5)	0.5870	0.0083	0.0924 (0.0021)	0.0041 (0.0029)	0.9510 (0.0068)	0.0086 (0.0004)	1000
RP (9)	0.5869	0.0083	0.0924 (0.0021)	0.0040 (0.0029)	0.9510 (0.0068)	0.0086 (0.0004)	1000
RP (P)	0.5871	0.0083	0.0925 (0.0021)	0.0042 (0.0029)	0.9510 (0.0068)	0.0086 (0.0004)	1000
FP (W)	0.5876	0.0082	0.0927 (0.0021)	0.0047 (0.0029)	0.9508 (0.0069)	0.0086 (0.0004)	995
FP (k=10)	0.5821	0.0083	0.0926 (0.0021)	-0.0008 (0.0029)	0.9500 (0.0069)	0.0086 (0.0004)	1000
FP (k=10000)	0.5841	0.0066	0.0922 (0.0021)	0.0012 (0.0029)	0.9090 (0.0091)	0.0085 (0.0004)	1000
Model frailty: Normal							
Cox	0.5836	0.0085	0.0918 (0.0021)	0.0006 (0.0029)	0.9530 (0.0067)	0.0084 (0.0004)	1000
Exp	0.5942	0.0081	0.0938 (0.0021)	0.0113 (0.0030)	0.9390 (0.0076)	0.0089 (0.0004)	1000
Weibull	0.5862	0.0084	0.0924 (0.0021)	0.0033 (0.0029)	0.9479 (0.0070)	0.0085 (0.0004)	998
Gompertz	0.5990	0.0081	0.0960 (0.0037)	0.0161 (0.0052)	0.9206 (0.0147)	0.0094 (0.0007)	340
RP (3)	0.5847	0.0084	0.0921 (0.0021)	0.0017 (0.0029)	0.9470 (0.0071)	0.0085 (0.0004)	1000
RP (5)	0.5844	0.0084	0.0921 (0.0021)	0.0014 (0.0029)	0.9470 (0.0071)	0.0085 (0.0004)	1000
RP (9)	0.5843	0.0083	0.0921 (0.0021)	0.0013 (0.0029)	0.9460 (0.0071)	0.0085 (0.0004)	1000
RP (P)	0.5843	0.0084	0.0921 (0.0021)	0.0014 (0.0029)	0.9450 (0.0072)	0.0085 (0.0004)	1000
FP (W)	0.5847	0.0081	0.0920 (0.0021)	0.0017 (0.0030)	0.9461 (0.0073)	0.0084 (0.0004)	947
FP (k=10)	0.5788	0.0082	0.0921 (0.0021)	-0.0042 (0.0029)	0.9419 (0.0074)	0.0085 (0.0004)	998
FP (k=10000)	0.5808	0.0071	0.0920 (0.0021)	-0.0021 (0.0029)	0.9180 (0.0087)	0.0085 (0.0004)	1000

Table 111: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5943	0.0079	0.0875 (0.0020)	-0.0016 (0.0028)	0.9509 (0.0068)	0.0076 (0.0003)	997
Exp	0.5967	0.0073	0.0878 (0.0020)	0.0008 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
Weibull	0.5943	0.0075	0.0875 (0.0020)	-0.0016 (0.0028)	0.9430 (0.0073)	0.0076 (0.0003)	1000
Gompertz	0.5932	0.0074	0.0868 (0.0028)	-0.0028 (0.0039)	0.9507 (0.0098)	0.0075 (0.0005)	487
RP (3)	0.5944	0.0075	0.0876 (0.0020)	-0.0015 (0.0028)	0.9460 (0.0071)	0.0077 (0.0003)	1000
RP (5)	0.5945	0.0075	0.0876 (0.0020)	-0.0014 (0.0028)	0.9460 (0.0071)	0.0077 (0.0003)	1000
RP (9)	0.5946	0.0075	0.0877 (0.0020)	-0.0013 (0.0028)	0.9460 (0.0071)	0.0077 (0.0003)	1000
RP (P)	0.5944	0.0075	0.0876 (0.0020)	-0.0015 (0.0028)	0.9430 (0.0073)	0.0077 (0.0003)	1000
FP (W)	0.5945	0.0081	0.0875 (0.0020)	-0.0014 (0.0028)	0.9548 (0.0066)	0.0077 (0.0003)	996
FP (k=10)	0.5920	0.0082	0.0878 (0.0020)	-0.0040 (0.0028)	0.9530 (0.0067)	0.0077 (0.0003)	999
FP (k=10000)	0.5935	0.0061	0.0877 (0.0020)	-0.0024 (0.0028)	0.9210 (0.0085)	0.0077 (0.0003)	1000
Model frailty: Normal							
Cox	0.5785	0.0078	0.0853 (0.0019)	-0.0174 (0.0027)	0.9550 (0.0066)	0.0076 (0.0003)	1000
Exp	0.5963	0.0075	0.0877 (0.0020)	0.0004 (0.0028)	0.9468 (0.0071)	0.0077 (0.0003)	996
Weibull	0.5957	0.0075	0.0877 (0.0020)	-0.0002 (0.0028)	0.9459 (0.0072)	0.0077 (0.0003)	998
Gompertz	0.5907	0.0075	0.0865 (0.0028)	-0.0052 (0.0040)	0.9533 (0.0097)	0.0075 (0.0005)	471
RP (3)	0.5939	0.0075	0.0875 (0.0020)	-0.0020 (0.0028)	0.9460 (0.0071)	0.0077 (0.0003)	1000
RP (5)	0.5938	0.0075	0.0875 (0.0020)	-0.0021 (0.0028)	0.9450 (0.0072)	0.0077 (0.0003)	1000
RP (9)	0.5939	0.0075	0.0876 (0.0020)	-0.0021 (0.0028)	0.9450 (0.0072)	0.0077 (0.0003)	1000
RP (P)	0.5939	0.0075	0.0875 (0.0020)	-0.0020 (0.0028)	0.9450 (0.0072)	0.0077 (0.0003)	1000
FP (W)	0.5947	0.0080	0.0874 (0.0020)	-0.0012 (0.0028)	0.9541 (0.0067)	0.0076 (0.0003)	980
FP (k=10)	0.5906	0.0080	0.0876 (0.0020)	-0.0053 (0.0028)	0.9560 (0.0065)	0.0077 (0.0003)	1000
FP (k=10000)	0.5927	0.0062	0.0875 (0.0020)	-0.0033 (0.0028)	0.9270 (0.0082)	0.0077 (0.0003)	1000

Table 112: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6167	0.0089	0.0976 (0.0022)	-0.0071 (0.0031)	0.9399 (0.0075)	0.0096 (0.0004)	998
Exp	0.6442	0.0076	0.1032 (0.0023)	0.0204 (0.0033)	0.8880 (0.0100)	0.0111 (0.0005)	1000
Weibull	0.6178	0.0088	0.0977 (0.0022)	-0.0060 (0.0031)	0.9370 (0.0077)	0.0096 (0.0004)	1000
Gompertz	0.6428	0.0076	0.1057 (0.0036)	0.0190 (0.0051)	0.8819 (0.0155)	0.0115 (0.0008)	432
RP (3)	0.6172	0.0088	0.0976 (0.0022)	-0.0066 (0.0031)	0.9380 (0.0076)	0.0096 (0.0004)	1000
RP (5)	0.6171	0.0088	0.0976 (0.0022)	-0.0067 (0.0031)	0.9360 (0.0077)	0.0096 (0.0004)	1000
RP (9)	0.6172	0.0088	0.0976 (0.0022)	-0.0066 (0.0031)	0.9360 (0.0077)	0.0096 (0.0004)	1000
RP (P)	0.6174	0.0088	0.0977 (0.0022)	-0.0064 (0.0031)	0.9360 (0.0077)	0.0096 (0.0004)	1000
FP (W)	0.6182	0.0090	0.0981 (0.0022)	-0.0056 (0.0031)	0.9422 (0.0074)	0.0096 (0.0004)	986
FP (k=10)	0.6063	0.0092	0.0987 (0.0022)	-0.0175 (0.0031)	0.9350 (0.0078)	0.0100 (0.0004)	1000
FP (k=10000)	0.6261	0.0067	0.1000 (0.0022)	0.0023 (0.0032)	0.8800 (0.0103)	0.0100 (0.0004)	1000
Model frailty: Normal							
Cox	0.6075	0.0090	0.0963 (0.0022)	-0.0163 (0.0030)	0.9410 (0.0075)	0.0095 (0.0004)	1000
Exp	0.6412	0.0079	0.1026 (0.0023)	0.0174 (0.0033)	0.9013 (0.0095)	0.0108 (0.0005)	993
Weibull	0.6177	0.0088	0.0978 (0.0022)	-0.0061 (0.0031)	0.9347 (0.0078)	0.0096 (0.0004)	996
Gompertz	0.6355	0.0079	0.1078 (0.0045)	0.0117 (0.0064)	0.8865 (0.0189)	0.0117 (0.0010)	282
RP (3)	0.6155	0.0088	0.0975 (0.0022)	-0.0083 (0.0031)	0.9370 (0.0077)	0.0096 (0.0004)	1000
RP (5)	0.6153	0.0088	0.0974 (0.0022)	-0.0085 (0.0031)	0.9360 (0.0077)	0.0096 (0.0004)	1000
RP (9)	0.6153	0.0088	0.0975 (0.0022)	-0.0085 (0.0031)	0.9360 (0.0077)	0.0096 (0.0004)	1000
RP (P)	0.6156	0.0087	0.0976 (0.0022)	-0.0082 (0.0031)	0.9360 (0.0077)	0.0096 (0.0004)	1000
FP (W)	0.6151	0.0089	0.0980 (0.0022)	-0.0087 (0.0031)	0.9341 (0.0080)	0.0097 (0.0004)	971
FP (k=10)	0.6065	0.0089	0.0983 (0.0022)	-0.0173 (0.0031)	0.9299 (0.0081)	0.0100 (0.0004)	999
FP (k=10000)	0.6214	0.0070	0.0990 (0.0022)	-0.0024 (0.0031)	0.8890 (0.0100)	0.0098 (0.0004)	991

Table 113: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5483	0.0065	0.0773 (0.0017)	0.0033 (0.0024)	0.9609 (0.0061)	0.0060 (0.0002)	998
Exp	0.5303	0.0064	0.0748 (0.0017)	-0.0146 (0.0024)	0.9560 (0.0065)	0.0058 (0.0002)	1000
Weibull	0.5387	0.0061	0.0757 (0.0017)	-0.0063 (0.0024)	0.9540 (0.0066)	0.0058 (0.0002)	1000
Gompertz	0.5316	0.0064	0.0764 (0.0021)	-0.0133 (0.0029)	0.9568 (0.0078)	0.0060 (0.0003)	672
RP (3)	0.5462	0.0058	0.0771 (0.0017)	0.0013 (0.0024)	0.9460 (0.0071)	0.0059 (0.0002)	1000
RP (5)	0.5476	0.0058	0.0773 (0.0017)	0.0027 (0.0024)	0.9450 (0.0072)	0.0060 (0.0002)	1000
RP (9)	0.5482	0.0058	0.0774 (0.0017)	0.0032 (0.0024)	0.9450 (0.0072)	0.0060 (0.0002)	1000
RP (P)	0.5458	0.0058	0.0770 (0.0017)	0.0009 (0.0024)	0.9470 (0.0071)	0.0059 (0.0002)	1000
FP (W)	0.5387	0.0070	0.0757 (0.0017)	-0.0063 (0.0024)	0.9710 (0.0053)	0.0058 (0.0002)	1000
FP (k=10)	0.5455	0.0067	0.0773 (0.0017)	0.0005 (0.0024)	0.9640 (0.0059)	0.0060 (0.0002)	1000
FP (k=10000)	0.5439	0.0049	0.0770 (0.0017)	-0.0011 (0.0024)	0.9239 (0.0084)	0.0059 (0.0002)	999
Model frailty: Normal							
Cox	0.5269	0.0062	0.0744 (0.0017)	-0.0180 (0.0024)	0.9530 (0.0067)	0.0059 (0.0003)	1000
Exp	0.5288	0.0065	0.0748 (0.0017)	-0.0162 (0.0024)	0.9509 (0.0068)	0.0058 (0.0002)	998
Weibull	0.5398	0.0061	0.0759 (0.0017)	-0.0051 (0.0024)	0.9540 (0.0066)	0.0058 (0.0002)	999
Gompertz	0.5284	0.0065	0.0750 (0.0021)	-0.0166 (0.0030)	0.9556 (0.0082)	0.0059 (0.0003)	630
RP (3)	0.5472	0.0058	0.0772 (0.0017)	0.0022 (0.0024)	0.9410 (0.0075)	0.0060 (0.0002)	1000
RP (5)	0.5484	0.0058	0.0774 (0.0017)	0.0035 (0.0024)	0.9390 (0.0076)	0.0060 (0.0003)	1000
RP (9)	0.5489	0.0058	0.0775 (0.0017)	0.0039 (0.0025)	0.9410 (0.0075)	0.0060 (0.0003)	1000
RP (P)	0.5462	0.0058	0.0771 (0.0017)	0.0013 (0.0024)	0.9410 (0.0075)	0.0059 (0.0002)	1000
FP (W)	0.5390	0.0069	0.0758 (0.0017)	-0.0059 (0.0024)	0.9660 (0.0057)	0.0058 (0.0002)	1000
FP (k=10)	0.5465	0.0067	0.0775 (0.0017)	0.0015 (0.0025)	0.9620 (0.0060)	0.0060 (0.0003)	1000
FP (k=10000)	0.5453	0.0048	0.0771 (0.0017)	0.0003 (0.0024)	0.9180 (0.0087)	0.0059 (0.0002)	1000

Table 114: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5196	0.0060	0.0723 (0.0016)	-0.0020 (0.0023)	0.9570 (0.0064)	0.0052 (0.0002)	999
Exp	0.4968	0.0069	0.0718 (0.0016)	-0.0249 (0.0023)	0.9650 (0.0058)	0.0058 (0.0003)	1000
Weibull	0.5225	0.0051	0.0731 (0.0016)	0.0009 (0.0023)	0.9330 (0.0079)	0.0053 (0.0002)	1000
Gompertz	0.5220	0.0058	0.0731 (0.0016)	0.0004 (0.0023)	0.9479 (0.0070)	0.0053 (0.0003)	998
RP (3)	0.5173	0.0053	0.0720 (0.0016)	-0.0044 (0.0023)	0.9460 (0.0071)	0.0052 (0.0002)	1000
RP (5)	0.5192	0.0054	0.0722 (0.0016)	-0.0025 (0.0023)	0.9470 (0.0071)	0.0052 (0.0002)	1000
RP (9)	0.5197	0.0054	0.0723 (0.0016)	-0.0020 (0.0023)	0.9480 (0.0070)	0.0052 (0.0002)	1000
RP (P)	0.5193	0.0053	0.0722 (0.0016)	-0.0024 (0.0023)	0.9470 (0.0071)	0.0052 (0.0002)	1000
FP (W)	0.5226	0.0057	0.0731 (0.0016)	0.0009 (0.0023)	0.9499 (0.0069)	0.0053 (0.0002)	999
FP (k=10)	0.4990	0.0061	0.0723 (0.0016)	-0.0227 (0.0023)	0.9460 (0.0071)	0.0057 (0.0003)	1000
FP (k=10000)	0.5200	0.0038	0.0745 (0.0017)	-0.0016 (0.0024)	0.8843 (0.0101)	0.0055 (0.0003)	994
Model frailty: Normal							
Cox	0.5010	0.0058	0.0694 (0.0016)	-0.0207 (0.0022)	0.9550 (0.0066)	0.0052 (0.0002)	1000
Exp	0.4963	0.0069	0.0719 (0.0016)	-0.0253 (0.0023)	0.9630 (0.0060)	0.0058 (0.0003)	1000
Weibull	0.5307	0.0053	0.0730 (0.0016)	0.0091 (0.0023)	0.9328 (0.0079)	0.0054 (0.0003)	997
Gompertz	0.5253	0.0060	0.0733 (0.0016)	0.0037 (0.0023)	0.9437 (0.0073)	0.0054 (0.0003)	995
RP (3)	0.5192	0.0053	0.0714 (0.0016)	-0.0025 (0.0023)	0.9490 (0.0070)	0.0051 (0.0002)	1000
RP (5)	0.5212	0.0054	0.0717 (0.0016)	-0.0005 (0.0023)	0.9460 (0.0071)	0.0051 (0.0002)	1000
RP (9)	0.5216	0.0054	0.0718 (0.0016)	-0.0000 (0.0023)	0.9460 (0.0071)	0.0051 (0.0002)	1000
RP (P)	0.5214	0.0054	0.0717 (0.0016)	-0.0002 (0.0023)	0.9460 (0.0071)	0.0051 (0.0002)	1000
FP (W)	0.5276	0.0058	0.0731 (0.0017)	0.0060 (0.0025)	0.9486 (0.0075)	0.0054 (0.0003)	876
FP (k=10)	0.5063	0.0061	0.0716 (0.0016)	-0.0154 (0.0023)	0.9520 (0.0068)	0.0054 (0.0003)	1000
FP (k=10000)	0.5303	0.0037	0.0744 (0.0017)	0.0086 (0.0024)	0.8810 (0.0102)	0.0056 (0.0003)	1000

Table 115: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6050	0.0083	0.0887 (0.0020)	-0.0006 (0.0028)	0.9549 (0.0066)	0.0079 (0.0003)	998
Exp	0.6173	0.0074	0.0909 (0.0020)	0.0118 (0.0029)	0.9310 (0.0080)	0.0084 (0.0004)	1000
Weibull	0.6082	0.0080	0.0891 (0.0020)	0.0026 (0.0028)	0.9500 (0.0069)	0.0079 (0.0003)	1000
Gompertz	0.6120	0.0075	0.0904 (0.0030)	0.0065 (0.0042)	0.9361 (0.0115)	0.0082 (0.0005)	454
RP (3)	0.6072	0.0080	0.0890 (0.0020)	0.0016 (0.0028)	0.9530 (0.0067)	0.0079 (0.0003)	1000
RP (5)	0.6059	0.0079	0.0888 (0.0020)	0.0004 (0.0028)	0.9510 (0.0068)	0.0079 (0.0003)	1000
RP (9)	0.6055	0.0079	0.0887 (0.0020)	-0.0000 (0.0028)	0.9520 (0.0068)	0.0079 (0.0003)	1000
RP (P)	0.6066	0.0080	0.0889 (0.0020)	0.0010 (0.0028)	0.9510 (0.0068)	0.0079 (0.0003)	1000
FP (W)	0.6088	0.0085	0.0890 (0.0020)	0.0032 (0.0028)	0.9565 (0.0065)	0.0079 (0.0003)	989
FP (k=10)	0.6014	0.0086	0.0891 (0.0020)	-0.0041 (0.0028)	0.9580 (0.0063)	0.0079 (0.0003)	1000
FP (k=10000)	0.6058	0.0065	0.0887 (0.0020)	0.0002 (0.0028)	0.9299 (0.0081)	0.0079 (0.0003)	999
Model frailty: Normal							
Cox	0.5917	0.0083	0.0866 (0.0019)	-0.0139 (0.0027)	0.9580 (0.0063)	0.0077 (0.0003)	1000
Exp	0.6203	0.0077	0.0913 (0.0020)	0.0147 (0.0029)	0.9296 (0.0081)	0.0085 (0.0004)	994
Weibull	0.6110	0.0081	0.0894 (0.0020)	0.0054 (0.0028)	0.9518 (0.0068)	0.0080 (0.0004)	995
Gompertz	0.6150	0.0077	0.0909 (0.0033)	0.0094 (0.0047)	0.9314 (0.0130)	0.0083 (0.0006)	379
RP (3)	0.6076	0.0080	0.0891 (0.0020)	0.0020 (0.0028)	0.9530 (0.0067)	0.0079 (0.0003)	1000
RP (5)	0.6061	0.0080	0.0889 (0.0020)	0.0005 (0.0028)	0.9520 (0.0068)	0.0079 (0.0003)	1000
RP (9)	0.6057	0.0079	0.0888 (0.0020)	0.0001 (0.0028)	0.9530 (0.0067)	0.0079 (0.0003)	1000
RP (P)	0.6068	0.0080	0.0890 (0.0020)	0.0012 (0.0028)	0.9510 (0.0068)	0.0079 (0.0003)	1000
FP (W)	0.6086	0.0084	0.0895 (0.0020)	0.0030 (0.0029)	0.9561 (0.0065)	0.0080 (0.0004)	979
FP (k=10)	0.6013	0.0084	0.0891 (0.0020)	-0.0043 (0.0028)	0.9550 (0.0066)	0.0080 (0.0003)	1000
FP (k=10000)	0.6055	0.0068	0.0889 (0.0020)	-0.0001 (0.0028)	0.9330 (0.0079)	0.0079 (0.0003)	1000

Table 116: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2432	0.0026	0.0490 (0.0011)	0.0728 (0.0016)	0.7251 (0.0142)	0.0077 (0.0003)	993
Exp	0.2284	0.0022	0.0467 (0.0010)	0.0580 (0.0015)	0.7610 (0.0135)	0.0055 (0.0002)	1000
Weibull	0.2282	0.0020	0.0467 (0.0010)	0.0578 (0.0015)	0.7510 (0.0137)	0.0055 (0.0002)	1000
Gompertz	0.2121	0.0022	0.0426 (0.0051)	0.0417 (0.0071)	0.9444 (0.0382)	0.0035 (0.0006)	36
RP (3)	0.2436	0.0024	0.0493 (0.0011)	0.0732 (0.0016)	0.6810 (0.0147)	0.0078 (0.0003)	1000
RP (5)	0.2417	0.0024	0.0488 (0.0011)	0.0713 (0.0015)	0.6980 (0.0145)	0.0075 (0.0002)	1000
RP (9)	0.2427	0.0024	0.0490 (0.0011)	0.0723 (0.0015)	0.6910 (0.0146)	0.0076 (0.0002)	1000
RP (P)	0.2425	0.0024	0.0489 (0.0011)	0.0721 (0.0015)	0.6940 (0.0146)	0.0076 (0.0002)	1000
FP (W)	0.2282	0.0022	0.0467 (0.0010)	0.0578 (0.0015)	0.7760 (0.0132)	0.0055 (0.0002)	1000
FP (k=10)	0.2322	0.0026	0.0479 (0.0011)	0.0618 (0.0015)	0.7810 (0.0131)	0.0061 (0.0002)	1000
FP (k=10000)	0.2175	0.0021	0.0462 (0.0016)	0.0471 (0.0023)	0.8277 (0.0186)	0.0044 (0.0003)	412
Model frailty: Normal							
Cox	0.3118	0.0054	0.0668 (0.0015)	0.1414 (0.0021)	0.5150 (0.0158)	0.0245 (0.0006)	998
Exp	0.2753	0.0038	0.0600 (0.0014)	0.1049 (0.0020)	0.5970 (0.0161)	0.0146 (0.0004)	933
Weibull	0.2768	0.0037	0.0611 (0.0014)	0.1064 (0.0020)	0.5736 (0.0163)	0.0150 (0.0005)	917
Gompertz	0.2178	0.0038	0.0327 (0.0094)	0.0474 (0.0123)	1.0000 (0.0000)	0.0032 (0.0016)	7
RP (3)	0.3471	0.0056	0.0751 (0.0017)	0.1767 (0.0024)	0.3570 (0.0152)	0.0369 (0.0009)	1000
RP (5)	0.3474	0.0056	0.0752 (0.0017)	0.1770 (0.0024)	0.3580 (0.0152)	0.0370 (0.0009)	1000
RP (9)	0.3472	0.0056	0.0752 (0.0017)	0.1768 (0.0024)	0.3600 (0.0152)	0.0369 (0.0009)	1000
RP (P)	0.3474	0.0056	0.0750 (0.0017)	0.1770 (0.0024)	0.3540 (0.0151)	0.0369 (0.0009)	1000
FP (W)	0.2817	0.0040	0.0619 (0.0014)	0.1113 (0.0020)	0.5716 (0.0158)	0.0162 (0.0005)	985
FP (k=10)	0.2841	0.0054	0.0645 (0.0014)	0.1137 (0.0020)	0.6867 (0.0147)	0.0171 (0.0005)	999
FP (k=10000)	0.2893	0.0042	0.0638 (0.0014)	0.1189 (0.0020)	0.5435 (0.0158)	0.0182 (0.0005)	999

Table 117: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2383	0.0027	0.0501 (0.0011)	0.0779 (0.0016)	0.6768 (0.0149)	0.0086 (0.0003)	990
Exp	0.2230	0.0018	0.0471 (0.0011)	0.0626 (0.0015)	0.6560 (0.0150)	0.0061 (0.0002)	1000
Weibull	0.2234	0.0020	0.0471 (0.0011)	0.0629 (0.0015)	0.7050 (0.0144)	0.0062 (0.0002)	1000
Gompertz	0.1877	0.0019	0.0217 (0.0153)	0.0273 (0.0153)	1.0000 (0.0000)	0.0010 (0.0008)	2
RP (3)	0.2406	0.0025	0.0507 (0.0011)	0.0802 (0.0016)	0.6330 (0.0152)	0.0090 (0.0003)	1000
RP (5)	0.2387	0.0024	0.0501 (0.0011)	0.0782 (0.0016)	0.6370 (0.0152)	0.0086 (0.0003)	1000
RP (9)	0.2384	0.0024	0.0501 (0.0011)	0.0780 (0.0016)	0.6393 (0.0152)	0.0086 (0.0003)	998
RP (P)	0.2385	0.0024	0.0501 (0.0011)	0.0781 (0.0016)	0.6360 (0.0152)	0.0086 (0.0003)	1000
FP (W)	0.2234	0.0022	0.0471 (0.0011)	0.0629 (0.0015)	0.7390 (0.0139)	0.0062 (0.0002)	1000
FP (k=10)	0.2284	0.0020	0.0484 (0.0011)	0.0679 (0.0015)	0.6540 (0.0150)	0.0070 (0.0002)	1000
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	0.3091	0.0058	0.0686 (0.0016)	0.1486 (0.0022)	0.5010 (0.0160)	0.0268 (0.0007)	980
Exp	0.2766	0.0033	0.0627 (0.0015)	0.1162 (0.0021)	0.4707 (0.0168)	0.0174 (0.0005)	886
Weibull	0.2708	0.0037	0.0598 (0.0014)	0.1104 (0.0020)	0.5644 (0.0168)	0.0157 (0.0005)	870
Gompertz	—	—	—	—	—	—	0
RP (3)	0.3313	0.0057	0.0753 (0.0017)	0.1709 (0.0024)	0.3830 (0.0154)	0.0349 (0.0009)	1000
RP (5)	0.3365	0.0057	0.0757 (0.0017)	0.1761 (0.0024)	0.3610 (0.0152)	0.0367 (0.0009)	1000
RP (9)	0.3357	0.0057	0.0756 (0.0017)	0.1753 (0.0024)	0.3610 (0.0152)	0.0364 (0.0009)	1000
RP (P)	0.3368	0.0057	0.0757 (0.0017)	0.1763 (0.0024)	0.3560 (0.0151)	0.0368 (0.0009)	1000
FP (W)	0.2786	0.0041	0.0619 (0.0014)	0.1182 (0.0020)	0.5526 (0.0157)	0.0178 (0.0005)	999
FP (k=10)	0.2825	0.0053	0.0686 (0.0015)	0.1221 (0.0022)	0.6300 (0.0153)	0.0196 (0.0006)	1000
FP (k=10000)	0.3023	0.0039	0.0677 (0.0015)	0.1419 (0.0021)	0.3940 (0.0155)	0.0247 (0.0006)	1000

Table 118: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2453	0.0025	0.0493 (0.0011)	0.0559 (0.0016)	0.8084 (0.0125)	0.0056 (0.0002)	997
Exp	0.2329	0.0023	0.0468 (0.0010)	0.0435 (0.0015)	0.8530 (0.0112)	0.0041 (0.0002)	1000
Weibull	0.2314	0.0020	0.0465 (0.0010)	0.0420 (0.0015)	0.8340 (0.0118)	0.0039 (0.0002)	1000
Gompertz	0.2379	0.0023	0.0414 (0.0050)	0.0485 (0.0070)	0.8286 (0.0637)	0.0040 (0.0007)	35
RP (3)	0.2373	0.0022	0.0477 (0.0011)	0.0479 (0.0015)	0.8230 (0.0121)	0.0046 (0.0002)	1000
RP (5)	0.2403	0.0022	0.0483 (0.0011)	0.0509 (0.0015)	0.8100 (0.0124)	0.0049 (0.0002)	1000
RP (9)	0.2445	0.0023	0.0491 (0.0011)	0.0551 (0.0016)	0.7870 (0.0129)	0.0054 (0.0002)	1000
RP (P)	0.2435	0.0023	0.0489 (0.0011)	0.0541 (0.0015)	0.7960 (0.0127)	0.0053 (0.0002)	1000
FP (W)	0.2314	0.0022	0.0465 (0.0010)	0.0420 (0.0015)	0.8640 (0.0108)	0.0039 (0.0002)	1000
FP (k=10)	0.2307	0.0024	0.0471 (0.0011)	0.0413 (0.0015)	0.8798 (0.0103)	0.0039 (0.0002)	990
FP (k=10000)	0.2237	0.0020	0.0393 (0.0065)	0.0343 (0.0090)	0.9474 (0.0512)	0.0026 (0.0006)	19
Model frailty: Normal							
Cox	0.3119	0.0049	0.0647 (0.0014)	0.1225 (0.0020)	0.5886 (0.0156)	0.0192 (0.0005)	999
Exp	0.2865	0.0040	0.0602 (0.0014)	0.0971 (0.0020)	0.6774 (0.0153)	0.0131 (0.0004)	930
Weibull	0.2882	0.0037	0.0601 (0.0014)	0.0988 (0.0020)	0.6429 (0.0159)	0.0134 (0.0004)	913
Gompertz	0.3019	0.0040	0.0678 (0.0138)	0.1125 (0.0188)	0.4615 (0.1383)	0.0169 (0.0043)	13
RP (3)	0.3471	0.0051	0.0714 (0.0016)	0.1577 (0.0023)	0.3960 (0.0155)	0.0300 (0.0008)	1000
RP (5)	0.3479	0.0051	0.0716 (0.0016)	0.1586 (0.0023)	0.3960 (0.0155)	0.0303 (0.0008)	1000
RP (9)	0.3518	0.0052	0.0725 (0.0016)	0.1624 (0.0023)	0.3860 (0.0154)	0.0316 (0.0008)	1000
RP (P)	0.3513	0.0052	0.0723 (0.0016)	0.1619 (0.0023)	0.3850 (0.0154)	0.0314 (0.0008)	1000
FP (W)	0.2914	0.0039	0.0606 (0.0014)	0.1020 (0.0019)	0.6356 (0.0154)	0.0141 (0.0004)	977
FP (k=10)	0.2903	0.0051	0.0630 (0.0014)	0.1009 (0.0020)	0.7435 (0.0138)	0.0142 (0.0004)	998
FP (k=10000)	0.2936	0.0039	0.0612 (0.0014)	0.1042 (0.0019)	0.6166 (0.0154)	0.0146 (0.0004)	999

Table 119: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2391	0.0024	0.0464 (0.0010)	0.0499 (0.0015)	0.8458 (0.0114)	0.0046 (0.0002)	999
Exp	0.2188	0.0038	0.0456 (0.0010)	0.0296 (0.0014)	0.9740 (0.0050)	0.0030 (0.0001)	1000
Weibull	0.2207	0.0020	0.0435 (0.0010)	0.0314 (0.0014)	0.8910 (0.0099)	0.0029 (0.0001)	1000
Gompertz	0.2197	0.0038	0.0466 (0.0017)	0.0305 (0.0025)	0.9721 (0.0087)	0.0031 (0.0002)	359
RP (3)	0.2386	0.0023	0.0465 (0.0011)	0.0493 (0.0016)	0.8388 (0.0128)	0.0046 (0.0002)	819
RP (5)	0.2358	0.0022	0.0459 (0.0010)	0.0466 (0.0015)	0.8420 (0.0115)	0.0043 (0.0002)	1000
RP (9)	0.2384	0.0022	0.0462 (0.0010)	0.0492 (0.0015)	0.8280 (0.0119)	0.0046 (0.0002)	1000
RP (P)	0.2379	0.0023	0.0462 (0.0010)	0.0487 (0.0015)	0.8340 (0.0118)	0.0045 (0.0002)	1000
FP (W)	0.2206	0.0021	0.0435 (0.0010)	0.0314 (0.0014)	0.9168 (0.0087)	0.0029 (0.0001)	998
FP (k=10)	0.2044	0.0015	0.0502 (0.0011)	0.0152 (0.0016)	0.8625 (0.0111)	0.0027 (0.0001)	960
FP (k=10000)	0.2140	0.0031	0.0429 (0.0019)	0.0248 (0.0026)	0.9776 (0.0090)	0.0024 (0.0002)	268
Model frailty: Normal							
Cox	0.2997	0.0047	0.0615 (0.0014)	0.1105 (0.0019)	0.6530 (0.0151)	0.0160 (0.0005)	1000
Exp	0.2444	0.0053	0.0553 (0.0013)	0.0552 (0.0018)	0.9409 (0.0077)	0.0061 (0.0002)	947
Weibull	0.2600	0.0033	0.0548 (0.0013)	0.0708 (0.0018)	0.7617 (0.0141)	0.0080 (0.0003)	919
Gompertz	0.2495	0.0053	0.0560 (0.0029)	0.0603 (0.0041)	0.9126 (0.0209)	0.0068 (0.0006)	183
RP (3)	0.3092	0.0052	0.0906 (0.0020)	0.1200 (0.0029)	0.5218 (0.0159)	0.0226 (0.0006)	987
RP (5)	0.3342	0.0049	0.0688 (0.0015)	0.1450 (0.0022)	0.4460 (0.0157)	0.0258 (0.0007)	1000
RP (9)	0.3375	0.0050	0.0693 (0.0016)	0.1483 (0.0022)	0.4300 (0.0157)	0.0268 (0.0007)	1000
RP (P)	0.3344	0.0050	0.0688 (0.0015)	0.1452 (0.0022)	0.4490 (0.0157)	0.0258 (0.0007)	1000
FP (W)	0.2631	0.0035	0.0555 (0.0013)	0.0739 (0.0018)	0.7688 (0.0135)	0.0085 (0.0003)	969
FP (k=10)	0.2204	0.0043	0.0587 (0.0014)	0.0312 (0.0019)	0.9460 (0.0074)	0.0044 (0.0002)	944
FP (k=10000)	0.2422	0.0049	0.0558 (0.0013)	0.0530 (0.0018)	0.9289 (0.0081)	0.0059 (0.0002)	998

Table 120: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2369	0.0026	0.0486 (0.0011)	0.0690 (0.0015)	0.7425 (0.0139)	0.0071 (0.0002)	994
Exp	0.2311	0.0020	0.0480 (0.0011)	0.0633 (0.0015)	0.6850 (0.0147)	0.0063 (0.0002)	1000
Weibull	0.2314	0.0022	0.0479 (0.0011)	0.0636 (0.0015)	0.7220 (0.0142)	0.0063 (0.0002)	1000
Gompertz	0.2195	0.0019	0.0503 (0.0095)	0.0516 (0.0130)	0.6667 (0.1217)	0.0050 (0.0017)	15
RP (3)	0.2417	0.0025	0.0500 (0.0011)	0.0739 (0.0016)	0.6790 (0.0148)	0.0080 (0.0003)	1000
RP (5)	0.2384	0.0024	0.0491 (0.0011)	0.0706 (0.0016)	0.6950 (0.0146)	0.0074 (0.0002)	1000
RP (9)	0.2375	0.0024	0.0489 (0.0011)	0.0696 (0.0015)	0.6990 (0.0145)	0.0072 (0.0002)	1000
RP (P)	0.2375	0.0024	0.0489 (0.0011)	0.0697 (0.0015)	0.7020 (0.0145)	0.0072 (0.0002)	1000
FP (W)	0.2314	0.0024	0.0479 (0.0011)	0.0636 (0.0015)	0.7580 (0.0135)	0.0063 (0.0002)	1000
FP (k=10)	0.2372	0.0023	0.0492 (0.0011)	0.0693 (0.0016)	0.6870 (0.0147)	0.0072 (0.0002)	1000
FP (k=10000)	0.2025	0.0020	0.0441 (0.0057)	0.0346 (0.0079)	0.8710 (0.0602)	0.0031 (0.0006)	31
Model frailty: Normal							
Cox	0.3059	0.0056	0.0676 (0.0015)	0.1381 (0.0022)	0.5309 (0.0159)	0.0236 (0.0006)	987
Exp	0.2831	0.0036	0.0631 (0.0015)	0.1152 (0.0021)	0.5092 (0.0165)	0.0173 (0.0005)	921
Weibull	0.2776	0.0040	0.0620 (0.0015)	0.1098 (0.0021)	0.5794 (0.0165)	0.0159 (0.0005)	894
Gompertz	—	—	—	—	—	—	0
RP (3)	0.3357	0.0057	0.0762 (0.0017)	0.1678 (0.0024)	0.4030 (0.0155)	0.0340 (0.0009)	1000
RP (5)	0.3421	0.0058	0.0769 (0.0017)	0.1742 (0.0024)	0.3810 (0.0154)	0.0363 (0.0009)	1000
RP (9)	0.3416	0.0058	0.0768 (0.0017)	0.1738 (0.0024)	0.3830 (0.0154)	0.0361 (0.0009)	1000
RP (P)	0.3422	0.0058	0.0769 (0.0017)	0.1743 (0.0024)	0.3840 (0.0154)	0.0363 (0.0009)	1000
FP (W)	0.2819	0.0042	0.0632 (0.0014)	0.1141 (0.0020)	0.5751 (0.0157)	0.0170 (0.0005)	986
FP (k=10)	0.2974	0.0054	0.0686 (0.0015)	0.1295 (0.0022)	0.5759 (0.0157)	0.0215 (0.0006)	995
FP (k=10000)	0.3049	0.0041	0.0678 (0.0015)	0.1371 (0.0021)	0.4364 (0.0157)	0.0234 (0.0006)	999

Table 121: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5031	0.0072	0.0860 (0.0019)	-0.0006 (0.0027)	0.9390 (0.0076)	0.0074 (0.0003)	1000
Exp	0.5037	0.0074	0.0861 (0.0019)	0.0000 (0.0027)	0.9410 (0.0075)	0.0074 (0.0003)	1000
Weibull	0.5039	0.0074	0.0861 (0.0019)	0.0002 (0.0027)	0.9450 (0.0072)	0.0074 (0.0003)	1000
Gompertz	0.5059	0.0074	0.0871 (0.0030)	0.0022 (0.0042)	0.9427 (0.0111)	0.0076 (0.0005)	436
RP (3)	0.5036	0.0074	0.0861 (0.0019)	-0.0001 (0.0027)	0.9430 (0.0073)	0.0074 (0.0003)	1000
RP (5)	0.5035	0.0074	0.0860 (0.0019)	-0.0002 (0.0027)	0.9440 (0.0073)	0.0074 (0.0003)	1000
RP (9)	0.5036	0.0074	0.0861 (0.0019)	-0.0001 (0.0027)	0.9450 (0.0072)	0.0074 (0.0003)	1000
RP (P)	0.5037	0.0074	0.0861 (0.0019)	0.0000 (0.0027)	0.9450 (0.0072)	0.0074 (0.0003)	1000
FP (W)	0.5035	0.0074	0.0857 (0.0019)	-0.0002 (0.0027)	0.9459 (0.0072)	0.0073 (0.0003)	998
FP (k=10)	0.4996	0.0074	0.0862 (0.0019)	-0.0041 (0.0027)	0.9423 (0.0074)	0.0074 (0.0003)	988
FP (k=10000)	0.5021	0.0057	0.0860 (0.0019)	-0.0016 (0.0027)	0.9070 (0.0092)	0.0074 (0.0003)	1000
Model frailty: Normal							
Cox	0.5054	0.0079	0.0869 (0.0019)	0.0017 (0.0027)	0.9500 (0.0069)	0.0076 (0.0003)	1000
Exp	0.5019	0.0078	0.0868 (0.0019)	-0.0018 (0.0028)	0.9468 (0.0071)	0.0075 (0.0003)	996
Weibull	0.5031	0.0077	0.0871 (0.0020)	-0.0007 (0.0028)	0.9467 (0.0071)	0.0076 (0.0003)	995
Gompertz	0.5000	0.0078	0.0855 (0.0034)	-0.0037 (0.0049)	0.9417 (0.0133)	0.0073 (0.0006)	309
RP (3)	0.4990	0.0076	0.0863 (0.0019)	-0.0047 (0.0027)	0.9440 (0.0073)	0.0075 (0.0003)	1000
RP (5)	0.4989	0.0075	0.0863 (0.0019)	-0.0048 (0.0027)	0.9440 (0.0073)	0.0075 (0.0003)	1000
RP (9)	0.4989	0.0075	0.0863 (0.0019)	-0.0048 (0.0027)	0.9460 (0.0071)	0.0075 (0.0003)	1000
RP (P)	0.4987	0.0075	0.0863 (0.0019)	-0.0050 (0.0027)	0.9440 (0.0073)	0.0075 (0.0003)	1000
FP (W)	0.4999	0.0072	0.0861 (0.0019)	-0.0038 (0.0027)	0.9381 (0.0077)	0.0074 (0.0003)	985
FP (k=10)	0.4947	0.0073	0.0864 (0.0019)	-0.0090 (0.0027)	0.9409 (0.0075)	0.0075 (0.0003)	998
FP (k=10000)	0.4962	0.0063	0.0860 (0.0019)	-0.0075 (0.0027)	0.9177 (0.0087)	0.0074 (0.0003)	996

Table 122: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5116	0.0078	0.0936 (0.0021)	-0.0026 (0.0030)	0.9337 (0.0079)	0.0088 (0.0004)	996
Exp	0.5360	0.0073	0.0983 (0.0022)	0.0217 (0.0031)	0.9010 (0.0094)	0.0101 (0.0005)	1000
Weibull	0.5128	0.0083	0.0936 (0.0021)	-0.0014 (0.0030)	0.9380 (0.0076)	0.0088 (0.0004)	1000
Gompertz	0.5326	0.0073	0.0988 (0.0035)	0.0184 (0.0050)	0.9033 (0.0149)	0.0101 (0.0007)	393
RP (3)	0.5121	0.0083	0.0936 (0.0021)	-0.0021 (0.0030)	0.9390 (0.0076)	0.0087 (0.0004)	1000
RP (5)	0.5121	0.0083	0.0936 (0.0021)	-0.0022 (0.0030)	0.9390 (0.0076)	0.0088 (0.0004)	1000
RP (9)	0.5121	0.0083	0.0936 (0.0021)	-0.0022 (0.0030)	0.9380 (0.0076)	0.0088 (0.0004)	1000
RP (P)	0.5125	0.0083	0.0936 (0.0021)	-0.0017 (0.0030)	0.9370 (0.0077)	0.0088 (0.0004)	1000
FP (W)	0.5128	0.0079	0.0936 (0.0021)	-0.0014 (0.0030)	0.9320 (0.0080)	0.0088 (0.0004)	1000
FP (k=10)	0.5037	0.0080	0.0944 (0.0021)	-0.0105 (0.0030)	0.9350 (0.0078)	0.0090 (0.0004)	1000
FP (k=10000)	0.5216	0.0061	0.0959 (0.0021)	0.0074 (0.0030)	0.8860 (0.0101)	0.0092 (0.0004)	1000
Model frailty: Normal							
Cox	0.5205	0.0088	0.0961 (0.0022)	0.0063 (0.0030)	0.9410 (0.0075)	0.0093 (0.0004)	1000
Exp	0.5265	0.0077	0.0973 (0.0022)	0.0123 (0.0031)	0.9176 (0.0087)	0.0096 (0.0004)	995
Weibull	0.5087	0.0085	0.0939 (0.0021)	-0.0055 (0.0030)	0.9437 (0.0073)	0.0088 (0.0004)	994
Gompertz	0.5201	0.0077	0.0982 (0.0041)	0.0059 (0.0057)	0.9354 (0.0143)	0.0096 (0.0008)	294
RP (3)	0.5062	0.0084	0.0937 (0.0021)	-0.0080 (0.0030)	0.9430 (0.0073)	0.0088 (0.0004)	1000
RP (5)	0.5062	0.0084	0.0937 (0.0021)	-0.0081 (0.0030)	0.9430 (0.0073)	0.0088 (0.0004)	1000
RP (9)	0.5061	0.0084	0.0938 (0.0021)	-0.0082 (0.0030)	0.9430 (0.0073)	0.0089 (0.0004)	1000
RP (P)	0.5060	0.0083	0.0937 (0.0021)	-0.0082 (0.0030)	0.9420 (0.0074)	0.0088 (0.0004)	1000
FP (W)	0.5050	0.0077	0.0937 (0.0021)	-0.0092 (0.0030)	0.9342 (0.0079)	0.0089 (0.0004)	973
FP (k=10)	0.4986	0.0078	0.0942 (0.0021)	-0.0156 (0.0030)	0.9319 (0.0080)	0.0091 (0.0004)	998
FP (k=10000)	0.5107	0.0068	0.0952 (0.0021)	-0.0036 (0.0030)	0.9109 (0.0090)	0.0091 (0.0004)	999

Table 123: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4851	0.0064	0.0788 (0.0018)	0.0013 (0.0025)	0.9478 (0.0070)	0.0062 (0.0003)	996
Exp	0.4706	0.0073	0.0763 (0.0017)	-0.0131 (0.0024)	0.9680 (0.0056)	0.0060 (0.0003)	1000
Weibull	0.4833	0.0066	0.0781 (0.0017)	-0.0005 (0.0025)	0.9550 (0.0066)	0.0061 (0.0003)	1000
Gompertz	0.4741	0.0073	0.0752 (0.0023)	-0.0097 (0.0033)	0.9698 (0.0074)	0.0057 (0.0004)	529
RP (3)	0.4849	0.0063	0.0786 (0.0018)	0.0012 (0.0025)	0.9430 (0.0073)	0.0062 (0.0003)	1000
RP (5)	0.4852	0.0063	0.0787 (0.0018)	0.0014 (0.0025)	0.9430 (0.0073)	0.0062 (0.0003)	1000
RP (9)	0.4853	0.0063	0.0788 (0.0018)	0.0016 (0.0025)	0.9420 (0.0074)	0.0062 (0.0003)	1000
RP (P)	0.4848	0.0063	0.0786 (0.0018)	0.0011 (0.0025)	0.9460 (0.0071)	0.0062 (0.0003)	1000
FP (W)	0.4832	0.0069	0.0781 (0.0017)	-0.0005 (0.0025)	0.9610 (0.0061)	0.0061 (0.0003)	1000
FP (k=10)	0.4825	0.0066	0.0788 (0.0018)	-0.0012 (0.0025)	0.9540 (0.0066)	0.0062 (0.0003)	1000
FP (k=10000)	0.4833	0.0049	0.0786 (0.0018)	-0.0004 (0.0025)	0.9190 (0.0086)	0.0062 (0.0003)	1000
Model frailty: Normal							
Cox	0.4792	0.0068	0.0780 (0.0017)	-0.0045 (0.0025)	0.9570 (0.0064)	0.0061 (0.0003)	1000
Exp	0.4706	0.0076	0.0774 (0.0017)	-0.0131 (0.0024)	0.9680 (0.0056)	0.0062 (0.0003)	999
Weibull	0.4850	0.0070	0.0789 (0.0018)	0.0013 (0.0025)	0.9577 (0.0064)	0.0062 (0.0003)	993
Gompertz	0.4766	0.0076	0.0761 (0.0026)	-0.0071 (0.0037)	0.9671 (0.0087)	0.0058 (0.0004)	425
RP (3)	0.4838	0.0065	0.0787 (0.0018)	0.0000 (0.0025)	0.9500 (0.0069)	0.0062 (0.0003)	1000
RP (5)	0.4838	0.0065	0.0788 (0.0018)	0.0001 (0.0025)	0.9500 (0.0069)	0.0062 (0.0003)	1000
RP (9)	0.4838	0.0065	0.0788 (0.0018)	0.0001 (0.0025)	0.9490 (0.0070)	0.0062 (0.0003)	1000
RP (P)	0.4832	0.0066	0.0787 (0.0018)	-0.0005 (0.0025)	0.9520 (0.0068)	0.0062 (0.0003)	1000
FP (W)	0.4814	0.0069	0.0785 (0.0018)	-0.0024 (0.0025)	0.9583 (0.0064)	0.0062 (0.0003)	983
FP (k=10)	0.4796	0.0066	0.0788 (0.0018)	-0.0042 (0.0025)	0.9530 (0.0067)	0.0062 (0.0003)	1000
FP (k=10000)	0.4811	0.0052	0.0784 (0.0018)	-0.0026 (0.0025)	0.9289 (0.0081)	0.0062 (0.0003)	998

Table 124: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4590	0.0059	0.0781 (0.0018)	-0.0002 (0.0025)	0.9508 (0.0069)	0.0061 (0.0003)	996
Exp	0.4277	0.0076	0.0762 (0.0017)	-0.0315 (0.0024)	0.9590 (0.0063)	0.0068 (0.0003)	1000
Weibull	0.4588	0.0054	0.0784 (0.0018)	-0.0004 (0.0025)	0.9420 (0.0074)	0.0061 (0.0003)	1000
Gompertz	0.4257	0.0076	0.0764 (0.0021)	-0.0335 (0.0030)	0.9542 (0.0083)	0.0069 (0.0004)	633
RP (3)	0.4585	0.0057	0.0780 (0.0017)	-0.0007 (0.0025)	0.9480 (0.0070)	0.0061 (0.0003)	1000
RP (5)	0.4592	0.0058	0.0781 (0.0017)	-0.0000 (0.0025)	0.9490 (0.0070)	0.0061 (0.0003)	1000
RP (9)	0.4593	0.0058	0.0782 (0.0017)	0.0001 (0.0025)	0.9490 (0.0070)	0.0061 (0.0003)	1000
RP (P)	0.4584	0.0057	0.0784 (0.0018)	-0.0008 (0.0025)	0.9478 (0.0070)	0.0061 (0.0003)	996
FP (W)	0.4584	0.0056	0.0782 (0.0018)	-0.0008 (0.0025)	0.9487 (0.0070)	0.0061 (0.0003)	995
FP (k=10)	0.4412	0.0060	0.0776 (0.0017)	-0.0180 (0.0025)	0.9400 (0.0075)	0.0063 (0.0003)	1000
FP (k=10000)	0.4570	0.0038	0.0795 (0.0018)	-0.0022 (0.0025)	0.8770 (0.0104)	0.0063 (0.0003)	1000
Model frailty: Normal							
Cox	0.4562	0.0063	0.0787 (0.0018)	-0.0030 (0.0025)	0.9560 (0.0065)	0.0062 (0.0003)	1000
Exp	0.4288	0.0078	0.0789 (0.0018)	-0.0304 (0.0025)	0.9559 (0.0065)	0.0071 (0.0003)	998
Weibull	0.4627	0.0059	0.0804 (0.0018)	0.0035 (0.0025)	0.9487 (0.0070)	0.0065 (0.0003)	994
Gompertz	0.4301	0.0078	0.0786 (0.0024)	-0.0291 (0.0034)	0.9647 (0.0080)	0.0070 (0.0004)	538
RP (3)	0.4587	0.0060	0.0791 (0.0018)	-0.0005 (0.0025)	0.9510 (0.0068)	0.0063 (0.0003)	1000
RP (5)	0.4591	0.0060	0.0792 (0.0018)	-0.0001 (0.0025)	0.9510 (0.0068)	0.0063 (0.0003)	1000
RP (9)	0.4590	0.0060	0.0793 (0.0018)	-0.0002 (0.0025)	0.9510 (0.0068)	0.0063 (0.0003)	1000
RP (P)	0.4584	0.0060	0.0792 (0.0018)	-0.0008 (0.0025)	0.9510 (0.0068)	0.0063 (0.0003)	1000
FP (W)	0.4579	0.0057	0.0793 (0.0018)	-0.0013 (0.0025)	0.9428 (0.0074)	0.0063 (0.0003)	996
FP (k=10)	0.4468	0.0061	0.0786 (0.0018)	-0.0124 (0.0025)	0.9475 (0.0071)	0.0063 (0.0003)	991
FP (k=10000)	0.4505	0.0040	0.0819 (0.0018)	-0.0087 (0.0026)	0.8730 (0.0105)	0.0068 (0.0003)	1000

Table 125: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5111	0.0076	0.0885 (0.0020)	0.0027 (0.0028)	0.9339 (0.0079)	0.0078 (0.0004)	999
Exp	0.5187	0.0073	0.0894 (0.0020)	0.0103 (0.0028)	0.9240 (0.0084)	0.0081 (0.0004)	1000
Weibull	0.5103	0.0077	0.0884 (0.0020)	0.0020 (0.0028)	0.9390 (0.0076)	0.0078 (0.0004)	1000
Gompertz	0.5193	0.0073	0.0874 (0.0031)	0.0109 (0.0044)	0.9279 (0.0129)	0.0077 (0.0005)	402
RP (3)	0.5117	0.0078	0.0885 (0.0020)	0.0034 (0.0028)	0.9430 (0.0073)	0.0078 (0.0004)	1000
RP (5)	0.5118	0.0078	0.0885 (0.0020)	0.0034 (0.0028)	0.9430 (0.0073)	0.0078 (0.0004)	1000
RP (9)	0.5117	0.0078	0.0885 (0.0020)	0.0033 (0.0028)	0.9430 (0.0073)	0.0078 (0.0004)	1000
RP (P)	0.5113	0.0078	0.0884 (0.0020)	0.0029 (0.0028)	0.9430 (0.0073)	0.0078 (0.0004)	1000
FP (W)	0.5103	0.0076	0.0884 (0.0020)	0.0020 (0.0028)	0.9370 (0.0077)	0.0078 (0.0004)	1000
FP (k=10)	0.5066	0.0077	0.0885 (0.0020)	-0.0018 (0.0028)	0.9424 (0.0074)	0.0078 (0.0004)	990
FP (k=10000)	0.5094	0.0061	0.0883 (0.0020)	0.0010 (0.0028)	0.9080 (0.0091)	0.0078 (0.0004)	1000
Model frailty: Normal							
Cox	0.5163	0.0084	0.0901 (0.0020)	0.0079 (0.0029)	0.9430 (0.0073)	0.0082 (0.0004)	1000
Exp	0.5171	0.0078	0.0903 (0.0020)	0.0088 (0.0029)	0.9274 (0.0082)	0.0082 (0.0004)	992
Weibull	0.5096	0.0081	0.0895 (0.0020)	0.0013 (0.0028)	0.9437 (0.0073)	0.0080 (0.0004)	995
Gompertz	0.5120	0.0078	0.0886 (0.0037)	0.0036 (0.0052)	0.9315 (0.0148)	0.0078 (0.0007)	292
RP (3)	0.5085	0.0080	0.0887 (0.0020)	0.0001 (0.0028)	0.9450 (0.0072)	0.0079 (0.0003)	1000
RP (5)	0.5084	0.0080	0.0887 (0.0020)	0.0000 (0.0028)	0.9430 (0.0073)	0.0079 (0.0003)	1000
RP (9)	0.5083	0.0080	0.0887 (0.0020)	-0.0001 (0.0028)	0.9430 (0.0073)	0.0079 (0.0003)	1000
RP (P)	0.5076	0.0080	0.0886 (0.0020)	-0.0008 (0.0028)	0.9440 (0.0073)	0.0078 (0.0003)	1000
FP (W)	0.5066	0.0075	0.0886 (0.0020)	-0.0018 (0.0029)	0.9387 (0.0077)	0.0078 (0.0004)	963
FP (k=10)	0.5030	0.0077	0.0891 (0.0020)	-0.0053 (0.0028)	0.9409 (0.0075)	0.0080 (0.0004)	998
FP (k=10000)	0.5044	0.0068	0.0885 (0.0020)	-0.0040 (0.0028)	0.9260 (0.0083)	0.0078 (0.0003)	1000

Table 126: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5378	0.0076	0.0849 (0.0019)	-0.0043 (0.0027)	0.9449 (0.0072)	0.0072 (0.0003)	999
Exp	0.5403	0.0069	0.0852 (0.0019)	-0.0018 (0.0027)	0.9330 (0.0079)	0.0072 (0.0003)	1000
Weibull	0.5378	0.0072	0.0847 (0.0019)	-0.0043 (0.0027)	0.9390 (0.0076)	0.0072 (0.0003)	1000
Gompertz	0.5389	0.0069	0.0827 (0.0028)	-0.0032 (0.0039)	0.9396 (0.0113)	0.0068 (0.0005)	447
RP (3)	0.5379	0.0072	0.0848 (0.0019)	-0.0042 (0.0027)	0.9400 (0.0075)	0.0072 (0.0003)	1000
RP (5)	0.5380	0.0072	0.0849 (0.0019)	-0.0041 (0.0027)	0.9390 (0.0076)	0.0072 (0.0003)	1000
RP (9)	0.5380	0.0072	0.0849 (0.0019)	-0.0041 (0.0027)	0.9390 (0.0076)	0.0072 (0.0003)	1000
RP (P)	0.5378	0.0072	0.0848 (0.0019)	-0.0043 (0.0027)	0.9390 (0.0076)	0.0072 (0.0003)	1000
FP (W)	0.5386	0.0078	0.0846 (0.0019)	-0.0034 (0.0027)	0.9464 (0.0072)	0.0072 (0.0003)	989
FP (k=10)	0.5355	0.0078	0.0850 (0.0019)	-0.0065 (0.0027)	0.9449 (0.0072)	0.0073 (0.0003)	999
FP (k=10000)	0.5374	0.0057	0.0851 (0.0019)	-0.0046 (0.0027)	0.9159 (0.0088)	0.0073 (0.0003)	999
Model frailty: Normal							
Cox	0.5263	0.0076	0.0828 (0.0019)	-0.0158 (0.0026)	0.9480 (0.0070)	0.0071 (0.0003)	1000
Exp	0.5473	0.0073	0.0858 (0.0019)	0.0052 (0.0027)	0.9447 (0.0072)	0.0074 (0.0003)	995
Weibull	0.5458	0.0074	0.0858 (0.0019)	0.0037 (0.0027)	0.9468 (0.0071)	0.0074 (0.0003)	997
Gompertz	0.5482	0.0073	0.0791 (0.0031)	0.0061 (0.0043)	0.9643 (0.0101)	0.0063 (0.0005)	336
RP (3)	0.5416	0.0072	0.0852 (0.0019)	-0.0005 (0.0027)	0.9450 (0.0072)	0.0073 (0.0003)	1000
RP (5)	0.5416	0.0072	0.0853 (0.0019)	-0.0005 (0.0027)	0.9450 (0.0072)	0.0073 (0.0003)	1000
RP (9)	0.5415	0.0072	0.0853 (0.0019)	-0.0006 (0.0027)	0.9450 (0.0072)	0.0073 (0.0003)	1000
RP (P)	0.5416	0.0072	0.0852 (0.0019)	-0.0005 (0.0027)	0.9440 (0.0073)	0.0072 (0.0003)	1000
FP (W)	0.5406	0.0076	0.0855 (0.0020)	-0.0015 (0.0028)	0.9490 (0.0073)	0.0073 (0.0003)	921
FP (k=10)	0.5382	0.0077	0.0852 (0.0019)	-0.0039 (0.0027)	0.9492 (0.0070)	0.0073 (0.0003)	984
FP (k=10000)	0.5400	0.0060	0.0851 (0.0019)	-0.0021 (0.0027)	0.9200 (0.0086)	0.0072 (0.0003)	1000

Table 127: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5661	0.0085	0.0875 (0.0020)	0.0013 (0.0028)	0.9620 (0.0061)	0.0077 (0.0004)	999
Exp	0.5842	0.0068	0.0917 (0.0021)	0.0193 (0.0029)	0.9050 (0.0093)	0.0088 (0.0004)	1000
Weibull	0.5672	0.0083	0.0877 (0.0020)	0.0023 (0.0028)	0.9590 (0.0063)	0.0077 (0.0004)	1000
Gompertz	0.5815	0.0068	0.0969 (0.0034)	0.0167 (0.0048)	0.8864 (0.0158)	0.0097 (0.0007)	405
RP (3)	0.5666	0.0083	0.0876 (0.0020)	0.0018 (0.0028)	0.9600 (0.0062)	0.0077 (0.0003)	1000
RP (5)	0.5665	0.0083	0.0876 (0.0020)	0.0017 (0.0028)	0.9600 (0.0062)	0.0077 (0.0004)	1000
RP (9)	0.5665	0.0083	0.0876 (0.0020)	0.0016 (0.0028)	0.9600 (0.0062)	0.0077 (0.0004)	1000
RP (P)	0.5666	0.0083	0.0876 (0.0020)	0.0018 (0.0028)	0.9600 (0.0062)	0.0077 (0.0004)	1000
FP (W)	0.5672	0.0087	0.0877 (0.0020)	0.0024 (0.0028)	0.9619 (0.0061)	0.0077 (0.0004)	998
FP (k=10)	0.5535	0.0087	0.0892 (0.0020)	-0.0113 (0.0028)	0.9530 (0.0067)	0.0081 (0.0004)	1000
FP (k=10000)	0.5755	0.0060	0.0900 (0.0020)	0.0107 (0.0028)	0.8920 (0.0098)	0.0082 (0.0004)	1000
Model frailty: Normal							
Cox	0.5591	0.0087	0.0858 (0.0019)	-0.0057 (0.0027)	0.9640 (0.0059)	0.0074 (0.0003)	1000
Exp	0.5933	0.0074	0.0914 (0.0021)	0.0284 (0.0029)	0.9082 (0.0092)	0.0092 (0.0004)	991
Weibull	0.5736	0.0085	0.0876 (0.0020)	0.0087 (0.0028)	0.9640 (0.0059)	0.0077 (0.0004)	999
Gompertz	0.5894	0.0074	0.0872 (0.0036)	0.0246 (0.0051)	0.9317 (0.0147)	0.0082 (0.0008)	293
RP (3)	0.5679	0.0083	0.0869 (0.0019)	0.0031 (0.0027)	0.9620 (0.0060)	0.0076 (0.0003)	1000
RP (5)	0.5677	0.0083	0.0869 (0.0019)	0.0029 (0.0027)	0.9610 (0.0061)	0.0076 (0.0003)	1000
RP (9)	0.5676	0.0083	0.0869 (0.0019)	0.0028 (0.0027)	0.9600 (0.0062)	0.0076 (0.0003)	1000
RP (P)	0.5678	0.0083	0.0870 (0.0019)	0.0030 (0.0027)	0.9620 (0.0060)	0.0076 (0.0003)	1000
FP (W)	0.5679	0.0085	0.0873 (0.0020)	0.0031 (0.0028)	0.9624 (0.0061)	0.0076 (0.0004)	958
FP (k=10)	0.5592	0.0084	0.0880 (0.0020)	-0.0056 (0.0028)	0.9609 (0.0061)	0.0078 (0.0004)	998
FP (k=10000)	0.5743	0.0065	0.0887 (0.0020)	0.0095 (0.0028)	0.9108 (0.0090)	0.0080 (0.0004)	998

Table 128: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4995	0.0063	0.0777 (0.0017)	-0.0043 (0.0025)	0.9560 (0.0065)	0.0060 (0.0003)	999
Exp	0.4917	0.0063	0.0764 (0.0017)	-0.0122 (0.0024)	0.9530 (0.0067)	0.0060 (0.0003)	1000
Weibull	0.4952	0.0060	0.0770 (0.0017)	-0.0087 (0.0024)	0.9480 (0.0070)	0.0060 (0.0003)	1000
Gompertz	0.4902	0.0064	0.0780 (0.0024)	-0.0137 (0.0034)	0.9497 (0.0094)	0.0063 (0.0004)	537
RP (3)	0.4978	0.0057	0.0774 (0.0017)	-0.0061 (0.0024)	0.9420 (0.0074)	0.0060 (0.0003)	1000
RP (5)	0.4989	0.0057	0.0776 (0.0017)	-0.0050 (0.0025)	0.9410 (0.0075)	0.0060 (0.0003)	1000
RP (9)	0.4993	0.0057	0.0777 (0.0017)	-0.0045 (0.0025)	0.9410 (0.0075)	0.0061 (0.0003)	1000
RP (P)	0.4981	0.0057	0.0775 (0.0017)	-0.0058 (0.0024)	0.9420 (0.0074)	0.0060 (0.0003)	1000
FP (W)	0.4952	0.0069	0.0770 (0.0017)	-0.0087 (0.0024)	0.9650 (0.0058)	0.0060 (0.0003)	1000
FP (k=10)	0.4961	0.0065	0.0778 (0.0017)	-0.0077 (0.0025)	0.9510 (0.0068)	0.0061 (0.0003)	1000
FP (k=10000)	0.4965	0.0047	0.0776 (0.0017)	-0.0074 (0.0025)	0.9226 (0.0085)	0.0061 (0.0003)	995
Model frailty: Normal							
Cox	0.4840	0.0061	0.0748 (0.0017)	-0.0199 (0.0024)	0.9520 (0.0068)	0.0060 (0.0003)	1000
Exp	0.4940	0.0065	0.0766 (0.0017)	-0.0099 (0.0024)	0.9609 (0.0061)	0.0060 (0.0003)	997
Weibull	0.5019	0.0061	0.0775 (0.0017)	-0.0020 (0.0025)	0.9557 (0.0065)	0.0060 (0.0003)	994
Gompertz	0.4925	0.0065	0.0779 (0.0024)	-0.0114 (0.0034)	0.9588 (0.0088)	0.0062 (0.0004)	510
RP (3)	0.5043	0.0057	0.0777 (0.0017)	0.0005 (0.0025)	0.9480 (0.0070)	0.0060 (0.0003)	1000
RP (5)	0.5052	0.0058	0.0779 (0.0017)	0.0013 (0.0025)	0.9480 (0.0070)	0.0061 (0.0003)	1000
RP (9)	0.5056	0.0058	0.0780 (0.0017)	0.0017 (0.0025)	0.9480 (0.0070)	0.0061 (0.0003)	1000
RP (P)	0.5037	0.0058	0.0777 (0.0017)	-0.0002 (0.0025)	0.9480 (0.0070)	0.0060 (0.0003)	1000
FP (W)	0.4991	0.0067	0.0769 (0.0018)	-0.0047 (0.0026)	0.9657 (0.0061)	0.0059 (0.0003)	904
FP (k=10)	0.5026	0.0064	0.0779 (0.0017)	-0.0012 (0.0025)	0.9630 (0.0060)	0.0061 (0.0003)	999
FP (k=10000)	0.5023	0.0047	0.0778 (0.0017)	-0.0016 (0.0025)	0.9200 (0.0086)	0.0060 (0.0003)	1000

Table 129: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4758	0.0058	0.0727 (0.0016)	-0.0061 (0.0023)	0.9540 (0.0066)	0.0053 (0.0003)	1000
Exp	0.4584	0.0071	0.0721 (0.0016)	-0.0235 (0.0023)	0.9680 (0.0056)	0.0057 (0.0003)	1000
Weibull	0.4749	0.0050	0.0726 (0.0016)	-0.0070 (0.0023)	0.9370 (0.0077)	0.0053 (0.0003)	1000
Gompertz	0.4626	0.0070	0.0708 (0.0019)	-0.0193 (0.0026)	0.9693 (0.0064)	0.0054 (0.0003)	716
RP (3)	0.4739	0.0052	0.0724 (0.0016)	-0.0080 (0.0023)	0.9450 (0.0072)	0.0053 (0.0003)	1000
RP (5)	0.4754	0.0052	0.0726 (0.0016)	-0.0065 (0.0023)	0.9460 (0.0071)	0.0053 (0.0003)	1000
RP (9)	0.4759	0.0053	0.0727 (0.0016)	-0.0060 (0.0023)	0.9450 (0.0072)	0.0053 (0.0003)	1000
RP (P)	0.4751	0.0052	0.0728 (0.0016)	-0.0068 (0.0023)	0.9440 (0.0073)	0.0053 (0.0003)	1000
FP (W)	0.4752	0.0055	0.0726 (0.0016)	-0.0067 (0.0023)	0.9496 (0.0069)	0.0053 (0.0003)	992
FP (k=10)	0.4512	0.0059	0.0729 (0.0016)	-0.0307 (0.0023)	0.9380 (0.0076)	0.0062 (0.0003)	1000
FP (k=10000)	0.4690	0.0037	0.0731 (0.0016)	-0.0129 (0.0023)	0.8873 (0.0100)	0.0055 (0.0003)	994
Model frailty: Normal							
Cox	0.4628	0.0057	0.0700 (0.0016)	-0.0191 (0.0022)	0.9490 (0.0070)	0.0053 (0.0003)	1000
Exp	0.4602	0.0071	0.0729 (0.0016)	-0.0217 (0.0023)	0.9700 (0.0054)	0.0058 (0.0003)	1000
Weibull	0.4904	0.0053	0.0738 (0.0017)	0.0085 (0.0023)	0.9439 (0.0073)	0.0055 (0.0003)	998
Gompertz	0.4640	0.0071	0.0737 (0.0021)	-0.0179 (0.0030)	0.9658 (0.0073)	0.0057 (0.0003)	614
RP (3)	0.4811	0.0053	0.0724 (0.0016)	-0.0007 (0.0023)	0.9510 (0.0068)	0.0052 (0.0002)	1000
RP (5)	0.4825	0.0054	0.0726 (0.0016)	0.0006 (0.0023)	0.9500 (0.0069)	0.0053 (0.0002)	1000
RP (9)	0.4829	0.0054	0.0727 (0.0016)	0.0010 (0.0023)	0.9510 (0.0068)	0.0053 (0.0002)	1000
RP (P)	0.4826	0.0054	0.0726 (0.0016)	0.0007 (0.0023)	0.9500 (0.0069)	0.0053 (0.0002)	1000
FP (W)	0.4823	0.0056	0.0729 (0.0019)	0.0004 (0.0027)	0.9545 (0.0077)	0.0053 (0.0003)	725
FP (k=10)	0.4662	0.0059	0.0725 (0.0016)	-0.0157 (0.0023)	0.9529 (0.0067)	0.0055 (0.0003)	998
FP (k=10000)	0.4869	0.0036	0.0745 (0.0017)	0.0050 (0.0024)	0.8890 (0.0099)	0.0056 (0.0003)	1000

Table 130: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5463	0.0079	0.0884 (0.0020)	-0.0033 (0.0028)	0.9530 (0.0067)	0.0078 (0.0004)	999
Exp	0.5553	0.0068	0.0904 (0.0020)	0.0057 (0.0029)	0.9290 (0.0081)	0.0082 (0.0004)	1000
Weibull	0.5481	0.0076	0.0887 (0.0020)	-0.0016 (0.0028)	0.9490 (0.0070)	0.0079 (0.0004)	1000
Gompertz	0.5518	0.0068	0.0920 (0.0033)	0.0022 (0.0046)	0.9175 (0.0138)	0.0084 (0.0006)	400
RP (3)	0.5484	0.0076	0.0888 (0.0020)	-0.0013 (0.0028)	0.9500 (0.0069)	0.0079 (0.0004)	1000
RP (5)	0.5471	0.0075	0.0885 (0.0020)	-0.0026 (0.0028)	0.9490 (0.0070)	0.0078 (0.0004)	1000
RP (9)	0.5466	0.0075	0.0884 (0.0020)	-0.0030 (0.0028)	0.9490 (0.0070)	0.0078 (0.0004)	1000
RP (P)	0.5474	0.0075	0.0886 (0.0020)	-0.0023 (0.0028)	0.9500 (0.0069)	0.0078 (0.0004)	1000
FP (W)	0.5477	0.0081	0.0889 (0.0020)	-0.0019 (0.0028)	0.9555 (0.0066)	0.0079 (0.0004)	988
FP (k=10)	0.5426	0.0081	0.0891 (0.0020)	-0.0070 (0.0028)	0.9530 (0.0067)	0.0080 (0.0004)	1000
FP (k=10000)	0.5486	0.0060	0.0891 (0.0020)	-0.0010 (0.0028)	0.9170 (0.0087)	0.0079 (0.0004)	1000
Model frailty: Normal							
Cox	0.5367	0.0080	0.0862 (0.0019)	-0.0129 (0.0027)	0.9590 (0.0063)	0.0076 (0.0004)	1000
Exp	0.5670	0.0074	0.0909 (0.0020)	0.0173 (0.0029)	0.9398 (0.0075)	0.0086 (0.0004)	997
Weibull	0.5576	0.0079	0.0895 (0.0020)	0.0079 (0.0028)	0.9569 (0.0064)	0.0081 (0.0004)	997
Gompertz	0.5648	0.0074	0.0894 (0.0039)	0.0152 (0.0055)	0.9549 (0.0127)	0.0082 (0.0007)	266
RP (3)	0.5529	0.0076	0.0887 (0.0020)	0.0032 (0.0028)	0.9540 (0.0066)	0.0079 (0.0004)	1000
RP (5)	0.5515	0.0076	0.0883 (0.0020)	0.0019 (0.0028)	0.9540 (0.0066)	0.0078 (0.0004)	1000
RP (9)	0.5512	0.0076	0.0883 (0.0020)	0.0015 (0.0028)	0.9540 (0.0066)	0.0078 (0.0004)	1000
RP (P)	0.5518	0.0076	0.0884 (0.0020)	0.0021 (0.0028)	0.9540 (0.0066)	0.0078 (0.0004)	1000
FP (W)	0.5529	0.0080	0.0890 (0.0020)	0.0033 (0.0029)	0.9589 (0.0064)	0.0079 (0.0004)	949
FP (k=10)	0.5470	0.0080	0.0886 (0.0020)	-0.0026 (0.0028)	0.9528 (0.0067)	0.0078 (0.0004)	995
FP (k=10000)	0.5517	0.0064	0.0887 (0.0020)	0.0021 (0.0028)	0.9260 (0.0083)	0.0079 (0.0004)	1000

Table 131: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.1815	0.0017	0.0393 (0.0009)	0.0775 (0.0012)	0.5398 (0.0158)	0.0076 (0.0002)	993
Exp	0.1646	0.0014	0.0360 (0.0008)	0.0606 (0.0011)	0.6500 (0.0151)	0.0050 (0.0001)	1000
Weibull	0.1644	0.0012	0.0360 (0.0008)	0.0604 (0.0011)	0.5890 (0.0156)	0.0049 (0.0001)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	0.1826	0.0016	0.0399 (0.0009)	0.0786 (0.0013)	0.5020 (0.0158)	0.0078 (0.0002)	1000
RP (5)	0.1807	0.0015	0.0393 (0.0009)	0.0767 (0.0012)	0.5070 (0.0158)	0.0074 (0.0002)	1000
RP (9)	0.1809	0.0016	0.0392 (0.0009)	0.0769 (0.0012)	0.5140 (0.0158)	0.0075 (0.0002)	1000
RP (P)	0.1815	0.0016	0.0394 (0.0009)	0.0775 (0.0012)	0.5110 (0.0158)	0.0076 (0.0002)	1000
FP (W)	0.1644	0.0013	0.0360 (0.0008)	0.0604 (0.0011)	0.6230 (0.0153)	0.0049 (0.0001)	1000
FP (k=10)	0.1689	0.0016	0.0368 (0.0008)	0.0648 (0.0012)	0.6406 (0.0152)	0.0056 (0.0002)	999
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	0.2655	0.0054	0.0618 (0.0014)	0.1615 (0.0020)	0.3770 (0.0153)	0.0299 (0.0006)	1000
Exp	0.2073	0.0027	0.0480 (0.0012)	0.1033 (0.0017)	0.4921 (0.0174)	0.0130 (0.0004)	821
Weibull	0.2086	0.0025	0.0470 (0.0012)	0.1046 (0.0016)	0.4413 (0.0174)	0.0131 (0.0004)	818
Gompertz	—	—	—	—	—	—	0
RP (3)	0.2994	0.0054	0.0742 (0.0017)	0.1954 (0.0023)	0.2440 (0.0136)	0.0437 (0.0010)	1000
RP (5)	0.3062	0.0054	0.0748 (0.0017)	0.2022 (0.0024)	0.2210 (0.0131)	0.0465 (0.0010)	1000
RP (9)	0.3034	0.0054	0.0743 (0.0017)	0.1994 (0.0023)	0.2220 (0.0131)	0.0453 (0.0010)	1000
RP (P)	0.3079	0.0055	0.0744 (0.0017)	0.2039 (0.0024)	0.2110 (0.0129)	0.0471 (0.0010)	1000
FP (W)	0.2237	0.0033	0.0524 (0.0012)	0.1197 (0.0017)	0.4580 (0.0159)	0.0171 (0.0004)	976
FP (k=10)	0.2086	0.0048	0.0579 (0.0013)	0.1046 (0.0018)	0.6977 (0.0145)	0.0143 (0.0004)	999
FP (k=10000)	0.2313	0.0034	0.0559 (0.0013)	0.1273 (0.0018)	0.4259 (0.0157)	0.0193 (0.0005)	998

Table 132: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.1805	0.0017	0.0398 (0.0009)	0.0858 (0.0013)	0.4482 (0.0158)	0.0089 (0.0002)	995
Exp	0.1566	0.0011	0.0344 (0.0008)	0.0619 (0.0011)	0.5320 (0.0158)	0.0050 (0.0001)	1000
Weibull	0.1564	0.0011	0.0344 (0.0008)	0.0617 (0.0011)	0.5240 (0.0158)	0.0050 (0.0001)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	0.1812	0.0016	0.0405 (0.0009)	0.0865 (0.0013)	0.4120 (0.0156)	0.0091 (0.0002)	1000
RP (5)	0.1812	0.0016	0.0398 (0.0009)	0.0865 (0.0013)	0.4076 (0.0158)	0.0091 (0.0002)	969
RP (9)	0.1975	0.0017	0.0540 (0.0191)	0.1029 (0.0242)	0.4000 (0.2191)	0.0129 (0.0049)	5
RP (P)	0.1810	0.0016	0.0399 (0.0009)	0.0863 (0.0013)	0.4070 (0.0155)	0.0090 (0.0002)	1000
FP (W)	0.1564	0.0012	0.0344 (0.0008)	0.0617 (0.0011)	0.5465 (0.0158)	0.0050 (0.0001)	999
FP (k=10)	0.1612	0.0012	0.0354 (0.0008)	0.0665 (0.0011)	0.5065 (0.0158)	0.0057 (0.0002)	995
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	0.2648	0.0056	0.0624 (0.0014)	0.1701 (0.0020)	0.3521 (0.0151)	0.0328 (0.0007)	997
Exp	0.1992	0.0023	0.0471 (0.0012)	0.1046 (0.0017)	0.3939 (0.0178)	0.0132 (0.0004)	754
Weibull	0.1993	0.0023	0.0465 (0.0012)	0.1046 (0.0017)	0.3935 (0.0179)	0.0131 (0.0004)	742
Gompertz	—	—	—	—	—	—	0
RP (3)	0.2855	0.0052	0.0728 (0.0016)	0.1908 (0.0023)	0.2340 (0.0134)	0.0417 (0.0009)	1000
RP (5)	0.2903	0.0054	0.0769 (0.0017)	0.1956 (0.0024)	0.2341 (0.0135)	0.0442 (0.0010)	991
RP (9)	0.1063	0.0094	0.0766 (0.0023)	0.0117 (0.0032)	0.9822 (0.0056)	0.0060 (0.0004)	563
RP (P)	0.2981	0.0055	0.0742 (0.0017)	0.2034 (0.0023)	0.2050 (0.0128)	0.0469 (0.0010)	1000
FP (W)	0.2188	0.0033	0.0504 (0.0011)	0.1241 (0.0016)	0.3998 (0.0157)	0.0179 (0.0004)	973
FP (k=10)	0.1806	0.0044	0.0586 (0.0013)	0.0860 (0.0019)	0.7593 (0.0135)	0.0108 (0.0003)	997
FP (k=10000)	0.2369	0.0030	0.0559 (0.0013)	0.1422 (0.0018)	0.2681 (0.0140)	0.0233 (0.0005)	996

Table 133: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.1875	0.0017	0.0391 (0.0009)	0.0691 (0.0012)	0.6093 (0.0155)	0.0063 (0.0002)	993
Exp	0.1725	0.0014	0.0362 (0.0008)	0.0542 (0.0011)	0.7050 (0.0144)	0.0042 (0.0001)	1000
Weibull	0.1712	0.0012	0.0360 (0.0008)	0.0528 (0.0011)	0.6610 (0.0150)	0.0041 (0.0001)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	0.1827	0.0014	0.0383 (0.0009)	0.0644 (0.0012)	0.6030 (0.0155)	0.0056 (0.0002)	1000
RP (5)	0.1822	0.0014	0.0381 (0.0009)	0.0638 (0.0012)	0.6080 (0.0154)	0.0055 (0.0002)	1000
RP (9)	0.1861	0.0015	0.0388 (0.0009)	0.0677 (0.0012)	0.5820 (0.0156)	0.0061 (0.0002)	1000
RP (P)	0.1867	0.0015	0.0390 (0.0009)	0.0684 (0.0012)	0.5810 (0.0156)	0.0062 (0.0002)	1000
FP (W)	0.1712	0.0013	0.0360 (0.0008)	0.0529 (0.0011)	0.6921 (0.0146)	0.0041 (0.0001)	997
FP (k=10)	0.1730	0.0015	0.0364 (0.0008)	0.0546 (0.0012)	0.7199 (0.0143)	0.0043 (0.0001)	989
FP (k=10000)	0.1476	0.0013	0.0487 (0.0172)	0.0292 (0.0218)	0.8000 (0.1789)	0.0028 (0.0020)	5
Model frailty: Normal							
Cox	0.2721	0.0050	0.0597 (0.0014)	0.1537 (0.0019)	0.3977 (0.0160)	0.0272 (0.0006)	938
Exp	0.2215	0.0029	0.0494 (0.0012)	0.1031 (0.0017)	0.5081 (0.0170)	0.0131 (0.0004)	866
Weibull	0.2232	0.0026	0.0495 (0.0012)	0.1048 (0.0017)	0.4580 (0.0171)	0.0134 (0.0004)	845
Gompertz	—	—	—	—	—	—	0
RP (3)	0.3237	0.0054	0.0723 (0.0016)	0.2053 (0.0023)	0.2060 (0.0128)	0.0474 (0.0010)	1000
RP (5)	0.3250	0.0053	0.0721 (0.0016)	0.2066 (0.0023)	0.1970 (0.0126)	0.0479 (0.0010)	1000
RP (9)	0.3246	0.0053	0.0720 (0.0016)	0.2062 (0.0023)	0.1960 (0.0126)	0.0477 (0.0010)	1000
RP (P)	0.3268	0.0054	0.0727 (0.0016)	0.2084 (0.0023)	0.1930 (0.0125)	0.0487 (0.0010)	1000
FP (W)	0.2369	0.0033	0.0525 (0.0012)	0.1185 (0.0017)	0.4466 (0.0159)	0.0168 (0.0004)	983
FP (k=10)	0.2206	0.0045	0.0567 (0.0013)	0.1022 (0.0018)	0.7050 (0.0144)	0.0137 (0.0004)	1000
FP (k=10000)	0.2406	0.0033	0.0543 (0.0012)	0.1222 (0.0017)	0.4284 (0.0157)	0.0179 (0.0004)	999

Table 134: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.1856	0.0017	0.0401 (0.0009)	0.0613 (0.0013)	0.6620 (0.0150)	0.0054 (0.0002)	994
Exp	0.1679	0.0026	0.0378 (0.0008)	0.0436 (0.0012)	0.9410 (0.0075)	0.0033 (0.0001)	1000
Weibull	0.1694	0.0013	0.0370 (0.0008)	0.0451 (0.0012)	0.7510 (0.0137)	0.0034 (0.0001)	1000
Gompertz	0.1679	0.0026	0.0314 (0.0020)	0.0436 (0.0029)	0.9832 (0.0118)	0.0029 (0.0003)	119
RP (3)	0.1866	0.0016	0.0413 (0.0012)	0.0623 (0.0016)	0.6270 (0.0193)	0.0056 (0.0002)	630
RP (5)	0.1824	0.0015	0.0394 (0.0009)	0.0582 (0.0013)	0.6619 (0.0150)	0.0049 (0.0002)	988
RP (9)	0.1843	0.0015	0.0399 (0.0009)	0.0600 (0.0013)	0.6490 (0.0151)	0.0052 (0.0002)	1000
RP (P)	0.1846	0.0016	0.0400 (0.0009)	0.0603 (0.0013)	0.6490 (0.0151)	0.0052 (0.0002)	1000
FP (W)	0.1694	0.0014	0.0370 (0.0008)	0.0451 (0.0012)	0.7920 (0.0128)	0.0034 (0.0001)	1000
FP (k=10)	0.1420	0.0023	0.0388 (0.0009)	0.0177 (0.0012)	0.9692 (0.0055)	0.0018 (0.0001)	973
FP (k=10000)	0.1688	0.0023	0.0389 (0.0010)	0.0445 (0.0014)	0.9150 (0.0097)	0.0035 (0.0001)	824
Model frailty: Normal							
Cox	0.2638	0.0049	0.0609 (0.0014)	0.1395 (0.0020)	0.4538 (0.0161)	0.0232 (0.0006)	952
Exp	0.1919	0.0040	0.0467 (0.0011)	0.0676 (0.0015)	0.9046 (0.0096)	0.0068 (0.0002)	943
Weibull	0.2062	0.0024	0.0478 (0.0011)	0.0819 (0.0016)	0.6040 (0.0163)	0.0090 (0.0003)	904
Gompertz	0.1846	0.0040	0.0415 (0.0032)	0.0603 (0.0046)	0.9759 (0.0168)	0.0053 (0.0005)	83
RP (3)	0.2820	0.0058	0.0942 (0.0022)	0.1578 (0.0031)	0.3987 (0.0161)	0.0337 (0.0011)	923
RP (5)	0.3051	0.0050	0.0730 (0.0016)	0.1808 (0.0023)	0.2683 (0.0140)	0.0380 (0.0008)	999
RP (9)	0.3082	0.0050	0.0707 (0.0016)	0.1839 (0.0022)	0.2590 (0.0139)	0.0388 (0.0008)	1000
RP (P)	0.3098	0.0051	0.0704 (0.0016)	0.1856 (0.0022)	0.2600 (0.0139)	0.0394 (0.0008)	1000
FP (W)	0.2179	0.0031	0.0508 (0.0012)	0.0936 (0.0016)	0.6012 (0.0157)	0.0113 (0.0003)	978
FP (k=10)	0.1302	0.0039	0.0551 (0.0012)	0.0059 (0.0017)	0.9678 (0.0056)	0.0031 (0.0001)	993
FP (k=10000)	0.2008	0.0044	0.0504 (0.0011)	0.0765 (0.0016)	0.8730 (0.0105)	0.0084 (0.0003)	1000

Table 135: Simulation results for LLE, scenario with 750 clusters of 2 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.1831	0.0017	0.0402 (0.0009)	0.0815 (0.0013)	0.4859 (0.0159)	0.0083 (0.0002)	990
Exp	0.1689	0.0012	0.0374 (0.0008)	0.0673 (0.0012)	0.5210 (0.0158)	0.0059 (0.0002)	1000
Weibull	0.1688	0.0012	0.0374 (0.0008)	0.0673 (0.0012)	0.5180 (0.0158)	0.0059 (0.0002)	1000
Gompertz	—	—	—	—	—	—	0
RP (3)	0.1846	0.0016	0.0410 (0.0009)	0.0831 (0.0013)	0.4450 (0.0157)	0.0086 (0.0002)	1000
RP (5)	0.1850	0.0016	0.0405 (0.0009)	0.0834 (0.0013)	0.4309 (0.0157)	0.0086 (0.0002)	998
RP (9)	0.1856	0.0016	0.0293 (0.0049)	0.0841 (0.0067)	0.4211 (0.1133)	0.0079 (0.0010)	19
RP (P)	0.1838	0.0015	0.0401 (0.0009)	0.0823 (0.0013)	0.4420 (0.0157)	0.0084 (0.0002)	1000
FP (W)	0.1688	0.0013	0.0374 (0.0008)	0.0673 (0.0012)	0.5470 (0.0157)	0.0059 (0.0002)	1000
FP (k=10)	0.1738	0.0013	0.0383 (0.0009)	0.0722 (0.0012)	0.4970 (0.0158)	0.0067 (0.0002)	996
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	0.2666	0.0055	0.0631 (0.0014)	0.1651 (0.0020)	0.3778 (0.0153)	0.0312 (0.0007)	998
Exp	0.2115	0.0025	0.0479 (0.0016)	0.1099 (0.0023)	0.3905 (0.0232)	0.0144 (0.0005)	443
Weibull	0.2104	0.0026	0.0493 (0.0018)	0.1088 (0.0025)	0.4175 (0.0250)	0.0143 (0.0006)	388
Gompertz	—	—	—	—	—	—	0
RP (3)	0.2921	0.0051	0.0741 (0.0017)	0.1906 (0.0023)	0.2380 (0.0135)	0.0418 (0.0009)	1000
RP (5)	0.3036	0.0054	0.0752 (0.0017)	0.2020 (0.0024)	0.1962 (0.0126)	0.0465 (0.0010)	999
RP (9)	0.1026	0.0093	0.0823 (0.0027)	0.0010 (0.0039)	0.9712 (0.0079)	0.0068 (0.0005)	451
RP (P)	0.3075	0.0055	0.0763 (0.0017)	0.2060 (0.0024)	0.1960 (0.0126)	0.0482 (0.0010)	1000
FP (W)	0.2307	0.0034	0.0544 (0.0012)	0.1292 (0.0017)	0.3951 (0.0157)	0.0196 (0.0005)	972
FP (k=10)	0.2129	0.0046	0.0621 (0.0014)	0.1113 (0.0020)	0.6326 (0.0153)	0.0163 (0.0005)	999
FP (k=10000)	0.2505	0.0032	0.0594 (0.0013)	0.1490 (0.0019)	0.2608 (0.0139)	0.0257 (0.0006)	997

Table 136: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6766	0.0031	0.0576 (0.0013)	0.0015 (0.0018)	0.9452 (0.0073)	0.0033 (0.0001)	985
Exp	0.6767	0.0034	0.0576 (0.0013)	0.0016 (0.0018)	0.9500 (0.0069)	0.0033 (0.0001)	1000
Weibull	0.6769	0.0034	0.0576 (0.0013)	0.0018 (0.0018)	0.9490 (0.0070)	0.0033 (0.0001)	1000
Gompertz	0.6759	0.0034	0.0580 (0.0018)	0.0008 (0.0025)	0.9507 (0.0092)	0.0034 (0.0002)	548
RP (3)	0.6768	0.0034	0.0576 (0.0013)	0.0017 (0.0018)	0.9510 (0.0068)	0.0033 (0.0001)	999
RP (5)	0.6768	0.0034	0.0576 (0.0013)	0.0017 (0.0018)	0.9510 (0.0068)	0.0033 (0.0001)	1000
RP (9)	0.6768	0.0034	0.0576 (0.0013)	0.0017 (0.0018)	0.9510 (0.0068)	0.0033 (0.0001)	1000
RP (P)	0.6768	0.0034	0.0575 (0.0013)	0.0017 (0.0018)	0.9500 (0.0069)	0.0033 (0.0001)	1000
FP (W)	0.6769	0.0031	0.0576 (0.0013)	0.0018 (0.0018)	0.9419 (0.0074)	0.0033 (0.0001)	999
FP (k=10)	0.6755	0.0031	0.0576 (0.0013)	0.0004 (0.0018)	0.9450 (0.0072)	0.0033 (0.0001)	1000
FP (k=10000)	0.6762	0.0030	0.0576 (0.0013)	0.0011 (0.0018)	0.9400 (0.0075)	0.0033 (0.0001)	1000
Model frailty: Normal							
Cox	0.6727	0.0031	0.0581 (0.0013)	-0.0024 (0.0018)	0.9419 (0.0074)	0.0034 (0.0001)	999
Exp	0.6755	0.0034	0.0582 (0.0013)	0.0004 (0.0018)	0.9480 (0.0070)	0.0034 (0.0001)	1000
Weibull	0.6758	0.0034	0.0581 (0.0013)	0.0007 (0.0018)	0.9460 (0.0071)	0.0034 (0.0001)	1000
Gompertz	0.6762	0.0034	0.0585 (0.0017)	0.0011 (0.0025)	0.9505 (0.0091)	0.0034 (0.0002)	566
RP (3)	0.6757	0.0034	0.0581 (0.0013)	0.0006 (0.0018)	0.9460 (0.0071)	0.0034 (0.0001)	1000
RP (5)	0.6756	0.0034	0.0582 (0.0013)	0.0005 (0.0018)	0.9470 (0.0071)	0.0034 (0.0001)	1000
RP (9)	0.6756	0.0034	0.0581 (0.0013)	0.0005 (0.0018)	0.9460 (0.0071)	0.0034 (0.0001)	1000
RP (P)	0.6757	0.0034	0.0581 (0.0013)	0.0006 (0.0018)	0.9470 (0.0071)	0.0034 (0.0001)	1000
FP (W)	0.5317	0.0022	0.1708 (0.0045)	-0.1434 (0.0063)	0.5082 (0.0185)	0.0497 (0.0027)	732
FP (k=10)	0.6523	0.0029	0.0681 (0.0015)	-0.0228 (0.0022)	0.8616 (0.0111)	0.0052 (0.0003)	968
FP (k=10000)	0.6540	0.0026	0.0607 (0.0014)	-0.0211 (0.0019)	0.8816 (0.0103)	0.0041 (0.0002)	988

Table 137: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6990	0.0035	0.0627 (0.0014)	0.0001 (0.0020)	0.9328 (0.0080)	0.0039 (0.0002)	982
Exp	0.7207	0.0039	0.0653 (0.0015)	0.0218 (0.0021)	0.9200 (0.0086)	0.0047 (0.0002)	1000
Weibull	0.7001	0.0042	0.0623 (0.0014)	0.0012 (0.0020)	0.9560 (0.0065)	0.0039 (0.0002)	1000
Gompertz	0.7200	0.0039	0.0644 (0.0022)	0.0211 (0.0030)	0.9241 (0.0125)	0.0046 (0.0003)	448
RP (3)	0.6998	0.0042	0.0623 (0.0014)	0.0009 (0.0020)	0.9570 (0.0064)	0.0039 (0.0002)	1000
RP (5)	0.6997	0.0042	0.0624 (0.0014)	0.0008 (0.0020)	0.9570 (0.0064)	0.0039 (0.0002)	1000
RP (9)	0.6997	0.0042	0.0624 (0.0014)	0.0008 (0.0020)	0.9570 (0.0064)	0.0039 (0.0002)	1000
RP (P)	0.6999	0.0042	0.0623 (0.0014)	0.0009 (0.0020)	0.9570 (0.0064)	0.0039 (0.0002)	1000
FP (W)	0.7000	0.0035	0.0622 (0.0014)	0.0011 (0.0020)	0.9389 (0.0076)	0.0039 (0.0002)	998
FP (k=10)	0.6877	0.0034	0.0632 (0.0014)	-0.0113 (0.0020)	0.9219 (0.0085)	0.0041 (0.0002)	999
FP (k=10000)	0.6906	0.0033	0.0634 (0.0014)	-0.0083 (0.0020)	0.9189 (0.0086)	0.0041 (0.0002)	999
Model frailty: Normal							
Cox	0.6935	0.0035	0.0630 (0.0014)	-0.0055 (0.0020)	0.9320 (0.0080)	0.0040 (0.0002)	1000
Exp	0.7175	0.0038	0.0659 (0.0015)	0.0185 (0.0021)	0.9210 (0.0085)	0.0047 (0.0002)	1000
Weibull	0.6964	0.0041	0.0629 (0.0014)	-0.0025 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
Gompertz	0.7157	0.0038	0.0659 (0.0022)	0.0168 (0.0032)	0.9279 (0.0125)	0.0046 (0.0003)	430
RP (3)	0.6960	0.0041	0.0629 (0.0014)	-0.0029 (0.0020)	0.9550 (0.0066)	0.0040 (0.0002)	1000
RP (5)	0.6960	0.0041	0.0629 (0.0014)	-0.0030 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (9)	0.6960	0.0041	0.0629 (0.0014)	-0.0030 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (P)	0.6961	0.0041	0.0629 (0.0014)	-0.0028 (0.0020)	0.9520 (0.0068)	0.0040 (0.0002)	1000
FP (W)	0.5711	0.0026	0.1703 (0.0042)	-0.1278 (0.0060)	0.5702 (0.0174)	0.0453 (0.0025)	812
FP (k=10)	0.6702	0.0033	0.0734 (0.0017)	-0.0288 (0.0023)	0.8478 (0.0115)	0.0062 (0.0003)	979
FP (k=10000)	0.6642	0.0029	0.0662 (0.0015)	-0.0347 (0.0021)	0.8227 (0.0122)	0.0056 (0.0002)	987

Table 138: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6161	0.0025	0.0494 (0.0011)	0.0036 (0.0016)	0.9459 (0.0072)	0.0024 (0.0001)	980
Exp	0.5709	0.0029	0.0458 (0.0010)	-0.0416 (0.0014)	0.9100 (0.0090)	0.0038 (0.0002)	1000
Weibull	0.5958	0.0026	0.0480 (0.0011)	-0.0166 (0.0015)	0.9460 (0.0071)	0.0026 (0.0001)	1000
Gompertz	0.6156	0.0025	0.0499 (0.0011)	0.0031 (0.0016)	0.9419 (0.0074)	0.0025 (0.0001)	999
RP (3)	0.6138	0.0025	0.0495 (0.0011)	0.0013 (0.0016)	0.9430 (0.0073)	0.0025 (0.0001)	1000
RP (5)	0.6153	0.0025	0.0497 (0.0011)	0.0028 (0.0016)	0.9410 (0.0075)	0.0025 (0.0001)	1000
RP (9)	0.6158	0.0025	0.0497 (0.0011)	0.0033 (0.0016)	0.9420 (0.0074)	0.0025 (0.0001)	1000
RP (P)	0.6121	0.0025	0.0494 (0.0011)	-0.0004 (0.0016)	0.9440 (0.0073)	0.0024 (0.0001)	1000
FP (W)	0.5959	0.0026	0.0480 (0.0011)	-0.0166 (0.0015)	0.9440 (0.0073)	0.0026 (0.0001)	1000
FP (k=10)	0.6163	0.0025	0.0497 (0.0011)	0.0038 (0.0016)	0.9430 (0.0073)	0.0025 (0.0001)	1000
FP (k=10000)	0.6122	0.0024	0.0493 (0.0011)	-0.0003 (0.0016)	0.9450 (0.0072)	0.0024 (0.0001)	1000
Model frailty: Normal							
Cox	0.6152	0.0025	0.0494 (0.0011)	0.0027 (0.0016)	0.9440 (0.0073)	0.0024 (0.0001)	1000
Exp	0.5713	0.0029	0.0458 (0.0010)	-0.0412 (0.0014)	0.9170 (0.0087)	0.0038 (0.0002)	1000
Weibull	0.5978	0.0027	0.0478 (0.0011)	-0.0147 (0.0015)	0.9480 (0.0070)	0.0025 (0.0001)	1000
Gompertz	0.6176	0.0026	0.0497 (0.0011)	0.0051 (0.0016)	0.9530 (0.0067)	0.0025 (0.0001)	999
RP (3)	0.6158	0.0026	0.0493 (0.0011)	0.0034 (0.0016)	0.9510 (0.0068)	0.0024 (0.0001)	1000
RP (5)	0.6173	0.0026	0.0495 (0.0011)	0.0048 (0.0016)	0.9500 (0.0069)	0.0025 (0.0001)	1000
RP (9)	0.6177	0.0026	0.0495 (0.0011)	0.0053 (0.0016)	0.9510 (0.0068)	0.0025 (0.0001)	1000
RP (P)	0.6142	0.0026	0.0492 (0.0011)	0.0017 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
FP (W)	0.4283	0.0015	0.1651 (0.0046)	-0.1842 (0.0064)	0.3918 (0.0191)	0.0611 (0.0028)	656
FP (k=10)	0.6076	0.0024	0.0569 (0.0013)	-0.0049 (0.0018)	0.8960 (0.0098)	0.0033 (0.0002)	962
FP (k=10000)	0.6130	0.0020	0.0514 (0.0012)	0.0005 (0.0016)	0.9115 (0.0091)	0.0026 (0.0001)	983

Table 139: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5914	0.0024	0.0485 (0.0011)	0.0026 (0.0015)	0.9462 (0.0072)	0.0024 (0.0001)	986
Exp	0.5470	0.0030	0.0456 (0.0010)	-0.0417 (0.0014)	0.9270 (0.0082)	0.0038 (0.0001)	1000
Weibull	0.6096	0.0023	0.0501 (0.0011)	0.0208 (0.0016)	0.9200 (0.0086)	0.0029 (0.0001)	1000
Gompertz	0.6166	0.0025	0.0513 (0.0011)	0.0278 (0.0016)	0.9130 (0.0089)	0.0034 (0.0002)	1000
RP (3)	0.5880	0.0024	0.0481 (0.0011)	-0.0007 (0.0015)	0.9489 (0.0070)	0.0023 (0.0001)	999
RP (5)	0.5908	0.0024	0.0484 (0.0011)	0.0020 (0.0015)	0.9480 (0.0070)	0.0023 (0.0001)	1000
RP (9)	0.5910	0.0024	0.0484 (0.0011)	0.0023 (0.0015)	0.9480 (0.0070)	0.0023 (0.0001)	1000
RP (P)	0.5912	0.0024	0.0484 (0.0011)	0.0024 (0.0015)	0.9480 (0.0070)	0.0023 (0.0001)	1000
FP (W)	0.6095	0.0023	0.0502 (0.0011)	0.0208 (0.0016)	0.9219 (0.0085)	0.0029 (0.0001)	999
FP (k=10)	0.5928	0.0024	0.0483 (0.0011)	0.0040 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
FP (k=10000)	0.4198	0.0013	0.2657 (0.0059)	-0.1690 (0.0084)	0.5260 (0.0158)	0.0991 (0.0040)	1000
Model frailty: Normal							
Cox	0.5901	0.0023	0.0482 (0.0011)	0.0013 (0.0015)	0.9460 (0.0071)	0.0023 (0.0001)	1000
Exp	0.5458	0.0030	0.0457 (0.0010)	-0.0429 (0.0014)	0.9220 (0.0085)	0.0039 (0.0001)	1000
Weibull	0.6116	0.0024	0.0500 (0.0011)	0.0228 (0.0016)	0.9250 (0.0083)	0.0030 (0.0001)	1000
Gompertz	0.6169	0.0025	0.0512 (0.0011)	0.0282 (0.0016)	0.9158 (0.0088)	0.0034 (0.0002)	998
RP (3)	0.5900	0.0024	0.0479 (0.0011)	0.0013 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
RP (5)	0.5925	0.0025	0.0483 (0.0011)	0.0038 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
RP (9)	0.5928	0.0025	0.0483 (0.0011)	0.0041 (0.0015)	0.9510 (0.0068)	0.0023 (0.0001)	1000
RP (P)	0.5930	0.0025	0.0483 (0.0011)	0.0043 (0.0015)	0.9500 (0.0069)	0.0023 (0.0001)	1000
FP (W)	0.4885	0.0016	0.1498 (0.0041)	-0.1002 (0.0058)	0.5347 (0.0194)	0.0324 (0.0019)	662
FP (k=10)	0.5770	0.0022	0.0567 (0.0013)	-0.0118 (0.0018)	0.8943 (0.0099)	0.0034 (0.0002)	965
FP (k=10000)	0.5796	0.0017	0.0631 (0.0014)	-0.0091 (0.0020)	0.7878 (0.0130)	0.0041 (0.0002)	985

Table 140: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6871	0.0033	0.0591 (0.0013)	0.0007 (0.0019)	0.9530 (0.0068)	0.0035 (0.0002)	979
Exp	0.7073	0.0036	0.0615 (0.0014)	0.0210 (0.0019)	0.9270 (0.0082)	0.0042 (0.0002)	1000
Weibull	0.6961	0.0037	0.0602 (0.0013)	0.0097 (0.0019)	0.9580 (0.0063)	0.0037 (0.0002)	1000
Gompertz	0.7105	0.0036	0.0596 (0.0019)	0.0241 (0.0027)	0.9296 (0.0116)	0.0041 (0.0002)	483
RP (3)	0.6900	0.0037	0.0594 (0.0013)	0.0036 (0.0019)	0.9580 (0.0063)	0.0035 (0.0002)	1000
RP (5)	0.6883	0.0037	0.0592 (0.0013)	0.0019 (0.0019)	0.9570 (0.0064)	0.0035 (0.0002)	1000
RP (9)	0.6880	0.0037	0.0591 (0.0013)	0.0016 (0.0019)	0.9570 (0.0064)	0.0035 (0.0002)	1000
RP (P)	0.6892	0.0037	0.0593 (0.0013)	0.0028 (0.0019)	0.9570 (0.0064)	0.0035 (0.0002)	1000
FP (W)	0.6960	0.0033	0.0602 (0.0013)	0.0096 (0.0019)	0.9439 (0.0073)	0.0037 (0.0002)	998
FP (k=10)	0.6846	0.0033	0.0593 (0.0013)	-0.0017 (0.0019)	0.9480 (0.0070)	0.0035 (0.0002)	1000
FP (k=10000)	0.6869	0.0033	0.0593 (0.0013)	0.0005 (0.0019)	0.9490 (0.0070)	0.0035 (0.0002)	1000
Model frailty: Normal							
Cox	0.6829	0.0033	0.0594 (0.0013)	-0.0035 (0.0019)	0.9380 (0.0076)	0.0035 (0.0002)	1000
Exp	0.7053	0.0035	0.0617 (0.0014)	0.0189 (0.0020)	0.9280 (0.0082)	0.0042 (0.0002)	1000
Weibull	0.6936	0.0037	0.0605 (0.0014)	0.0072 (0.0019)	0.9530 (0.0067)	0.0037 (0.0002)	1000
Gompertz	0.7070	0.0035	0.0599 (0.0019)	0.0206 (0.0027)	0.9402 (0.0108)	0.0040 (0.0003)	485
RP (3)	0.6877	0.0037	0.0597 (0.0013)	0.0014 (0.0019)	0.9540 (0.0066)	0.0036 (0.0002)	1000
RP (5)	0.6863	0.0037	0.0595 (0.0013)	-0.0001 (0.0019)	0.9530 (0.0067)	0.0035 (0.0002)	1000
RP (9)	0.6859	0.0037	0.0594 (0.0013)	-0.0004 (0.0019)	0.9530 (0.0067)	0.0035 (0.0002)	1000
RP (P)	0.6871	0.0037	0.0596 (0.0013)	0.0007 (0.0019)	0.9540 (0.0066)	0.0036 (0.0002)	1000
FP (W)	0.5417	0.0023	0.1789 (0.0045)	-0.1447 (0.0064)	0.5204 (0.0178)	0.0529 (0.0028)	784
FP (k=10)	0.6615	0.0031	0.0701 (0.0016)	-0.0249 (0.0022)	0.8686 (0.0108)	0.0055 (0.0003)	974
FP (k=10000)	0.6649	0.0028	0.0625 (0.0014)	-0.0215 (0.0020)	0.8794 (0.0104)	0.0044 (0.0002)	987

Table 141: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6743	0.0031	0.0553 (0.0013)	-0.0022 (0.0018)	0.9558 (0.0066)	0.0031 (0.0001)	973
Exp	0.6739	0.0032	0.0551 (0.0012)	-0.0026 (0.0017)	0.9610 (0.0061)	0.0030 (0.0001)	1000
Weibull	0.6739	0.0032	0.0550 (0.0012)	-0.0025 (0.0017)	0.9590 (0.0063)	0.0030 (0.0001)	1000
Gompertz	0.6750	0.0032	0.0539 (0.0017)	-0.0015 (0.0023)	0.9659 (0.0079)	0.0029 (0.0002)	528
RP (3)	0.6738	0.0032	0.0552 (0.0012)	-0.0026 (0.0017)	0.9599 (0.0062)	0.0030 (0.0001)	998
RP (5)	0.6738	0.0032	0.0551 (0.0012)	-0.0026 (0.0017)	0.9590 (0.0063)	0.0030 (0.0001)	1000
RP (9)	0.6738	0.0032	0.0551 (0.0012)	-0.0027 (0.0017)	0.9590 (0.0063)	0.0030 (0.0001)	1000
RP (P)	0.6739	0.0032	0.0551 (0.0012)	-0.0026 (0.0017)	0.9580 (0.0063)	0.0030 (0.0001)	1000
FP (W)	0.6740	0.0031	0.0550 (0.0012)	-0.0024 (0.0017)	0.9530 (0.0067)	0.0030 (0.0001)	999
FP (k=10)	0.6733	0.0031	0.0551 (0.0012)	-0.0032 (0.0017)	0.9550 (0.0066)	0.0030 (0.0001)	1000
FP (k=10000)	0.6735	0.0030	0.0550 (0.0012)	-0.0029 (0.0017)	0.9480 (0.0070)	0.0030 (0.0001)	1000
Model frailty: Normal							
Cox	0.6738	0.0031	0.0548 (0.0012)	-0.0026 (0.0017)	0.9560 (0.0065)	0.0030 (0.0001)	1000
Exp	0.6769	0.0033	0.0547 (0.0012)	0.0004 (0.0017)	0.9630 (0.0060)	0.0030 (0.0001)	1000
Weibull	0.6770	0.0033	0.0547 (0.0012)	0.0006 (0.0017)	0.9620 (0.0060)	0.0030 (0.0001)	1000
Gompertz	0.6762	0.0033	0.0540 (0.0016)	-0.0002 (0.0023)	0.9638 (0.0079)	0.0029 (0.0002)	553
RP (3)	0.6769	0.0033	0.0548 (0.0012)	0.0005 (0.0017)	0.9640 (0.0059)	0.0030 (0.0001)	1000
RP (5)	0.6768	0.0033	0.0548 (0.0012)	0.0004 (0.0017)	0.9640 (0.0059)	0.0030 (0.0001)	1000
RP (9)	0.6768	0.0033	0.0548 (0.0012)	0.0004 (0.0017)	0.9640 (0.0059)	0.0030 (0.0001)	1000
RP (P)	0.6769	0.0033	0.0548 (0.0012)	0.0005 (0.0017)	0.9620 (0.0060)	0.0030 (0.0001)	1000
FP (W)	0.5617	0.0023	0.1493 (0.0039)	-0.1148 (0.0055)	0.5830 (0.0183)	0.0354 (0.0022)	729
FP (k=10)	0.6568	0.0029	0.0640 (0.0015)	-0.0196 (0.0021)	0.8948 (0.0099)	0.0045 (0.0003)	960
FP (k=10000)	0.6621	0.0026	0.0552 (0.0012)	-0.0144 (0.0018)	0.9108 (0.0091)	0.0033 (0.0001)	986

Table 142: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7124	0.0036	0.0632 (0.0014)	0.0019 (0.0020)	0.9391 (0.0076)	0.0040 (0.0002)	985
Exp	0.7372	0.0037	0.0658 (0.0015)	0.0268 (0.0021)	0.9000 (0.0095)	0.0050 (0.0002)	1000
Weibull	0.7136	0.0040	0.0629 (0.0014)	0.0032 (0.0020)	0.9490 (0.0070)	0.0040 (0.0002)	1000
Gompertz	0.7371	0.0037	0.0674 (0.0024)	0.0266 (0.0033)	0.8870 (0.0157)	0.0052 (0.0003)	407
RP (3)	0.7133	0.0040	0.0630 (0.0014)	0.0028 (0.0020)	0.9520 (0.0068)	0.0040 (0.0002)	999
RP (5)	0.7131	0.0040	0.0630 (0.0014)	0.0027 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (9)	0.7131	0.0040	0.0630 (0.0014)	0.0026 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (P)	0.7133	0.0040	0.0630 (0.0014)	0.0029 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
FP (W)	0.7136	0.0036	0.0629 (0.0014)	0.0032 (0.0020)	0.9400 (0.0075)	0.0040 (0.0002)	1000
FP (k=10)	0.7039	0.0035	0.0632 (0.0014)	-0.0066 (0.0020)	0.9290 (0.0081)	0.0040 (0.0002)	1000
FP (k=10000)	0.7074	0.0033	0.0634 (0.0014)	-0.0030 (0.0020)	0.9260 (0.0083)	0.0040 (0.0002)	1000
Model frailty: Normal							
Cox	0.7108	0.0036	0.0629 (0.0014)	0.0003 (0.0020)	0.9400 (0.0075)	0.0039 (0.0002)	1000
Exp	0.7396	0.0036	0.0656 (0.0015)	0.0292 (0.0021)	0.8920 (0.0098)	0.0052 (0.0002)	1000
Weibull	0.7140	0.0040	0.0629 (0.0014)	0.0036 (0.0020)	0.9489 (0.0070)	0.0040 (0.0002)	999
Gompertz	0.7392	0.0036	0.0646 (0.0022)	0.0288 (0.0031)	0.9028 (0.0143)	0.0050 (0.0003)	432
RP (3)	0.7137	0.0040	0.0629 (0.0014)	0.0032 (0.0020)	0.9480 (0.0070)	0.0040 (0.0002)	1000
RP (5)	0.7135	0.0040	0.0630 (0.0014)	0.0031 (0.0020)	0.9480 (0.0070)	0.0040 (0.0002)	1000
RP (9)	0.7135	0.0040	0.0630 (0.0014)	0.0030 (0.0020)	0.9470 (0.0071)	0.0040 (0.0002)	1000
RP (P)	0.7137	0.0040	0.0630 (0.0014)	0.0033 (0.0020)	0.9490 (0.0070)	0.0040 (0.0002)	1000
FP (W)	0.5693	0.0026	0.1785 (0.0044)	-0.1412 (0.0063)	0.5396 (0.0175)	0.0518 (0.0028)	808
FP (k=10)	0.6871	0.0034	0.0729 (0.0017)	-0.0233 (0.0023)	0.8671 (0.0109)	0.0058 (0.0003)	971
FP (k=10000)	0.6825	0.0029	0.0670 (0.0015)	-0.0279 (0.0021)	0.8540 (0.0112)	0.0053 (0.0002)	993

Table 143: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5951	0.0024	0.0515 (0.0012)	-0.0064 (0.0016)	0.9369 (0.0078)	0.0027 (0.0001)	983
Exp	0.5518	0.0027	0.0467 (0.0010)	-0.0496 (0.0015)	0.8740 (0.0105)	0.0046 (0.0002)	1000
Weibull	0.5745	0.0025	0.0493 (0.0011)	-0.0269 (0.0016)	0.9100 (0.0090)	0.0031 (0.0001)	1000
Gompertz	0.5943	0.0024	0.0517 (0.0012)	-0.0071 (0.0016)	0.9398 (0.0075)	0.0027 (0.0001)	997
RP (3)	0.5919	0.0024	0.0512 (0.0011)	-0.0095 (0.0016)	0.9370 (0.0077)	0.0027 (0.0001)	1000
RP (5)	0.5936	0.0024	0.0514 (0.0011)	-0.0078 (0.0016)	0.9410 (0.0075)	0.0027 (0.0001)	1000
RP (9)	0.5942	0.0024	0.0515 (0.0012)	-0.0072 (0.0016)	0.9400 (0.0075)	0.0027 (0.0001)	1000
RP (P)	0.5905	0.0024	0.0510 (0.0011)	-0.0109 (0.0016)	0.9380 (0.0076)	0.0027 (0.0001)	1000
FP (W)	0.5745	0.0025	0.0489 (0.0011)	-0.0270 (0.0015)	0.9138 (0.0089)	0.0031 (0.0001)	998
FP (k=10)	0.5952	0.0024	0.0514 (0.0011)	-0.0063 (0.0016)	0.9390 (0.0076)	0.0027 (0.0001)	1000
FP (k=10000)	0.5911	0.0023	0.0508 (0.0011)	-0.0104 (0.0016)	0.9300 (0.0081)	0.0027 (0.0001)	1000
Model frailty: Normal							
Cox	0.5970	0.0024	0.0510 (0.0011)	-0.0045 (0.0016)	0.9420 (0.0074)	0.0026 (0.0001)	1000
Exp	0.5545	0.0028	0.0466 (0.0010)	-0.0469 (0.0015)	0.8819 (0.0102)	0.0044 (0.0002)	999
Weibull	0.5793	0.0026	0.0490 (0.0011)	-0.0221 (0.0015)	0.9300 (0.0081)	0.0029 (0.0001)	1000
Gompertz	0.5993	0.0025	0.0514 (0.0012)	-0.0022 (0.0016)	0.9447 (0.0072)	0.0026 (0.0001)	995
RP (3)	0.5969	0.0025	0.0509 (0.0011)	-0.0046 (0.0016)	0.9450 (0.0072)	0.0026 (0.0001)	1000
RP (5)	0.5985	0.0025	0.0510 (0.0011)	-0.0029 (0.0016)	0.9470 (0.0071)	0.0026 (0.0001)	1000
RP (9)	0.5991	0.0025	0.0511 (0.0011)	-0.0023 (0.0016)	0.9450 (0.0072)	0.0026 (0.0001)	1000
RP (P)	0.5954	0.0025	0.0507 (0.0011)	-0.0060 (0.0016)	0.9440 (0.0073)	0.0026 (0.0001)	1000
FP (W)	0.4180	0.0015	0.1583 (0.0044)	-0.1834 (0.0062)	0.3599 (0.0188)	0.0587 (0.0027)	653
FP (k=10)	0.5943	0.0023	0.0598 (0.0014)	-0.0072 (0.0019)	0.8840 (0.0104)	0.0036 (0.0002)	957
FP (k=10000)	0.6072	0.0020	0.0520 (0.0012)	0.0058 (0.0017)	0.9044 (0.0094)	0.0027 (0.0001)	983

Table 144: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5758	0.0023	0.0507 (0.0011)	-0.0032 (0.0016)	0.9376 (0.0077)	0.0026 (0.0001)	978
Exp	0.5313	0.0029	0.0472 (0.0011)	-0.0477 (0.0015)	0.8850 (0.0101)	0.0045 (0.0002)	1000
Weibull	0.5939	0.0022	0.0523 (0.0012)	0.0149 (0.0017)	0.9070 (0.0092)	0.0030 (0.0001)	1000
Gompertz	0.6028	0.0024	0.0531 (0.0012)	0.0239 (0.0017)	0.9020 (0.0094)	0.0034 (0.0001)	1000
RP (3)	0.5711	0.0023	0.0505 (0.0011)	-0.0079 (0.0016)	0.9370 (0.0077)	0.0026 (0.0001)	1000
RP (5)	0.5743	0.0023	0.0508 (0.0011)	-0.0047 (0.0016)	0.9367 (0.0077)	0.0026 (0.0001)	996
RP (9)	0.5747	0.0023	0.0507 (0.0011)	-0.0043 (0.0016)	0.9370 (0.0077)	0.0026 (0.0001)	1000
RP (P)	0.5748	0.0023	0.0507 (0.0011)	-0.0042 (0.0016)	0.9360 (0.0077)	0.0026 (0.0001)	1000
FP (W)	0.5938	0.0022	0.0523 (0.0012)	0.0149 (0.0017)	0.9039 (0.0093)	0.0030 (0.0001)	999
FP (k=10)	0.5805	0.0023	0.0496 (0.0011)	0.0015 (0.0016)	0.9370 (0.0077)	0.0025 (0.0001)	1000
FP (k=10000)	0.6097	0.0020	0.0568 (0.0014)	0.0307 (0.0020)	0.8265 (0.0136)	0.0042 (0.0002)	778
Model frailty: Normal							
Cox	0.5770	0.0023	0.0500 (0.0011)	-0.0020 (0.0016)	0.9360 (0.0077)	0.0025 (0.0001)	1000
Exp	0.5318	0.0029	0.0471 (0.0011)	-0.0472 (0.0015)	0.8880 (0.0100)	0.0044 (0.0002)	1000
Weibull	0.5988	0.0023	0.0517 (0.0012)	0.0198 (0.0016)	0.9070 (0.0092)	0.0031 (0.0001)	1000
Gompertz	0.6056	0.0024	0.0527 (0.0012)	0.0266 (0.0017)	0.8990 (0.0095)	0.0035 (0.0001)	1000
RP (3)	0.5760	0.0024	0.0499 (0.0011)	-0.0030 (0.0016)	0.9430 (0.0073)	0.0025 (0.0001)	1000
RP (5)	0.5789	0.0024	0.0502 (0.0011)	-0.0001 (0.0016)	0.9390 (0.0076)	0.0025 (0.0001)	1000
RP (9)	0.5794	0.0024	0.0501 (0.0011)	0.0004 (0.0016)	0.9430 (0.0073)	0.0025 (0.0001)	1000
RP (P)	0.5795	0.0024	0.0502 (0.0011)	0.0005 (0.0016)	0.9400 (0.0075)	0.0025 (0.0001)	1000
FP (W)	0.4621	0.0014	0.1562 (0.0046)	-0.1169 (0.0065)	0.4881 (0.0206)	0.0380 (0.0021)	586
FP (k=10)	0.5711	0.0022	0.0551 (0.0013)	-0.0079 (0.0018)	0.8952 (0.0099)	0.0031 (0.0002)	964
FP (k=10000)	0.5874	0.0016	0.0585 (0.0013)	0.0084 (0.0019)	0.8119 (0.0124)	0.0035 (0.0002)	989

Table 145: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6882	0.0033	0.0576 (0.0013)	-0.0018 (0.0018)	0.9524 (0.0068)	0.0033 (0.0002)	988
Exp	0.7091	0.0034	0.0599 (0.0013)	0.0192 (0.0019)	0.9390 (0.0076)	0.0039 (0.0002)	1000
Weibull	0.6975	0.0036	0.0586 (0.0013)	0.0076 (0.0019)	0.9520 (0.0068)	0.0035 (0.0002)	1000
Gompertz	0.7085	0.0034	0.0595 (0.0019)	0.0185 (0.0027)	0.9451 (0.0105)	0.0039 (0.0002)	474
RP (3)	0.6909	0.0036	0.0577 (0.0013)	0.0010 (0.0018)	0.9589 (0.0063)	0.0033 (0.0002)	998
RP (5)	0.6890	0.0035	0.0577 (0.0013)	-0.0009 (0.0018)	0.9590 (0.0063)	0.0033 (0.0002)	1000
RP (9)	0.6885	0.0035	0.0577 (0.0013)	-0.0014 (0.0018)	0.9590 (0.0063)	0.0033 (0.0002)	1000
RP (P)	0.6900	0.0035	0.0578 (0.0013)	0.0000 (0.0018)	0.9590 (0.0063)	0.0033 (0.0002)	1000
FP (W)	0.6975	0.0033	0.0586 (0.0013)	0.0076 (0.0019)	0.9450 (0.0072)	0.0035 (0.0002)	1000
FP (k=10)	0.6867	0.0033	0.0575 (0.0013)	-0.0032 (0.0018)	0.9510 (0.0068)	0.0033 (0.0002)	1000
FP (k=10000)	0.6885	0.0032	0.0576 (0.0013)	-0.0015 (0.0018)	0.9490 (0.0070)	0.0033 (0.0002)	1000
Model frailty: Normal							
Cox	0.6879	0.0033	0.0573 (0.0013)	-0.0020 (0.0018)	0.9500 (0.0069)	0.0033 (0.0001)	1000
Exp	0.7124	0.0034	0.0594 (0.0013)	0.0224 (0.0019)	0.9359 (0.0078)	0.0040 (0.0002)	998
Weibull	0.6997	0.0036	0.0583 (0.0013)	0.0098 (0.0018)	0.9570 (0.0064)	0.0035 (0.0002)	1000
Gompertz	0.7108	0.0034	0.0589 (0.0019)	0.0209 (0.0027)	0.9474 (0.0102)	0.0039 (0.0002)	475
RP (3)	0.6936	0.0036	0.0575 (0.0013)	0.0036 (0.0018)	0.9570 (0.0064)	0.0033 (0.0001)	1000
RP (5)	0.6917	0.0036	0.0574 (0.0013)	0.0017 (0.0018)	0.9580 (0.0063)	0.0033 (0.0001)	1000
RP (9)	0.6911	0.0036	0.0573 (0.0013)	0.0012 (0.0018)	0.9580 (0.0063)	0.0033 (0.0001)	1000
RP (P)	0.6925	0.0036	0.0575 (0.0013)	0.0026 (0.0018)	0.9570 (0.0064)	0.0033 (0.0001)	1000
FP (W)	0.5572	0.0024	0.1812 (0.0046)	-0.1328 (0.0065)	0.5574 (0.0178)	0.0504 (0.0028)	775
FP (k=10)	0.6703	0.0032	0.0649 (0.0015)	-0.0196 (0.0021)	0.9027 (0.0095)	0.0046 (0.0002)	976
FP (k=10000)	0.6748	0.0029	0.0581 (0.0013)	-0.0152 (0.0019)	0.9133 (0.0090)	0.0036 (0.0002)	980

Table 146: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4347	0.0017	0.0440 (0.0010)	0.0692 (0.0014)	0.6297 (0.0153)	0.0067 (0.0002)	991
Exp	0.4317	0.0031	0.0439 (0.0010)	0.0663 (0.0014)	0.8700 (0.0106)	0.0063 (0.0002)	1000
Weibull	0.4318	0.0031	0.0439 (0.0010)	0.0664 (0.0014)	0.8680 (0.0107)	0.0063 (0.0002)	1000
Gompertz	0.4355	0.0031	0.0444 (0.0016)	0.0700 (0.0022)	0.8532 (0.0176)	0.0069 (0.0004)	402
RP (3)	0.4316	0.0031	0.0440 (0.0010)	0.0662 (0.0014)	0.8680 (0.0107)	0.0063 (0.0002)	1000
RP (5)	0.4318	0.0031	0.0440 (0.0010)	0.0664 (0.0014)	0.8680 (0.0107)	0.0063 (0.0002)	1000
RP (9)	0.4318	0.0031	0.0440 (0.0010)	0.0664 (0.0014)	0.8670 (0.0107)	0.0063 (0.0002)	1000
RP (P)	0.4319	0.0031	0.0440 (0.0010)	0.0664 (0.0014)	0.8660 (0.0108)	0.0063 (0.0002)	1000
FP (W)	0.4318	0.0017	0.0439 (0.0010)	0.0664 (0.0014)	0.6480 (0.0151)	0.0063 (0.0002)	1000
FP (k=10)	0.4348	0.0017	0.0438 (0.0010)	0.0694 (0.0014)	0.6250 (0.0153)	0.0067 (0.0002)	1000
FP (k=10000)	0.4370	0.0017	0.0435 (0.0010)	0.0716 (0.0014)	0.5942 (0.0155)	0.0070 (0.0002)	998
Model frailty: Normal							
Cox	0.4486	0.0017	0.0433 (0.0010)	0.0831 (0.0014)	0.4615 (0.0158)	0.0088 (0.0002)	999
Exp	0.4572	0.0034	0.0435 (0.0010)	0.0918 (0.0014)	0.7347 (0.0140)	0.0103 (0.0003)	995
Weibull	0.4574	0.0034	0.0438 (0.0010)	0.0920 (0.0014)	0.7397 (0.0139)	0.0104 (0.0003)	995
Gompertz	0.4565	0.0034	0.0451 (0.0016)	0.0911 (0.0022)	0.7377 (0.0218)	0.0103 (0.0005)	408
RP (3)	0.4591	0.0033	0.0438 (0.0010)	0.0937 (0.0014)	0.6960 (0.0145)	0.0107 (0.0003)	1000
RP (5)	0.4595	0.0033	0.0438 (0.0010)	0.0940 (0.0014)	0.6950 (0.0146)	0.0108 (0.0003)	1000
RP (9)	0.4595	0.0033	0.0438 (0.0010)	0.0941 (0.0014)	0.6940 (0.0146)	0.0108 (0.0003)	1000
RP (P)	0.4597	0.0033	0.0437 (0.0010)	0.0942 (0.0014)	0.6910 (0.0146)	0.0108 (0.0003)	1000
FP (W)	0.3455	0.0011	0.1054 (0.0030)	-0.0200 (0.0042)	0.4136 (0.0198)	0.0115 (0.0005)	619
FP (k=10)	0.4298	0.0016	0.0592 (0.0014)	0.0643 (0.0020)	0.5353 (0.0167)	0.0076 (0.0003)	893
FP (k=10000)	0.4518	0.0015	0.0447 (0.0010)	0.0863 (0.0015)	0.3893 (0.0159)	0.0094 (0.0003)	935

Table 147: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4597	0.0021	0.0497 (0.0011)	0.0891 (0.0016)	0.4899 (0.0159)	0.0104 (0.0003)	994
Exp	0.4763	0.0037	0.0539 (0.0012)	0.1057 (0.0017)	0.6120 (0.0154)	0.0141 (0.0004)	1000
Weibull	0.4583	0.0038	0.0499 (0.0011)	0.0877 (0.0016)	0.7720 (0.0133)	0.0102 (0.0003)	1000
Gompertz	0.4789	0.0037	0.0542 (0.0020)	0.1083 (0.0028)	0.6181 (0.0255)	0.0147 (0.0007)	364
RP (3)	0.4571	0.0038	0.0498 (0.0011)	0.0865 (0.0016)	0.7830 (0.0130)	0.0100 (0.0003)	1000
RP (5)	0.4575	0.0038	0.0498 (0.0011)	0.0869 (0.0016)	0.7800 (0.0131)	0.0100 (0.0003)	1000
RP (9)	0.4575	0.0038	0.0498 (0.0011)	0.0869 (0.0016)	0.7790 (0.0131)	0.0100 (0.0003)	1000
RP (P)	0.4576	0.0038	0.0498 (0.0011)	0.0870 (0.0016)	0.7790 (0.0131)	0.0100 (0.0003)	1000
FP (W)	0.4583	0.0020	0.0499 (0.0011)	0.0877 (0.0016)	0.4930 (0.0158)	0.0102 (0.0003)	1000
FP (k=10)	0.4474	0.0018	0.0541 (0.0012)	0.0768 (0.0017)	0.5420 (0.0158)	0.0088 (0.0003)	1000
FP (k=10000)	0.4794	0.0018	0.0519 (0.0012)	0.1088 (0.0016)	0.3190 (0.0147)	0.0145 (0.0004)	1000
Model frailty: Normal							
Cox	0.4596	0.0019	0.0481 (0.0011)	0.0891 (0.0015)	0.4729 (0.0158)	0.0102 (0.0003)	998
Exp	0.5034	0.0040	0.0517 (0.0012)	0.1328 (0.0016)	0.4177 (0.0156)	0.0203 (0.0005)	996
Weibull	0.4701	0.0039	0.0485 (0.0011)	0.0995 (0.0015)	0.6925 (0.0146)	0.0122 (0.0003)	995
Gompertz	0.5055	0.0041	0.0511 (0.0019)	0.1349 (0.0026)	0.4000 (0.0253)	0.0208 (0.0008)	375
RP (3)	0.4678	0.0039	0.0486 (0.0011)	0.0972 (0.0015)	0.6980 (0.0145)	0.0118 (0.0003)	1000
RP (5)	0.4685	0.0039	0.0486 (0.0011)	0.0979 (0.0015)	0.6930 (0.0146)	0.0119 (0.0003)	1000
RP (9)	0.4686	0.0039	0.0486 (0.0011)	0.0981 (0.0015)	0.6920 (0.0146)	0.0120 (0.0003)	1000
RP (P)	0.4686	0.0039	0.0486 (0.0011)	0.0980 (0.0015)	0.6900 (0.0146)	0.0120 (0.0003)	1000
FP (W)	0.3676	0.0013	0.1038 (0.0028)	-0.0030 (0.0039)	0.4782 (0.0187)	0.0108 (0.0005)	711
FP (k=10)	0.4432	0.0018	0.0607 (0.0014)	0.0726 (0.0020)	0.5383 (0.0166)	0.0089 (0.0003)	901
FP (k=10000)	0.4871	0.0017	0.0527 (0.0012)	0.1166 (0.0017)	0.2479 (0.0140)	0.0164 (0.0004)	948

Table 148: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4017	0.0013	0.0411 (0.0009)	0.0273 (0.0013)	0.8496 (0.0114)	0.0024 (0.0001)	991
Exp	0.4052	0.0026	0.0414 (0.0009)	0.0308 (0.0013)	0.9710 (0.0053)	0.0027 (0.0001)	1000
Weibull	0.4048	0.0024	0.0414 (0.0009)	0.0304 (0.0013)	0.9690 (0.0055)	0.0026 (0.0001)	1000
Gompertz	0.4087	0.0027	0.0409 (0.0014)	0.0343 (0.0020)	0.9709 (0.0083)	0.0028 (0.0002)	413
RP (3)	0.3965	0.0023	0.0410 (0.0009)	0.0221 (0.0013)	0.9760 (0.0048)	0.0022 (0.0001)	1000
RP (5)	0.3975	0.0023	0.0412 (0.0009)	0.0232 (0.0013)	0.9750 (0.0049)	0.0022 (0.0001)	1000
RP (9)	0.3982	0.0023	0.0412 (0.0009)	0.0238 (0.0013)	0.9740 (0.0050)	0.0023 (0.0001)	1000
RP (P)	0.3980	0.0023	0.0411 (0.0009)	0.0236 (0.0013)	0.9740 (0.0050)	0.0022 (0.0001)	1000
FP (W)	0.4049	0.0014	0.0414 (0.0009)	0.0305 (0.0013)	0.8458 (0.0114)	0.0026 (0.0001)	999
FP (k=10)	0.4032	0.0013	0.0409 (0.0009)	0.0288 (0.0013)	0.8410 (0.0116)	0.0025 (0.0001)	1000
FP (k=10000)	0.4119	0.0013	0.0405 (0.0010)	0.0375 (0.0014)	0.7967 (0.0139)	0.0030 (0.0001)	841
Model frailty: Normal							
Cox	0.4304	0.0014	0.0426 (0.0010)	0.0560 (0.0014)	0.6991 (0.0145)	0.0050 (0.0002)	997
Exp	0.4399	0.0031	0.0432 (0.0010)	0.0655 (0.0014)	0.8576 (0.0111)	0.0062 (0.0002)	997
Weibull	0.4478	0.0030	0.0437 (0.0010)	0.0734 (0.0014)	0.8116 (0.0124)	0.0073 (0.0002)	998
Gompertz	0.4434	0.0031	0.0447 (0.0015)	0.0690 (0.0022)	0.8337 (0.0181)	0.0068 (0.0004)	421
RP (3)	0.4379	0.0029	0.0436 (0.0010)	0.0635 (0.0014)	0.8400 (0.0116)	0.0059 (0.0002)	1000
RP (5)	0.4381	0.0029	0.0439 (0.0010)	0.0637 (0.0014)	0.8390 (0.0116)	0.0060 (0.0002)	1000
RP (9)	0.4389	0.0029	0.0439 (0.0010)	0.0645 (0.0014)	0.8370 (0.0117)	0.0061 (0.0002)	1000
RP (P)	0.4392	0.0029	0.0438 (0.0010)	0.0648 (0.0014)	0.8360 (0.0117)	0.0061 (0.0002)	1000
FP (W)	0.3289	0.0009	0.1011 (0.0030)	-0.0455 (0.0042)	0.4242 (0.0204)	0.0123 (0.0006)	587
FP (k=10)	0.4165	0.0013	0.0543 (0.0013)	0.0421 (0.0018)	0.6829 (0.0155)	0.0047 (0.0002)	902
FP (k=10000)	0.4323	0.0012	0.0442 (0.0010)	0.0579 (0.0015)	0.6027 (0.0163)	0.0053 (0.0002)	896

Table 149: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.3838	0.0013	0.0390 (0.0009)	0.0294 (0.0012)	0.8516 (0.0113)	0.0024 (0.0001)	997
Exp	0.3655	0.0027	0.0417 (0.0009)	0.0111 (0.0013)	0.9830 (0.0041)	0.0019 (0.0001)	1000
Weibull	0.3698	0.0019	0.0392 (0.0009)	0.0153 (0.0012)	0.9660 (0.0057)	0.0018 (0.0001)	1000
Gompertz	0.3692	0.0027	0.0430 (0.0013)	0.0147 (0.0019)	0.9766 (0.0067)	0.0021 (0.0001)	513
RP (3)	0.3787	0.0020	0.0387 (0.0009)	0.0243 (0.0012)	0.9630 (0.0060)	0.0021 (0.0001)	1000
RP (5)	0.3799	0.0021	0.0391 (0.0009)	0.0254 (0.0012)	0.9630 (0.0060)	0.0022 (0.0001)	1000
RP (9)	0.3810	0.0021	0.0390 (0.0009)	0.0265 (0.0012)	0.9610 (0.0061)	0.0022 (0.0001)	1000
RP (P)	0.3795	0.0021	0.0389 (0.0009)	0.0250 (0.0012)	0.9630 (0.0060)	0.0021 (0.0001)	1000
FP (W)	0.3698	0.0012	0.0392 (0.0009)	0.0153 (0.0012)	0.8890 (0.0099)	0.0018 (0.0001)	1000
FP (k=10)	0.3782	0.0012	0.0387 (0.0009)	0.0238 (0.0012)	0.8660 (0.0108)	0.0021 (0.0001)	1000
FP (k=10000)	0.0553	0.0000	0.0335 (0.0010)	-0.2991 (0.0014)	0.0000 (0.0000)	0.0906 (0.0007)	614
Model frailty: Normal							
Cox	0.4115	0.0014	0.0405 (0.0009)	0.0570 (0.0013)	0.6570 (0.0150)	0.0049 (0.0002)	997
Exp	0.3738	0.0028	0.0435 (0.0010)	0.0193 (0.0014)	0.9739 (0.0051)	0.0023 (0.0001)	995
Weibull	0.4016	0.0023	0.0412 (0.0009)	0.0472 (0.0013)	0.8976 (0.0096)	0.0039 (0.0001)	996
Gompertz	0.3769	0.0028	0.0437 (0.0014)	0.0225 (0.0019)	0.9702 (0.0076)	0.0024 (0.0002)	503
RP (3)	0.4182	0.0025	0.0412 (0.0009)	0.0637 (0.0013)	0.8190 (0.0122)	0.0058 (0.0002)	1000
RP (5)	0.4191	0.0025	0.0414 (0.0009)	0.0647 (0.0013)	0.8170 (0.0122)	0.0059 (0.0002)	1000
RP (9)	0.4204	0.0025	0.0412 (0.0009)	0.0659 (0.0013)	0.8060 (0.0125)	0.0060 (0.0002)	1000
RP (P)	0.4182	0.0025	0.0412 (0.0009)	0.0637 (0.0013)	0.8210 (0.0121)	0.0058 (0.0002)	1000
FP (W)	0.2957	0.0008	0.0845 (0.0026)	-0.0588 (0.0036)	0.4219 (0.0213)	0.0106 (0.0005)	538
FP (k=10)	0.3982	0.0013	0.0473 (0.0011)	0.0438 (0.0016)	0.6931 (0.0153)	0.0042 (0.0002)	909
FP (k=10000)	0.3590	0.0008	0.0486 (0.0011)	0.0046 (0.0016)	0.7433 (0.0143)	0.0024 (0.0001)	931

Table 150: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4413	0.0018	0.0468 (0.0011)	0.0761 (0.0015)	0.5958 (0.0156)	0.0080 (0.0003)	992
Exp	0.4415	0.0032	0.0469 (0.0010)	0.0764 (0.0015)	0.7970 (0.0127)	0.0080 (0.0003)	1000
Weibull	0.4362	0.0033	0.0461 (0.0010)	0.0710 (0.0015)	0.8430 (0.0115)	0.0072 (0.0002)	1000
Gompertz	0.4438	0.0033	0.0474 (0.0017)	0.0787 (0.0024)	0.7964 (0.0204)	0.0084 (0.0004)	388
RP (3)	0.4379	0.0033	0.0468 (0.0010)	0.0727 (0.0015)	0.8300 (0.0119)	0.0075 (0.0002)	1000
RP (5)	0.4395	0.0033	0.0467 (0.0010)	0.0743 (0.0015)	0.8170 (0.0122)	0.0077 (0.0002)	1000
RP (9)	0.4389	0.0033	0.0467 (0.0010)	0.0737 (0.0015)	0.8190 (0.0122)	0.0076 (0.0002)	1000
RP (P)	0.4391	0.0033	0.0467 (0.0010)	0.0740 (0.0015)	0.8185 (0.0122)	0.0077 (0.0002)	997
FP (W)	0.4362	0.0019	0.0461 (0.0010)	0.0710 (0.0015)	0.6340 (0.0152)	0.0072 (0.0002)	1000
FP (k=10)	0.4481	0.0019	0.0461 (0.0010)	0.0829 (0.0015)	0.5390 (0.0158)	0.0090 (0.0003)	1000
FP (k=10000)	0.4469	0.0018	0.0459 (0.0010)	0.0817 (0.0015)	0.5490 (0.0157)	0.0088 (0.0003)	1000
Model frailty: Normal							
Cox	0.4528	0.0018	0.0459 (0.0010)	0.0876 (0.0015)	0.4739 (0.0158)	0.0098 (0.0003)	996
Exp	0.4665	0.0036	0.0465 (0.0010)	0.1013 (0.0015)	0.6563 (0.0151)	0.0124 (0.0003)	995
Weibull	0.4545	0.0036	0.0459 (0.0010)	0.0893 (0.0015)	0.7563 (0.0136)	0.0101 (0.0003)	997
Gompertz	0.4662	0.0036	0.0460 (0.0016)	0.1010 (0.0023)	0.6732 (0.0232)	0.0123 (0.0005)	410
RP (3)	0.4595	0.0035	0.0462 (0.0010)	0.0943 (0.0015)	0.7000 (0.0145)	0.0110 (0.0003)	1000
RP (5)	0.4636	0.0035	0.0461 (0.0010)	0.0985 (0.0015)	0.6690 (0.0149)	0.0118 (0.0003)	1000
RP (9)	0.4638	0.0035	0.0460 (0.0010)	0.0986 (0.0015)	0.6710 (0.0149)	0.0118 (0.0003)	1000
RP (P)	0.4634	0.0035	0.0460 (0.0010)	0.0983 (0.0015)	0.6730 (0.0148)	0.0118 (0.0003)	1000
FP (W)	0.3535	0.0012	0.0982 (0.0027)	-0.0116 (0.0038)	0.4985 (0.0193)	0.0098 (0.0004)	674
FP (k=10)	0.4318	0.0017	0.0627 (0.0015)	0.0667 (0.0021)	0.5398 (0.0167)	0.0084 (0.0003)	893
FP (k=10000)	0.4614	0.0016	0.0463 (0.0011)	0.0963 (0.0015)	0.3651 (0.0155)	0.0114 (0.0003)	964

Table 151: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5806	0.0026	0.0621 (0.0014)	0.0044 (0.0020)	0.8820 (0.0104)	0.0039 (0.0002)	958
Exp	0.5810	0.0038	0.0621 (0.0014)	0.0047 (0.0020)	0.9420 (0.0074)	0.0039 (0.0002)	1000
Weibull	0.5812	0.0038	0.0621 (0.0014)	0.0049 (0.0020)	0.9370 (0.0077)	0.0039 (0.0002)	1000
Gompertz	0.5812	0.0038	0.0625 (0.0020)	0.0049 (0.0028)	0.9393 (0.0107)	0.0039 (0.0002)	494
RP (3)	0.5811	0.0038	0.0622 (0.0014)	0.0048 (0.0020)	0.9370 (0.0077)	0.0039 (0.0002)	1000
RP (5)	0.5810	0.0038	0.0622 (0.0014)	0.0048 (0.0020)	0.9380 (0.0076)	0.0039 (0.0002)	1000
RP (9)	0.5810	0.0038	0.0622 (0.0014)	0.0048 (0.0020)	0.9390 (0.0076)	0.0039 (0.0002)	1000
RP (P)	0.5811	0.0038	0.0622 (0.0014)	0.0048 (0.0020)	0.9379 (0.0076)	0.0039 (0.0002)	999
FP (W)	0.5812	0.0026	0.0621 (0.0014)	0.0049 (0.0020)	0.8830 (0.0102)	0.0039 (0.0002)	1000
FP (k=10)	0.5785	0.0026	0.0626 (0.0014)	0.0022 (0.0020)	0.8740 (0.0105)	0.0039 (0.0002)	1000
FP (k=10000)	0.5799	0.0025	0.0624 (0.0014)	0.0037 (0.0020)	0.8780 (0.0103)	0.0039 (0.0002)	1000
Model frailty: Normal							
Cox	0.5604	0.0024	0.0669 (0.0015)	-0.0159 (0.0021)	0.8190 (0.0122)	0.0047 (0.0002)	1000
Exp	0.5659	0.0036	0.0667 (0.0015)	-0.0104 (0.0021)	0.9179 (0.0087)	0.0045 (0.0002)	999
Weibull	0.5663	0.0036	0.0667 (0.0015)	-0.0100 (0.0021)	0.9149 (0.0088)	0.0045 (0.0002)	999
Gompertz	0.5663	0.0037	0.0642 (0.0021)	-0.0099 (0.0030)	0.9387 (0.0112)	0.0042 (0.0003)	457
RP (3)	0.5658	0.0037	0.0670 (0.0015)	-0.0105 (0.0021)	0.9130 (0.0089)	0.0046 (0.0002)	1000
RP (5)	0.5658	0.0037	0.0670 (0.0015)	-0.0105 (0.0021)	0.9130 (0.0089)	0.0046 (0.0002)	1000
RP (9)	0.5658	0.0037	0.0670 (0.0015)	-0.0105 (0.0021)	0.9120 (0.0090)	0.0046 (0.0002)	1000
RP (P)	0.5659	0.0037	0.0670 (0.0015)	-0.0104 (0.0021)	0.9150 (0.0088)	0.0046 (0.0002)	1000
FP (W)	0.4239	0.0015	0.1440 (0.0038)	-0.1523 (0.0054)	0.3866 (0.0184)	0.0439 (0.0020)	701
FP (k=10)	0.5393	0.0022	0.0784 (0.0018)	-0.0369 (0.0025)	0.7248 (0.0144)	0.0075 (0.0004)	963
FP (k=10000)	0.5521	0.0021	0.0671 (0.0015)	-0.0241 (0.0021)	0.7859 (0.0131)	0.0051 (0.0002)	981

Table 152: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5908	0.0029	0.0699 (0.0016)	-0.0000 (0.0023)	0.8653 (0.0110)	0.0049 (0.0002)	965
Exp	0.6105	0.0045	0.0719 (0.0016)	0.0197 (0.0023)	0.9220 (0.0085)	0.0055 (0.0002)	1000
Weibull	0.5922	0.0047	0.0693 (0.0016)	0.0014 (0.0022)	0.9430 (0.0073)	0.0048 (0.0002)	1000
Gompertz	0.6129	0.0046	0.0700 (0.0024)	0.0221 (0.0034)	0.9212 (0.0132)	0.0054 (0.0004)	419
RP (3)	0.5918	0.0047	0.0693 (0.0016)	0.0010 (0.0022)	0.9430 (0.0073)	0.0048 (0.0002)	1000
RP (5)	0.5918	0.0047	0.0693 (0.0016)	0.0009 (0.0022)	0.9440 (0.0073)	0.0048 (0.0002)	1000
RP (9)	0.5918	0.0047	0.0693 (0.0016)	0.0009 (0.0022)	0.9440 (0.0073)	0.0048 (0.0002)	1000
RP (P)	0.5919	0.0047	0.0693 (0.0016)	0.0011 (0.0022)	0.9430 (0.0073)	0.0048 (0.0002)	1000
FP (W)	0.5922	0.0029	0.0693 (0.0016)	0.0014 (0.0022)	0.8660 (0.0108)	0.0048 (0.0002)	1000
FP (k=10)	0.5682	0.0026	0.0720 (0.0016)	-0.0227 (0.0023)	0.8060 (0.0125)	0.0057 (0.0002)	1000
FP (k=10000)	0.5729	0.0025	0.0757 (0.0017)	-0.0179 (0.0024)	0.7990 (0.0127)	0.0060 (0.0003)	1000
Model frailty: Normal							
Cox	0.5642	0.0026	0.0752 (0.0017)	-0.0266 (0.0024)	0.7870 (0.0129)	0.0064 (0.0003)	1000
Exp	0.5897	0.0042	0.0781 (0.0017)	-0.0011 (0.0025)	0.8839 (0.0101)	0.0061 (0.0003)	999
Weibull	0.5696	0.0043	0.0752 (0.0017)	-0.0212 (0.0024)	0.8980 (0.0096)	0.0061 (0.0003)	1000
Gompertz	0.5908	0.0042	0.0759 (0.0027)	-0.0000 (0.0037)	0.8856 (0.0157)	0.0057 (0.0004)	411
RP (3)	0.5690	0.0043	0.0753 (0.0017)	-0.0218 (0.0024)	0.8990 (0.0095)	0.0061 (0.0003)	1000
RP (5)	0.5690	0.0043	0.0753 (0.0017)	-0.0218 (0.0024)	0.8990 (0.0095)	0.0061 (0.0003)	1000
RP (9)	0.5690	0.0043	0.0753 (0.0017)	-0.0218 (0.0024)	0.8990 (0.0095)	0.0061 (0.0003)	1000
RP (P)	0.5692	0.0043	0.0753 (0.0017)	-0.0216 (0.0024)	0.8970 (0.0096)	0.0061 (0.0003)	1000
FP (W)	0.4563	0.0020	0.1530 (0.0039)	-0.1345 (0.0055)	0.4392 (0.0179)	0.0415 (0.0020)	765
FP (k=10)	0.5419	0.0025	0.0836 (0.0019)	-0.0489 (0.0027)	0.7079 (0.0147)	0.0094 (0.0005)	962
FP (k=10000)	0.5533	0.0023	0.0752 (0.0017)	-0.0375 (0.0024)	0.7457 (0.0139)	0.0071 (0.0003)	987

Table 153: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5456	0.0021	0.0543 (0.0012)	0.0019 (0.0017)	0.9037 (0.0095)	0.0029 (0.0001)	966
Exp	0.5171	0.0031	0.0503 (0.0011)	-0.0266 (0.0016)	0.9470 (0.0071)	0.0032 (0.0001)	1000
Weibull	0.5341	0.0029	0.0525 (0.0012)	-0.0096 (0.0017)	0.9530 (0.0067)	0.0028 (0.0001)	1000
Gompertz	0.5317	0.0030	0.0583 (0.0015)	-0.0120 (0.0021)	0.9284 (0.0095)	0.0035 (0.0002)	740
RP (3)	0.5442	0.0029	0.0543 (0.0012)	0.0005 (0.0017)	0.9420 (0.0074)	0.0029 (0.0001)	1000
RP (5)	0.5450	0.0029	0.0545 (0.0012)	0.0013 (0.0017)	0.9450 (0.0072)	0.0030 (0.0001)	1000
RP (9)	0.5453	0.0029	0.0545 (0.0012)	0.0016 (0.0017)	0.9450 (0.0072)	0.0030 (0.0001)	1000
RP (P)	0.5433	0.0029	0.0541 (0.0012)	-0.0004 (0.0017)	0.9470 (0.0071)	0.0029 (0.0001)	1000
FP (W)	0.5341	0.0022	0.0525 (0.0012)	-0.0096 (0.0017)	0.9140 (0.0089)	0.0028 (0.0001)	1000
FP (k=10)	0.5455	0.0021	0.0546 (0.0012)	0.0018 (0.0017)	0.9000 (0.0095)	0.0030 (0.0001)	1000
FP (k=10000)	0.5438	0.0021	0.0540 (0.0012)	0.0001 (0.0017)	0.9000 (0.0095)	0.0029 (0.0001)	1000
Model frailty: Normal							
Cox	0.5363	0.0020	0.0577 (0.0013)	-0.0074 (0.0018)	0.8640 (0.0108)	0.0034 (0.0002)	1000
Exp	0.5103	0.0031	0.0539 (0.0012)	-0.0334 (0.0017)	0.9099 (0.0091)	0.0040 (0.0002)	999
Weibull	0.5316	0.0029	0.0553 (0.0012)	-0.0121 (0.0017)	0.9380 (0.0076)	0.0032 (0.0001)	1000
Gompertz	0.5253	0.0030	0.0629 (0.0017)	-0.0184 (0.0023)	0.8949 (0.0114)	0.0043 (0.0002)	723
RP (3)	0.5412	0.0029	0.0571 (0.0013)	-0.0025 (0.0018)	0.9320 (0.0080)	0.0033 (0.0002)	1000
RP (5)	0.5417	0.0029	0.0573 (0.0013)	-0.0020 (0.0018)	0.9340 (0.0079)	0.0033 (0.0002)	1000
RP (9)	0.5418	0.0029	0.0574 (0.0013)	-0.0019 (0.0018)	0.9350 (0.0078)	0.0033 (0.0002)	1000
RP (P)	0.5403	0.0029	0.0569 (0.0013)	-0.0034 (0.0018)	0.9340 (0.0079)	0.0033 (0.0002)	1000
FP (W)	0.4002	0.0013	0.1314 (0.0036)	-0.1435 (0.0051)	0.3594 (0.0186)	0.0378 (0.0018)	665
FP (k=10)	0.5204	0.0019	0.0643 (0.0015)	-0.0233 (0.0021)	0.7788 (0.0136)	0.0047 (0.0002)	936
FP (k=10000)	0.5206	0.0016	0.0602 (0.0014)	-0.0231 (0.0019)	0.7660 (0.0136)	0.0042 (0.0002)	966

Table 154: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5197	0.0020	0.0537 (0.0012)	0.0016 (0.0017)	0.9019 (0.0097)	0.0029 (0.0001)	948
Exp	0.4851	0.0032	0.0515 (0.0012)	-0.0329 (0.0016)	0.9310 (0.0080)	0.0037 (0.0002)	1000
Weibull	0.5301	0.0027	0.0553 (0.0012)	0.0121 (0.0017)	0.9200 (0.0086)	0.0032 (0.0001)	1000
Gompertz	0.5241	0.0029	0.0641 (0.0015)	0.0060 (0.0021)	0.8992 (0.0098)	0.0041 (0.0002)	942
RP (3)	0.5183	0.0027	0.0532 (0.0012)	0.0003 (0.0017)	0.9440 (0.0073)	0.0028 (0.0001)	1000
RP (5)	0.5195	0.0027	0.0534 (0.0012)	0.0015 (0.0017)	0.9440 (0.0073)	0.0029 (0.0001)	1000
RP (9)	0.5197	0.0027	0.0535 (0.0012)	0.0017 (0.0017)	0.9449 (0.0072)	0.0029 (0.0001)	999
RP (P)	0.5198	0.0027	0.0535 (0.0012)	0.0017 (0.0017)	0.9440 (0.0073)	0.0029 (0.0001)	1000
FP (W)	0.5300	0.0019	0.0551 (0.0012)	0.0119 (0.0017)	0.8686 (0.0107)	0.0032 (0.0001)	997
FP (k=10)	0.5146	0.0019	0.0547 (0.0012)	-0.0034 (0.0017)	0.8870 (0.0100)	0.0030 (0.0001)	1000
FP (k=10000)	0.0785	0.0000	0.0176 (0.0004)	-0.4395 (0.0006)	0.0000 (0.0000)	0.1935 (0.0005)	977
Model frailty: Normal							
Cox	0.5106	0.0019	0.0567 (0.0013)	-0.0075 (0.0018)	0.8640 (0.0108)	0.0033 (0.0001)	1000
Exp	0.4728	0.0031	0.0556 (0.0012)	-0.0452 (0.0018)	0.8707 (0.0106)	0.0051 (0.0002)	998
Weibull	0.5258	0.0026	0.0583 (0.0013)	0.0078 (0.0018)	0.9108 (0.0090)	0.0035 (0.0002)	998
Gompertz	0.5147	0.0028	0.0698 (0.0017)	-0.0033 (0.0024)	0.8677 (0.0115)	0.0049 (0.0002)	862
RP (3)	0.5153	0.0027	0.0560 (0.0013)	-0.0027 (0.0018)	0.9250 (0.0083)	0.0031 (0.0001)	1000
RP (5)	0.5157	0.0027	0.0564 (0.0013)	-0.0023 (0.0018)	0.9240 (0.0084)	0.0032 (0.0001)	1000
RP (9)	0.5158	0.0027	0.0565 (0.0013)	-0.0022 (0.0018)	0.9250 (0.0083)	0.0032 (0.0001)	1000
RP (P)	0.5160	0.0027	0.0565 (0.0013)	-0.0021 (0.0018)	0.9230 (0.0084)	0.0032 (0.0001)	1000
FP (W)	0.3913	0.0011	0.1293 (0.0037)	-0.1267 (0.0053)	0.3665 (0.0196)	0.0328 (0.0016)	603
FP (k=10)	0.4936	0.0017	0.0625 (0.0014)	-0.0244 (0.0020)	0.7904 (0.0133)	0.0045 (0.0002)	940
FP (k=10000)	0.4550	0.0013	0.0752 (0.0017)	-0.0631 (0.0024)	0.5192 (0.0161)	0.0096 (0.0004)	965

Table 155: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5815	0.0027	0.0665 (0.0015)	-0.0015 (0.0021)	0.8875 (0.0102)	0.0044 (0.0002)	969
Exp	0.5951	0.0041	0.0680 (0.0015)	0.0122 (0.0021)	0.9350 (0.0078)	0.0048 (0.0002)	1000
Weibull	0.5860	0.0042	0.0669 (0.0015)	0.0031 (0.0021)	0.9460 (0.0071)	0.0045 (0.0002)	1000
Gompertz	0.5949	0.0041	0.0676 (0.0022)	0.0120 (0.0032)	0.9342 (0.0116)	0.0047 (0.0004)	456
RP (3)	0.5835	0.0042	0.0661 (0.0015)	0.0006 (0.0021)	0.9450 (0.0072)	0.0044 (0.0002)	1000
RP (5)	0.5828	0.0042	0.0660 (0.0015)	-0.0001 (0.0021)	0.9450 (0.0072)	0.0043 (0.0002)	1000
RP (9)	0.5826	0.0042	0.0659 (0.0015)	-0.0003 (0.0021)	0.9450 (0.0072)	0.0043 (0.0002)	1000
RP (P)	0.5832	0.0042	0.0661 (0.0015)	0.0002 (0.0021)	0.9450 (0.0072)	0.0044 (0.0002)	1000
FP (W)	0.5860	0.0027	0.0669 (0.0015)	0.0031 (0.0021)	0.8860 (0.0101)	0.0045 (0.0002)	1000
FP (k=10)	0.5759	0.0027	0.0670 (0.0015)	-0.0070 (0.0021)	0.8660 (0.0108)	0.0045 (0.0002)	1000
FP (k=10000)	0.5795	0.0027	0.0663 (0.0015)	-0.0034 (0.0021)	0.8800 (0.0103)	0.0044 (0.0002)	1000
Model frailty: Normal							
Cox	0.5593	0.0025	0.0712 (0.0016)	-0.0236 (0.0023)	0.7960 (0.0127)	0.0056 (0.0002)	1000
Exp	0.5768	0.0039	0.0731 (0.0016)	-0.0061 (0.0023)	0.9050 (0.0093)	0.0054 (0.0002)	1000
Weibull	0.5666	0.0039	0.0720 (0.0016)	-0.0163 (0.0023)	0.9048 (0.0093)	0.0054 (0.0002)	998
Gompertz	0.5767	0.0039	0.0728 (0.0025)	-0.0062 (0.0035)	0.9133 (0.0136)	0.0053 (0.0004)	427
RP (3)	0.5648	0.0040	0.0716 (0.0016)	-0.0182 (0.0023)	0.9050 (0.0093)	0.0054 (0.0002)	1000
RP (5)	0.5647	0.0039	0.0713 (0.0016)	-0.0182 (0.0023)	0.9050 (0.0093)	0.0054 (0.0002)	1000
RP (9)	0.5646	0.0039	0.0713 (0.0016)	-0.0183 (0.0023)	0.9040 (0.0093)	0.0054 (0.0002)	1000
RP (P)	0.5648	0.0039	0.0715 (0.0016)	-0.0181 (0.0023)	0.9050 (0.0093)	0.0054 (0.0002)	1000
FP (W)	0.4341	0.0017	0.1472 (0.0038)	-0.1488 (0.0053)	0.4089 (0.0177)	0.0438 (0.0020)	768
FP (k=10)	0.5345	0.0023	0.0825 (0.0019)	-0.0484 (0.0027)	0.6852 (0.0150)	0.0091 (0.0005)	953
FP (k=10000)	0.5522	0.0023	0.0684 (0.0015)	-0.0308 (0.0022)	0.7732 (0.0134)	0.0056 (0.0002)	979

Table 156: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5847	0.0025	0.0657 (0.0015)	-0.0112 (0.0021)	0.8555 (0.0113)	0.0044 (0.0002)	962
Exp	0.5833	0.0033	0.0655 (0.0015)	-0.0127 (0.0021)	0.9010 (0.0094)	0.0044 (0.0002)	1000
Weibull	0.5833	0.0033	0.0656 (0.0015)	-0.0126 (0.0021)	0.9000 (0.0095)	0.0045 (0.0002)	1000
Gompertz	0.5855	0.0033	0.0638 (0.0020)	-0.0104 (0.0029)	0.9058 (0.0131)	0.0042 (0.0003)	499
RP (3)	0.5833	0.0033	0.0656 (0.0015)	-0.0126 (0.0021)	0.9000 (0.0095)	0.0045 (0.0002)	1000
RP (5)	0.5833	0.0033	0.0656 (0.0015)	-0.0126 (0.0021)	0.8980 (0.0096)	0.0045 (0.0002)	1000
RP (9)	0.5833	0.0033	0.0656 (0.0015)	-0.0126 (0.0021)	0.9000 (0.0095)	0.0045 (0.0002)	1000
RP (P)	0.5833	0.0033	0.0656 (0.0015)	-0.0126 (0.0021)	0.8988 (0.0095)	0.0045 (0.0002)	998
FP (W)	0.5833	0.0025	0.0656 (0.0015)	-0.0127 (0.0021)	0.8559 (0.0111)	0.0045 (0.0002)	999
FP (k=10)	0.5844	0.0025	0.0650 (0.0015)	-0.0115 (0.0021)	0.8580 (0.0110)	0.0044 (0.0002)	1000
FP (k=10000)	0.5843	0.0025	0.0650 (0.0015)	-0.0116 (0.0021)	0.8550 (0.0111)	0.0044 (0.0002)	1000
Model frailty: Normal							
Cox	0.5931	0.0025	0.0607 (0.0014)	-0.0028 (0.0019)	0.8970 (0.0096)	0.0037 (0.0002)	1000
Exp	0.5986	0.0034	0.0603 (0.0014)	0.0027 (0.0019)	0.9409 (0.0075)	0.0036 (0.0002)	998
Weibull	0.5987	0.0034	0.0603 (0.0014)	0.0028 (0.0019)	0.9429 (0.0073)	0.0036 (0.0002)	999
Gompertz	0.5997	0.0034	0.0614 (0.0020)	0.0038 (0.0028)	0.9333 (0.0112)	0.0038 (0.0003)	495
RP (3)	0.5986	0.0034	0.0604 (0.0014)	0.0027 (0.0019)	0.9400 (0.0075)	0.0037 (0.0002)	1000
RP (5)	0.5986	0.0034	0.0604 (0.0014)	0.0027 (0.0019)	0.9400 (0.0075)	0.0037 (0.0002)	1000
RP (9)	0.5986	0.0034	0.0604 (0.0014)	0.0027 (0.0019)	0.9410 (0.0075)	0.0037 (0.0002)	1000
RP (P)	0.5987	0.0034	0.0603 (0.0014)	0.0028 (0.0019)	0.9410 (0.0075)	0.0036 (0.0002)	1000
FP (W)	0.4532	0.0016	0.1523 (0.0042)	-0.1427 (0.0059)	0.4345 (0.0191)	0.0435 (0.0022)	672
FP (k=10)	0.5744	0.0024	0.0731 (0.0017)	-0.0215 (0.0024)	0.8241 (0.0124)	0.0058 (0.0004)	938
FP (k=10000)	0.5869	0.0022	0.0612 (0.0014)	-0.0090 (0.0020)	0.8580 (0.0112)	0.0038 (0.0002)	972

Table 157: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.6203	0.0030	0.0642 (0.0015)	-0.0035 (0.0021)	0.9034 (0.0095)	0.0041 (0.0002)	963
Exp	0.6342	0.0039	0.0705 (0.0016)	0.0104 (0.0022)	0.9120 (0.0090)	0.0051 (0.0002)	1000
Weibull	0.6205	0.0041	0.0642 (0.0014)	-0.0033 (0.0020)	0.9380 (0.0076)	0.0041 (0.0002)	1000
Gompertz	0.6338	0.0040	0.0698 (0.0025)	0.0100 (0.0035)	0.9194 (0.0137)	0.0050 (0.0004)	397
RP (3)	0.6202	0.0041	0.0641 (0.0014)	-0.0036 (0.0020)	0.9410 (0.0075)	0.0041 (0.0002)	1000
RP (5)	0.6200	0.0041	0.0641 (0.0014)	-0.0038 (0.0020)	0.9410 (0.0075)	0.0041 (0.0002)	1000
RP (9)	0.6200	0.0041	0.0641 (0.0014)	-0.0038 (0.0020)	0.9400 (0.0075)	0.0041 (0.0002)	1000
RP (P)	0.6201	0.0041	0.0641 (0.0014)	-0.0037 (0.0020)	0.9390 (0.0076)	0.0041 (0.0002)	1000
FP (W)	0.6205	0.0030	0.0642 (0.0014)	-0.0033 (0.0020)	0.9020 (0.0094)	0.0041 (0.0002)	1000
FP (k=10)	0.6091	0.0028	0.0642 (0.0014)	-0.0147 (0.0020)	0.8760 (0.0104)	0.0043 (0.0002)	1000
FP (k=10000)	0.6172	0.0027	0.0649 (0.0015)	-0.0066 (0.0021)	0.8820 (0.0102)	0.0042 (0.0002)	1000
Model frailty: Normal							
Cox	0.6221	0.0029	0.0614 (0.0014)	-0.0017 (0.0019)	0.9140 (0.0089)	0.0038 (0.0002)	1000
Exp	0.6532	0.0039	0.0634 (0.0014)	0.0294 (0.0020)	0.9259 (0.0083)	0.0049 (0.0002)	999
Weibull	0.6283	0.0041	0.0612 (0.0014)	0.0045 (0.0019)	0.9550 (0.0066)	0.0038 (0.0002)	1000
Gompertz	0.6524	0.0039	0.0632 (0.0024)	0.0286 (0.0034)	0.9226 (0.0143)	0.0048 (0.0004)	349
RP (3)	0.6276	0.0041	0.0613 (0.0014)	0.0038 (0.0019)	0.9540 (0.0066)	0.0038 (0.0002)	1000
RP (5)	0.6275	0.0041	0.0613 (0.0014)	0.0037 (0.0019)	0.9540 (0.0066)	0.0038 (0.0002)	1000
RP (9)	0.6275	0.0041	0.0613 (0.0014)	0.0037 (0.0019)	0.9540 (0.0066)	0.0038 (0.0002)	1000
RP (P)	0.6277	0.0041	0.0613 (0.0014)	0.0039 (0.0019)	0.9550 (0.0066)	0.0038 (0.0002)	1000
FP (W)	0.4821	0.0020	0.1609 (0.0043)	-0.1417 (0.0060)	0.4734 (0.0187)	0.0459 (0.0024)	714
FP (k=10)	0.5961	0.0027	0.0750 (0.0017)	-0.0277 (0.0024)	0.8141 (0.0126)	0.0064 (0.0004)	952
FP (k=10000)	0.6112	0.0025	0.0628 (0.0014)	-0.0126 (0.0020)	0.8626 (0.0110)	0.0041 (0.0002)	975

Table 158: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5245	0.0019	0.0574 (0.0013)	-0.0205 (0.0019)	0.8267 (0.0122)	0.0037 (0.0002)	958
Exp	0.4991	0.0027	0.0521 (0.0012)	-0.0459 (0.0016)	0.8430 (0.0115)	0.0048 (0.0002)	1000
Weibull	0.5099	0.0025	0.0565 (0.0013)	-0.0351 (0.0018)	0.8500 (0.0113)	0.0044 (0.0002)	1000
Gompertz	0.5165	0.0026	0.0595 (0.0016)	-0.0285 (0.0022)	0.8684 (0.0126)	0.0043 (0.0002)	722
RP (3)	0.5214	0.0024	0.0574 (0.0013)	-0.0235 (0.0018)	0.8770 (0.0104)	0.0038 (0.0002)	1000
RP (5)	0.5227	0.0025	0.0575 (0.0013)	-0.0222 (0.0018)	0.8780 (0.0103)	0.0038 (0.0002)	1000
RP (9)	0.5232	0.0025	0.0575 (0.0013)	-0.0218 (0.0018)	0.8770 (0.0104)	0.0038 (0.0002)	1000
RP (P)	0.5208	0.0025	0.0572 (0.0013)	-0.0241 (0.0018)	0.8759 (0.0104)	0.0039 (0.0002)	999
FP (W)	0.5099	0.0020	0.0565 (0.0013)	-0.0351 (0.0018)	0.7880 (0.0129)	0.0044 (0.0002)	1000
FP (k=10)	0.5259	0.0019	0.0570 (0.0013)	-0.0191 (0.0018)	0.8330 (0.0118)	0.0036 (0.0002)	1000
FP (k=10000)	0.5239	0.0019	0.0562 (0.0013)	-0.0210 (0.0018)	0.8220 (0.0121)	0.0036 (0.0002)	1000
Model frailty: Normal							
Cox	0.5394	0.0020	0.0525 (0.0012)	-0.0056 (0.0017)	0.8980 (0.0096)	0.0028 (0.0001)	1000
Exp	0.5133	0.0029	0.0484 (0.0011)	-0.0317 (0.0015)	0.9309 (0.0080)	0.0033 (0.0001)	999
Weibull	0.5316	0.0028	0.0509 (0.0011)	-0.0134 (0.0016)	0.9430 (0.0073)	0.0028 (0.0001)	1000
Gompertz	0.5305	0.0028	0.0569 (0.0015)	-0.0145 (0.0021)	0.9250 (0.0098)	0.0034 (0.0002)	720
RP (3)	0.5422	0.0027	0.0525 (0.0012)	-0.0028 (0.0017)	0.9410 (0.0075)	0.0028 (0.0001)	1000
RP (5)	0.5433	0.0027	0.0526 (0.0012)	-0.0016 (0.0017)	0.9410 (0.0075)	0.0028 (0.0001)	1000
RP (9)	0.5438	0.0027	0.0526 (0.0012)	-0.0012 (0.0017)	0.9430 (0.0073)	0.0028 (0.0001)	1000
RP (P)	0.5416	0.0027	0.0523 (0.0012)	-0.0033 (0.0017)	0.9440 (0.0073)	0.0027 (0.0001)	1000
FP (W)	0.3894	0.0012	0.1330 (0.0038)	-0.1556 (0.0054)	0.3675 (0.0194)	0.0419 (0.0019)	615
FP (k=10)	0.5336	0.0019	0.0604 (0.0014)	-0.0113 (0.0020)	0.8438 (0.0119)	0.0038 (0.0002)	928
FP (k=10000)	0.5432	0.0017	0.0536 (0.0012)	-0.0018 (0.0017)	0.8774 (0.0106)	0.0029 (0.0001)	954

Table 159: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5057	0.0018	0.0577 (0.0013)	-0.0160 (0.0019)	0.8220 (0.0124)	0.0036 (0.0002)	955
Exp	0.4798	0.0028	0.0510 (0.0011)	-0.0418 (0.0016)	0.8760 (0.0104)	0.0043 (0.0002)	1000
Weibull	0.5174	0.0022	0.0580 (0.0013)	-0.0043 (0.0018)	0.8840 (0.0101)	0.0034 (0.0002)	1000
Gompertz	0.5232	0.0024	0.0614 (0.0014)	0.0015 (0.0020)	0.8960 (0.0098)	0.0038 (0.0002)	962
RP (3)	0.5020	0.0023	0.0571 (0.0013)	-0.0196 (0.0018)	0.8670 (0.0107)	0.0036 (0.0002)	1000
RP (5)	0.5040	0.0023	0.0575 (0.0013)	-0.0177 (0.0018)	0.8730 (0.0105)	0.0036 (0.0002)	1000
RP (9)	0.5045	0.0023	0.0574 (0.0013)	-0.0172 (0.0018)	0.8746 (0.0105)	0.0036 (0.0002)	997
RP (P)	0.5046	0.0023	0.0573 (0.0013)	-0.0171 (0.0018)	0.8740 (0.0105)	0.0036 (0.0002)	1000
FP (W)	0.5174	0.0017	0.0580 (0.0013)	-0.0043 (0.0018)	0.8360 (0.0117)	0.0034 (0.0002)	1000
FP (k=10)	0.5147	0.0018	0.0548 (0.0012)	-0.0069 (0.0017)	0.8660 (0.0108)	0.0030 (0.0001)	1000
FP (k=10000)	0.0609	0.0000	0.0133 (0.0003)	-0.4607 (0.0004)	0.0000 (0.0000)	0.2124 (0.0004)	918
Model frailty: Normal							
Cox	0.5201	0.0019	0.0523 (0.0012)	-0.0015 (0.0017)	0.8990 (0.0095)	0.0027 (0.0001)	1000
Exp	0.4825	0.0029	0.0502 (0.0011)	-0.0392 (0.0016)	0.9039 (0.0093)	0.0041 (0.0002)	999
Weibull	0.5356	0.0024	0.0540 (0.0012)	0.0140 (0.0017)	0.9200 (0.0086)	0.0031 (0.0001)	1000
Gompertz	0.5327	0.0025	0.0609 (0.0014)	0.0111 (0.0020)	0.9032 (0.0098)	0.0038 (0.0002)	919
RP (3)	0.5223	0.0025	0.0521 (0.0012)	0.0007 (0.0016)	0.9440 (0.0073)	0.0027 (0.0001)	1000
RP (5)	0.5241	0.0025	0.0524 (0.0012)	0.0024 (0.0017)	0.9440 (0.0073)	0.0027 (0.0001)	1000
RP (9)	0.5246	0.0025	0.0523 (0.0012)	0.0029 (0.0017)	0.9450 (0.0072)	0.0027 (0.0001)	1000
RP (P)	0.5245	0.0025	0.0523 (0.0012)	0.0028 (0.0017)	0.9430 (0.0073)	0.0027 (0.0001)	1000
FP (W)	0.4067	0.0012	0.1279 (0.0038)	-0.1150 (0.0054)	0.4098 (0.0206)	0.0295 (0.0016)	571
FP (k=10)	0.5113	0.0018	0.0599 (0.0014)	-0.0103 (0.0020)	0.8413 (0.0119)	0.0037 (0.0002)	939
FP (k=10000)	0.4918	0.0013	0.0662 (0.0015)	-0.0298 (0.0021)	0.6809 (0.0150)	0.0053 (0.0003)	962

Table 160: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5958	0.0027	0.0655 (0.0015)	-0.0098 (0.0021)	0.8668 (0.0110)	0.0044 (0.0002)	961
Exp	0.6074	0.0036	0.0683 (0.0015)	0.0019 (0.0022)	0.9050 (0.0093)	0.0047 (0.0002)	1000
Weibull	0.6010	0.0037	0.0658 (0.0015)	-0.0046 (0.0021)	0.9230 (0.0084)	0.0043 (0.0002)	1000
Gompertz	0.6085	0.0036	0.0630 (0.0021)	0.0029 (0.0030)	0.9312 (0.0121)	0.0040 (0.0003)	436
RP (3)	0.5977	0.0036	0.0653 (0.0015)	-0.0079 (0.0021)	0.9250 (0.0083)	0.0043 (0.0002)	1000
RP (5)	0.5957	0.0036	0.0653 (0.0015)	-0.0099 (0.0021)	0.9210 (0.0085)	0.0044 (0.0002)	1000
RP (9)	0.5951	0.0036	0.0653 (0.0015)	-0.0105 (0.0021)	0.9200 (0.0086)	0.0044 (0.0002)	1000
RP (P)	0.5963	0.0036	0.0654 (0.0015)	-0.0093 (0.0021)	0.9208 (0.0085)	0.0044 (0.0002)	998
FP (W)	0.6010	0.0027	0.0658 (0.0015)	-0.0046 (0.0021)	0.8740 (0.0105)	0.0043 (0.0002)	1000
FP (k=10)	0.5960	0.0027	0.0639 (0.0014)	-0.0096 (0.0020)	0.8700 (0.0106)	0.0042 (0.0002)	1000
FP (k=10000)	0.5969	0.0027	0.0643 (0.0014)	-0.0087 (0.0020)	0.8689 (0.0107)	0.0042 (0.0002)	999
Model frailty: Normal							
Cox	0.6026	0.0027	0.0604 (0.0014)	-0.0030 (0.0019)	0.9010 (0.0094)	0.0037 (0.0002)	1000
Exp	0.6232	0.0036	0.0621 (0.0014)	0.0177 (0.0020)	0.9268 (0.0083)	0.0042 (0.0002)	997
Weibull	0.6122	0.0037	0.0613 (0.0014)	0.0066 (0.0019)	0.9380 (0.0076)	0.0038 (0.0002)	1000
Gompertz	0.6232	0.0036	0.0583 (0.0020)	0.0176 (0.0028)	0.9486 (0.0107)	0.0037 (0.0003)	428
RP (3)	0.6102	0.0037	0.0605 (0.0014)	0.0047 (0.0019)	0.9480 (0.0070)	0.0037 (0.0002)	1000
RP (5)	0.6088	0.0037	0.0603 (0.0013)	0.0032 (0.0019)	0.9460 (0.0071)	0.0036 (0.0002)	1000
RP (9)	0.6084	0.0037	0.0603 (0.0013)	0.0028 (0.0019)	0.9450 (0.0072)	0.0036 (0.0002)	1000
RP (P)	0.6091	0.0037	0.0604 (0.0014)	0.0036 (0.0019)	0.9460 (0.0071)	0.0037 (0.0002)	1000
FP (W)	0.4613	0.0018	0.1547 (0.0042)	-0.1443 (0.0059)	0.4284 (0.0189)	0.0447 (0.0022)	684
FP (k=10)	0.5776	0.0025	0.0768 (0.0018)	-0.0280 (0.0025)	0.8070 (0.0128)	0.0067 (0.0004)	948
FP (k=10000)	0.5976	0.0024	0.0597 (0.0014)	-0.0079 (0.0019)	0.8790 (0.0104)	0.0036 (0.0002)	975

Table 161: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2762	0.0009	0.0358 (0.0008)	0.1058 (0.0011)	0.0680 (0.0080)	0.0125 (0.0003)	1000
Exp	0.2717	0.0017	0.0355 (0.0008)	0.1012 (0.0011)	0.2120 (0.0129)	0.0115 (0.0002)	1000
Weibull	0.2717	0.0017	0.0356 (0.0008)	0.1013 (0.0011)	0.2080 (0.0128)	0.0115 (0.0002)	1000
Gompertz	0.2817	0.0020	0.0415 (0.0048)	0.1113 (0.0067)	0.2105 (0.0661)	0.0141 (0.0015)	38
RP (3)	0.2716	0.0017	0.0355 (0.0008)	0.1012 (0.0011)	0.2189 (0.0131)	0.0115 (0.0002)	996
RP (5)	0.2724	0.0017	0.0355 (0.0008)	0.1020 (0.0011)	0.2131 (0.0130)	0.0117 (0.0002)	995
RP (9)	0.2724	0.0017	0.0356 (0.0008)	0.1020 (0.0011)	0.2108 (0.0129)	0.0117 (0.0002)	996
RP (P)	0.2725	0.0017	0.0356 (0.0008)	0.1021 (0.0011)	0.2098 (0.0129)	0.0117 (0.0002)	996
FP (W)	0.2717	0.0008	0.0356 (0.0008)	0.1013 (0.0011)	0.0760 (0.0084)	0.0115 (0.0002)	1000
FP (k=10)	0.2744	0.0008	0.0360 (0.0008)	0.1040 (0.0011)	0.0650 (0.0078)	0.0121 (0.0003)	1000
FP (k=10000)	0.3157	0.0014	0.0496 (0.0054)	0.1453 (0.0076)	0.0930 (0.0443)	0.0235 (0.0020)	43
Model frailty: Normal							
Cox	0.3498	0.0014	0.1000 (0.0023)	0.1794 (0.0032)	0.0103 (0.0033)	0.0422 (0.0017)	967
Exp	0.3141	0.0025	0.0362 (0.0008)	0.1437 (0.0012)	0.0589 (0.0076)	0.0219 (0.0003)	950
Weibull	0.3155	0.0025	0.0358 (0.0008)	0.1451 (0.0012)	0.0513 (0.0072)	0.0223 (0.0003)	936
Gompertz	0.3333	0.0028	0.0431 (0.0052)	0.1629 (0.0073)	0.0286 (0.0282)	0.0283 (0.0024)	35
RP (3)	0.3315	0.0033	0.0404 (0.0009)	0.1611 (0.0013)	0.1640 (0.0117)	0.0276 (0.0004)	1000
RP (5)	0.3332	0.0033	0.0408 (0.0009)	0.1628 (0.0013)	0.1610 (0.0116)	0.0282 (0.0004)	1000
RP (9)	0.3335	0.0034	0.0409 (0.0009)	0.1631 (0.0013)	0.1660 (0.0118)	0.0283 (0.0004)	1000
RP (P)	0.3336	0.0034	0.0409 (0.0009)	0.1632 (0.0013)	0.1650 (0.0117)	0.0283 (0.0004)	1000
FP (W)	0.2471	0.0007	0.0639 (0.0021)	0.0767 (0.0029)	0.3291 (0.0217)	0.0099 (0.0005)	471
FP (k=10)	0.2942	0.0009	0.0369 (0.0009)	0.1238 (0.0013)	0.0271 (0.0056)	0.0167 (0.0003)	848
FP (k=10000)	0.3168	0.0009	0.0364 (0.0009)	0.1464 (0.0012)	0.0080 (0.0030)	0.0227 (0.0004)	876

Table 162: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2867	0.0010	0.0392 (0.0009)	0.1262 (0.0012)	0.0310 (0.0055)	0.0175 (0.0003)	1000
Exp	0.2872	0.0017	0.0426 (0.0010)	0.1267 (0.0013)	0.0700 (0.0081)	0.0179 (0.0004)	1000
Weibull	0.2822	0.0019	0.0393 (0.0009)	0.1218 (0.0012)	0.1050 (0.0097)	0.0164 (0.0003)	1000
Gompertz	0.3027	0.0019	0.0453 (0.0064)	0.1422 (0.0089)	0.0000 (0.0000)	0.0222 (0.0026)	26
RP (3)	0.2816	0.0020	0.0391 (0.0009)	0.1212 (0.0012)	0.1107 (0.0100)	0.0162 (0.0003)	994
RP (5)	0.2833	0.0020	0.0389 (0.0009)	0.1228 (0.0012)	0.1067 (0.0098)	0.0166 (0.0003)	993
RP (9)	0.2865	0.0020	0.0377 (0.0009)	0.1260 (0.0012)	0.0888 (0.0094)	0.0173 (0.0003)	923
RP (P)	0.2834	0.0020	0.0390 (0.0009)	0.1229 (0.0012)	0.1056 (0.0097)	0.0166 (0.0003)	994
FP (W)	0.2822	0.0009	0.0393 (0.0009)	0.1218 (0.0012)	0.0330 (0.0056)	0.0164 (0.0003)	1000
FP (k=10)	0.2892	0.0008	0.0491 (0.0011)	0.1288 (0.0016)	0.0503 (0.0069)	0.0190 (0.0004)	995
FP (k=10000)	0.3658	0.0015	0.0507 (0.0068)	0.2053 (0.0094)	0.0345 (0.0339)	0.0446 (0.0036)	29
Model frailty: Normal							
Cox	0.3519	0.0015	0.0994 (0.0023)	0.1914 (0.0032)	0.0082 (0.0029)	0.0465 (0.0018)	972
Exp	0.3466	0.0028	0.0403 (0.0009)	0.1861 (0.0013)	0.0118 (0.0035)	0.0363 (0.0005)	929
Weibull	0.3208	0.0027	0.0371 (0.0008)	0.1604 (0.0012)	0.0299 (0.0055)	0.0271 (0.0004)	970
Gompertz	0.3587	0.0033	0.0496 (0.0101)	0.1983 (0.0138)	0.0000 (0.0000)	0.0416 (0.0053)	13
RP (3)	0.3313	0.0039	0.0466 (0.0010)	0.1709 (0.0015)	0.2062 (0.0128)	0.0314 (0.0005)	999
RP (5)	0.3337	0.0039	0.0477 (0.0011)	0.1733 (0.0015)	0.2014 (0.0127)	0.0323 (0.0005)	998
RP (9)	0.3278	0.0039	0.0604 (0.0014)	0.1673 (0.0019)	0.2211 (0.0132)	0.0316 (0.0005)	986
RP (P)	0.3343	0.0040	0.0474 (0.0011)	0.1738 (0.0015)	0.2066 (0.0128)	0.0325 (0.0005)	997
FP (W)	0.2490	0.0007	0.0672 (0.0020)	0.0885 (0.0029)	0.2729 (0.0191)	0.0123 (0.0006)	546
FP (k=10)	0.3260	0.0010	0.0395 (0.0010)	0.1656 (0.0014)	0.0036 (0.0021)	0.0290 (0.0005)	836
FP (k=10000)	0.3587	0.0009	0.0395 (0.0010)	0.1982 (0.0014)	0.0025 (0.0017)	0.0409 (0.0006)	808

Table 163: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2603	0.0007	0.0317 (0.0007)	0.0709 (0.0010)	0.2643 (0.0140)	0.0060 (0.0002)	999
Exp	0.2657	0.0015	0.0329 (0.0007)	0.0763 (0.0010)	0.5270 (0.0158)	0.0069 (0.0002)	1000
Weibull	0.2643	0.0014	0.0332 (0.0007)	0.0749 (0.0010)	0.5080 (0.0158)	0.0067 (0.0002)	1000
Gompertz	0.2874	0.0020	0.0421 (0.0039)	0.0980 (0.0055)	0.4138 (0.0647)	0.0114 (0.0012)	58
RP (3)	0.2544	0.0013	0.0313 (0.0007)	0.0650 (0.0010)	0.6084 (0.0155)	0.0052 (0.0001)	996
RP (5)	0.2549	0.0013	0.0314 (0.0007)	0.0655 (0.0010)	0.6044 (0.0155)	0.0053 (0.0001)	996
RP (9)	0.2561	0.0014	0.0316 (0.0007)	0.0667 (0.0010)	0.5994 (0.0155)	0.0054 (0.0002)	996
RP (P)	0.2562	0.0014	0.0315 (0.0007)	0.0668 (0.0010)	0.5964 (0.0155)	0.0055 (0.0002)	996
FP (W)	0.2643	0.0007	0.0332 (0.0007)	0.0749 (0.0010)	0.2260 (0.0132)	0.0067 (0.0002)	1000
FP (k=10)	0.2592	0.0007	0.0320 (0.0007)	0.0698 (0.0010)	0.2620 (0.0139)	0.0059 (0.0002)	1000
FP (k=10000)	0.2997	0.0009	0.0424 (0.0106)	0.1103 (0.0141)	0.0000 (0.0000)	0.0138 (0.0032)	9
Model frailty: Normal							
Cox	0.3455	0.0013	0.0958 (0.0022)	0.1561 (0.0031)	0.0175 (0.0042)	0.0336 (0.0015)	973
Exp	0.3195	0.0025	0.0333 (0.0008)	0.1301 (0.0011)	0.0990 (0.0096)	0.0180 (0.0003)	960
Weibull	0.3250	0.0025	0.0339 (0.0008)	0.1356 (0.0011)	0.0746 (0.0085)	0.0195 (0.0003)	952
Gompertz	0.3348	0.0027	0.0377 (0.0042)	0.1454 (0.0059)	0.0488 (0.0336)	0.0225 (0.0018)	41
RP (3)	0.3199	0.0031	0.0386 (0.0009)	0.1305 (0.0012)	0.3350 (0.0149)	0.0185 (0.0003)	1000
RP (5)	0.3178	0.0030	0.0382 (0.0009)	0.1284 (0.0012)	0.3260 (0.0148)	0.0179 (0.0003)	1000
RP (9)	0.3196	0.0029	0.0381 (0.0009)	0.1302 (0.0012)	0.3030 (0.0145)	0.0184 (0.0003)	1000
RP (P)	0.3204	0.0029	0.0379 (0.0008)	0.1310 (0.0012)	0.3020 (0.0145)	0.0186 (0.0003)	1000
FP (W)	0.2572	0.0007	0.0649 (0.0022)	0.0678 (0.0031)	0.3318 (0.0228)	0.0088 (0.0005)	428
FP (k=10)	0.2893	0.0008	0.0372 (0.0009)	0.0999 (0.0013)	0.0895 (0.0099)	0.0114 (0.0003)	838
FP (k=10000)	0.3122	0.0008	0.0320 (0.0008)	0.1229 (0.0011)	0.0136 (0.0041)	0.0161 (0.0003)	811

Table 164: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2576	0.0007	0.0324 (0.0007)	0.0684 (0.0010)	0.3030 (0.0145)	0.0057 (0.0002)	1000
Exp	0.2455	0.0019	0.0319 (0.0007)	0.0562 (0.0010)	0.8670 (0.0107)	0.0042 (0.0001)	1000
Weibull	0.2448	0.0012	0.0301 (0.0007)	0.0555 (0.0010)	0.6860 (0.0147)	0.0040 (0.0001)	1000
Gompertz	0.2499	0.0020	0.0317 (0.0012)	0.0607 (0.0017)	0.8537 (0.0195)	0.0047 (0.0003)	328
RP (3)	0.2539	0.0013	0.0329 (0.0009)	0.0647 (0.0012)	0.6044 (0.0181)	0.0053 (0.0002)	728
RP (5)	0.2541	0.0012	0.0321 (0.0007)	0.0649 (0.0010)	0.5759 (0.0159)	0.0052 (0.0002)	962
RP (9)	0.2541	0.0012	0.0322 (0.0007)	0.0649 (0.0010)	0.5683 (0.0158)	0.0052 (0.0002)	989
RP (P)	0.2530	0.0012	0.0319 (0.0007)	0.0638 (0.0010)	0.5861 (0.0156)	0.0051 (0.0001)	993
FP (W)	0.2448	0.0007	0.0301 (0.0007)	0.0556 (0.0010)	0.4420 (0.0157)	0.0040 (0.0001)	1000
FP (k=10)	0.2194	0.0005	0.0373 (0.0008)	0.0302 (0.0012)	0.6250 (0.0153)	0.0023 (0.0001)	1000
FP (k=10000)	0.0710	0.0001	0.0740 (0.0101)	-0.1182 (0.0140)	0.0714 (0.0487)	0.0192 (0.0017)	28
Model frailty: Normal							
Cox	0.3348	0.0012	0.0913 (0.0021)	0.1456 (0.0029)	0.0456 (0.0066)	0.0295 (0.0013)	986
Exp	0.2528	0.0021	0.0328 (0.0007)	0.0636 (0.0010)	0.8235 (0.0121)	0.0051 (0.0002)	986
Weibull	0.2820	0.0018	0.0318 (0.0007)	0.0928 (0.0010)	0.3707 (0.0159)	0.0096 (0.0002)	928
Gompertz	0.2551	0.0021	0.0325 (0.0013)	0.0659 (0.0019)	0.8136 (0.0227)	0.0054 (0.0003)	295
RP (3)	0.3067	0.0025	0.0503 (0.0013)	0.1175 (0.0018)	0.2836 (0.0164)	0.0163 (0.0004)	758
RP (5)	0.3101	0.0027	0.0457 (0.0010)	0.1209 (0.0015)	0.3266 (0.0150)	0.0167 (0.0003)	983
RP (9)	0.3119	0.0028	0.0407 (0.0009)	0.1227 (0.0013)	0.3487 (0.0151)	0.0167 (0.0003)	998
RP (P)	0.3092	0.0027	0.0392 (0.0009)	0.1200 (0.0012)	0.3540 (0.0151)	0.0159 (0.0003)	1000
FP (W)	0.2267	0.0006	0.0547 (0.0019)	0.0374 (0.0026)	0.4685 (0.0241)	0.0044 (0.0003)	429
FP (k=10)	0.2795	0.0008	0.0395 (0.0010)	0.0903 (0.0013)	0.1645 (0.0126)	0.0097 (0.0003)	863
FP (k=10000)	0.2741	0.0006	0.0324 (0.0008)	0.0849 (0.0012)	0.1206 (0.0117)	0.0083 (0.0002)	771

Table 165: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2788	0.0009	0.0375 (0.0008)	0.1110 (0.0012)	0.0521 (0.0070)	0.0137 (0.0003)	999
Exp	0.2813	0.0017	0.0385 (0.0009)	0.1135 (0.0012)	0.1190 (0.0102)	0.0144 (0.0003)	1000
Weibull	0.2799	0.0019	0.0372 (0.0008)	0.1120 (0.0012)	0.1600 (0.0116)	0.0139 (0.0003)	1000
Gompertz	0.2830	0.0018	0.0535 (0.0092)	0.1151 (0.0126)	0.2778 (0.1056)	0.0159 (0.0034)	18
RP (3)	0.2738	0.0018	0.0374 (0.0008)	0.1060 (0.0012)	0.1930 (0.0125)	0.0126 (0.0003)	995
RP (5)	0.2769	0.0018	0.0373 (0.0008)	0.1091 (0.0012)	0.1670 (0.0118)	0.0133 (0.0003)	994
RP (9)	0.2781	0.0018	0.0363 (0.0008)	0.1103 (0.0012)	0.1535 (0.0116)	0.0135 (0.0003)	964
RP (P)	0.2763	0.0018	0.0373 (0.0008)	0.1084 (0.0012)	0.1719 (0.0120)	0.0131 (0.0003)	995
FP (W)	0.2799	0.0009	0.0372 (0.0008)	0.1120 (0.0012)	0.0470 (0.0067)	0.0139 (0.0003)	1000
FP (k=10)	0.2919	0.0008	0.0407 (0.0009)	0.1241 (0.0013)	0.0320 (0.0056)	0.0170 (0.0003)	1000
FP (k=10000)	0.3373	0.0014	0.0465 (0.0047)	0.1695 (0.0065)	0.0000 (0.0000)	0.0308 (0.0023)	51
Model frailty: Normal							
Cox	0.3576	0.0015	0.1075 (0.0024)	0.1898 (0.0034)	0.0051 (0.0023)	0.0476 (0.0019)	978
Exp	0.3351	0.0027	0.0377 (0.0009)	0.1673 (0.0012)	0.0193 (0.0045)	0.0294 (0.0004)	935
Weibull	0.3203	0.0026	0.0369 (0.0008)	0.1524 (0.0012)	0.0391 (0.0063)	0.0246 (0.0004)	946
Gompertz	0.3334	0.0028	0.0431 (0.0079)	0.1655 (0.0108)	0.0625 (0.0605)	0.0291 (0.0034)	16
RP (3)	0.3282	0.0035	0.0435 (0.0010)	0.1603 (0.0014)	0.2014 (0.0127)	0.0276 (0.0004)	998
RP (5)	0.3356	0.0036	0.0446 (0.0010)	0.1677 (0.0014)	0.1825 (0.0122)	0.0301 (0.0005)	997
RP (9)	0.3345	0.0038	0.0534 (0.0012)	0.1666 (0.0017)	0.1958 (0.0126)	0.0306 (0.0005)	996
RP (P)	0.3377	0.0038	0.0449 (0.0010)	0.1698 (0.0014)	0.1978 (0.0126)	0.0308 (0.0005)	996
FP (W)	0.2456	0.0007	0.0676 (0.0021)	0.0778 (0.0030)	0.3366 (0.0208)	0.0106 (0.0005)	514
FP (k=10)	0.3177	0.0010	0.0399 (0.0010)	0.1499 (0.0014)	0.0058 (0.0026)	0.0240 (0.0004)	860
FP (k=10000)	0.3445	0.0009	0.0382 (0.0009)	0.1767 (0.0013)	0.0024 (0.0017)	0.0327 (0.0005)	848

Table 166: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5053	0.0022	0.0651 (0.0015)	0.0016 (0.0021)	0.8455 (0.0115)	0.0042 (0.0002)	990
Exp	0.5062	0.0041	0.0648 (0.0015)	0.0024 (0.0021)	0.9400 (0.0075)	0.0042 (0.0002)	1000
Weibull	0.5064	0.0041	0.0649 (0.0015)	0.0027 (0.0021)	0.9390 (0.0076)	0.0042 (0.0002)	1000
Gompertz	0.5026	0.0041	0.0640 (0.0020)	-0.0011 (0.0029)	0.9442 (0.0102)	0.0041 (0.0003)	502
RP (3)	0.5062	0.0041	0.0649 (0.0015)	0.0025 (0.0021)	0.9400 (0.0075)	0.0042 (0.0002)	1000
RP (5)	0.5062	0.0041	0.0649 (0.0015)	0.0025 (0.0021)	0.9410 (0.0075)	0.0042 (0.0002)	1000
RP (9)	0.5062	0.0041	0.0649 (0.0015)	0.0025 (0.0021)	0.9410 (0.0075)	0.0042 (0.0002)	1000
RP (P)	0.5063	0.0041	0.0649 (0.0015)	0.0026 (0.0021)	0.9390 (0.0076)	0.0042 (0.0002)	1000
FP (W)	0.5064	0.0022	0.0649 (0.0015)	0.0027 (0.0021)	0.8430 (0.0115)	0.0042 (0.0002)	1000
FP (k=10)	0.5018	0.0021	0.0657 (0.0015)	-0.0019 (0.0021)	0.8340 (0.0118)	0.0043 (0.0002)	1000
FP (k=10000)	0.5044	0.0021	0.0652 (0.0015)	0.0007 (0.0021)	0.8390 (0.0116)	0.0042 (0.0002)	1000
Model frailty: Normal							
Cox	0.4697	0.0018	0.0710 (0.0016)	-0.0340 (0.0022)	0.7050 (0.0144)	0.0062 (0.0003)	1000
Exp	0.4735	0.0037	0.0730 (0.0016)	-0.0302 (0.0023)	0.8649 (0.0108)	0.0062 (0.0003)	999
Weibull	0.4737	0.0037	0.0730 (0.0016)	-0.0300 (0.0023)	0.8669 (0.0107)	0.0062 (0.0003)	999
Gompertz	0.4653	0.0036	0.0700 (0.0022)	-0.0384 (0.0032)	0.8627 (0.0156)	0.0064 (0.0004)	488
RP (3)	0.4716	0.0038	0.0744 (0.0017)	-0.0321 (0.0024)	0.8640 (0.0108)	0.0066 (0.0003)	1000
RP (5)	0.4716	0.0038	0.0743 (0.0017)	-0.0321 (0.0024)	0.8630 (0.0109)	0.0066 (0.0003)	1000
RP (9)	0.4717	0.0038	0.0744 (0.0017)	-0.0320 (0.0024)	0.8630 (0.0109)	0.0066 (0.0003)	1000
RP (P)	0.4718	0.0038	0.0744 (0.0017)	-0.0320 (0.0024)	0.8640 (0.0108)	0.0065 (0.0003)	1000
FP (W)	0.3534	0.0012	0.1215 (0.0033)	-0.1503 (0.0047)	0.3218 (0.0181)	0.0373 (0.0015)	665
FP (k=10)	0.4576	0.0018	0.0769 (0.0018)	-0.0461 (0.0025)	0.6357 (0.0157)	0.0080 (0.0004)	936
FP (k=10000)	0.4699	0.0017	0.0685 (0.0016)	-0.0338 (0.0022)	0.6966 (0.0148)	0.0058 (0.0003)	969

Table 167: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5118	0.0024	0.0695 (0.0016)	-0.0024 (0.0022)	0.8372 (0.0118)	0.0048 (0.0002)	983
Exp	0.5332	0.0048	0.0718 (0.0016)	0.0189 (0.0023)	0.9280 (0.0082)	0.0055 (0.0002)	1000
Weibull	0.5142	0.0048	0.0695 (0.0016)	0.0000 (0.0022)	0.9410 (0.0075)	0.0048 (0.0002)	1000
Gompertz	0.5283	0.0048	0.0710 (0.0024)	0.0141 (0.0033)	0.9386 (0.0112)	0.0052 (0.0003)	456
RP (3)	0.5137	0.0048	0.0694 (0.0016)	-0.0005 (0.0022)	0.9420 (0.0074)	0.0048 (0.0002)	1000
RP (5)	0.5137	0.0048	0.0694 (0.0016)	-0.0005 (0.0022)	0.9420 (0.0074)	0.0048 (0.0002)	1000
RP (9)	0.5138	0.0048	0.0694 (0.0016)	-0.0005 (0.0022)	0.9420 (0.0074)	0.0048 (0.0002)	1000
RP (P)	0.5139	0.0048	0.0694 (0.0016)	-0.0003 (0.0022)	0.9420 (0.0074)	0.0048 (0.0002)	1000
FP (W)	0.5142	0.0024	0.0695 (0.0016)	0.0000 (0.0022)	0.8380 (0.0117)	0.0048 (0.0002)	1000
FP (k=10)	0.4831	0.0021	0.0723 (0.0016)	-0.0311 (0.0023)	0.7250 (0.0141)	0.0062 (0.0003)	1000
FP (k=10000)	0.4897	0.0021	0.0794 (0.0018)	-0.0245 (0.0025)	0.7070 (0.0144)	0.0069 (0.0003)	1000
Model frailty: Normal							
Cox	0.4687	0.0020	0.0750 (0.0017)	-0.0456 (0.0024)	0.6530 (0.0151)	0.0077 (0.0003)	1000
Exp	0.4935	0.0042	0.0800 (0.0018)	-0.0207 (0.0025)	0.8547 (0.0112)	0.0068 (0.0003)	998
Weibull	0.4729	0.0042	0.0769 (0.0017)	-0.0413 (0.0024)	0.8238 (0.0121)	0.0076 (0.0003)	999
Gompertz	0.4892	0.0042	0.0786 (0.0026)	-0.0250 (0.0037)	0.8635 (0.0162)	0.0068 (0.0004)	447
RP (3)	0.4712	0.0042	0.0775 (0.0017)	-0.0431 (0.0025)	0.8210 (0.0121)	0.0079 (0.0003)	1000
RP (5)	0.4712	0.0042	0.0775 (0.0017)	-0.0430 (0.0025)	0.8200 (0.0121)	0.0079 (0.0003)	1000
RP (9)	0.4713	0.0042	0.0775 (0.0017)	-0.0429 (0.0025)	0.8210 (0.0121)	0.0078 (0.0003)	1000
RP (P)	0.4714	0.0042	0.0776 (0.0017)	-0.0428 (0.0025)	0.8220 (0.0121)	0.0078 (0.0003)	1000
FP (W)	0.3642	0.0014	0.1295 (0.0033)	-0.1500 (0.0047)	0.3303 (0.0171)	0.0393 (0.0015)	760
FP (k=10)	0.4607	0.0020	0.0770 (0.0018)	-0.0535 (0.0025)	0.6314 (0.0156)	0.0088 (0.0004)	955
FP (k=10000)	0.4721	0.0019	0.0723 (0.0016)	-0.0421 (0.0023)	0.6711 (0.0151)	0.0070 (0.0003)	967

Table 168: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4881	0.0018	0.0572 (0.0013)	0.0043 (0.0018)	0.8665 (0.0108)	0.0033 (0.0002)	989
Exp	0.4652	0.0033	0.0541 (0.0012)	-0.0185 (0.0017)	0.9510 (0.0068)	0.0033 (0.0001)	1000
Weibull	0.4798	0.0032	0.0552 (0.0012)	-0.0039 (0.0017)	0.9570 (0.0064)	0.0031 (0.0001)	1000
Gompertz	0.4709	0.0033	0.0581 (0.0016)	-0.0128 (0.0023)	0.9414 (0.0092)	0.0035 (0.0002)	649
RP (3)	0.4867	0.0031	0.0569 (0.0013)	0.0029 (0.0018)	0.9520 (0.0068)	0.0032 (0.0002)	1000
RP (5)	0.4871	0.0031	0.0570 (0.0013)	0.0034 (0.0018)	0.9510 (0.0068)	0.0033 (0.0002)	1000
RP (9)	0.4873	0.0031	0.0570 (0.0013)	0.0036 (0.0018)	0.9500 (0.0069)	0.0033 (0.0002)	1000
RP (P)	0.4860	0.0031	0.0567 (0.0013)	0.0023 (0.0018)	0.9510 (0.0068)	0.0032 (0.0001)	1000
FP (W)	0.4798	0.0019	0.0552 (0.0012)	-0.0039 (0.0017)	0.8770 (0.0104)	0.0031 (0.0001)	1000
FP (k=10)	0.4864	0.0018	0.0574 (0.0013)	0.0026 (0.0018)	0.8640 (0.0108)	0.0033 (0.0002)	1000
FP (k=10000)	0.4860	0.0018	0.0568 (0.0013)	0.0023 (0.0018)	0.8630 (0.0109)	0.0032 (0.0001)	1000
Model frailty: Normal							
Cox	0.4640	0.0016	0.0637 (0.0014)	-0.0198 (0.0020)	0.7427 (0.0138)	0.0044 (0.0002)	999
Exp	0.4435	0.0031	0.0627 (0.0014)	-0.0402 (0.0020)	0.8498 (0.0113)	0.0055 (0.0002)	999
Weibull	0.4628	0.0031	0.0636 (0.0014)	-0.0209 (0.0020)	0.8918 (0.0098)	0.0045 (0.0002)	998
Gompertz	0.4477	0.0031	0.0677 (0.0019)	-0.0360 (0.0027)	0.8344 (0.0148)	0.0059 (0.0003)	628
RP (3)	0.4682	0.0030	0.0654 (0.0015)	-0.0155 (0.0021)	0.8940 (0.0097)	0.0045 (0.0002)	1000
RP (5)	0.4682	0.0030	0.0656 (0.0015)	-0.0155 (0.0021)	0.8940 (0.0097)	0.0045 (0.0002)	1000
RP (9)	0.4683	0.0031	0.0657 (0.0015)	-0.0154 (0.0021)	0.8930 (0.0098)	0.0045 (0.0002)	1000
RP (P)	0.4677	0.0030	0.0653 (0.0015)	-0.0160 (0.0021)	0.8940 (0.0097)	0.0045 (0.0002)	1000
FP (W)	0.3436	0.0011	0.1153 (0.0033)	-0.1402 (0.0046)	0.3092 (0.0185)	0.0329 (0.0014)	621
FP (k=10)	0.4513	0.0015	0.0662 (0.0015)	-0.0324 (0.0022)	0.6897 (0.0151)	0.0054 (0.0002)	941
FP (k=10000)	0.4539	0.0014	0.0619 (0.0014)	-0.0299 (0.0020)	0.6768 (0.0151)	0.0047 (0.0002)	956

Table 169: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4633	0.0017	0.0530 (0.0012)	0.0041 (0.0017)	0.8701 (0.0107)	0.0028 (0.0001)	993
Exp	0.4293	0.0033	0.0527 (0.0012)	-0.0299 (0.0017)	0.9240 (0.0084)	0.0037 (0.0002)	1000
Weibull	0.4700	0.0029	0.0546 (0.0012)	0.0108 (0.0017)	0.9450 (0.0072)	0.0031 (0.0001)	1000
Gompertz	0.4467	0.0032	0.0625 (0.0016)	-0.0125 (0.0023)	0.9106 (0.0106)	0.0041 (0.0002)	727
RP (3)	0.4620	0.0029	0.0526 (0.0012)	0.0028 (0.0017)	0.9600 (0.0062)	0.0028 (0.0001)	1000
RP (5)	0.4626	0.0029	0.0528 (0.0012)	0.0034 (0.0017)	0.9580 (0.0063)	0.0028 (0.0001)	1000
RP (9)	0.4627	0.0029	0.0528 (0.0012)	0.0035 (0.0017)	0.9570 (0.0064)	0.0028 (0.0001)	1000
RP (P)	0.4628	0.0029	0.0528 (0.0012)	0.0036 (0.0017)	0.9570 (0.0064)	0.0028 (0.0001)	1000
FP (W)	0.4700	0.0016	0.0546 (0.0012)	0.0108 (0.0017)	0.8460 (0.0114)	0.0031 (0.0001)	1000
FP (k=10)	0.4501	0.0016	0.0552 (0.0012)	-0.0091 (0.0017)	0.8190 (0.0122)	0.0031 (0.0001)	1000
FP (k=10000)	0.0773	0.0000	0.0182 (0.0004)	-0.3819 (0.0006)	0.0000 (0.0000)	0.1462 (0.0004)	996
Model frailty: Normal							
Cox	0.4415	0.0015	0.0596 (0.0013)	-0.0177 (0.0019)	0.7670 (0.0134)	0.0039 (0.0002)	1000
Exp	0.4026	0.0030	0.0603 (0.0014)	-0.0566 (0.0019)	0.7828 (0.0130)	0.0068 (0.0003)	999
Weibull	0.4518	0.0028	0.0623 (0.0014)	-0.0074 (0.0020)	0.8858 (0.0101)	0.0039 (0.0002)	998
Gompertz	0.4179	0.0030	0.0711 (0.0019)	-0.0413 (0.0027)	0.7928 (0.0154)	0.0068 (0.0003)	690
RP (3)	0.4457	0.0028	0.0613 (0.0014)	-0.0135 (0.0019)	0.8850 (0.0101)	0.0039 (0.0002)	1000
RP (5)	0.4453	0.0028	0.0617 (0.0014)	-0.0139 (0.0020)	0.8810 (0.0102)	0.0040 (0.0002)	1000
RP (9)	0.4453	0.0028	0.0618 (0.0014)	-0.0139 (0.0020)	0.8820 (0.0102)	0.0040 (0.0002)	1000
RP (P)	0.4454	0.0028	0.0617 (0.0014)	-0.0138 (0.0020)	0.8820 (0.0102)	0.0040 (0.0002)	1000
FP (W)	0.3358	0.0009	0.1055 (0.0031)	-0.1234 (0.0045)	0.3310 (0.0198)	0.0263 (0.0012)	562
FP (k=10)	0.4267	0.0014	0.0622 (0.0014)	-0.0325 (0.0020)	0.6950 (0.0150)	0.0049 (0.0002)	941
FP (k=10000)	0.3888	0.0011	0.0666 (0.0015)	-0.0704 (0.0021)	0.4234 (0.0158)	0.0094 (0.0003)	973

Table 170: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5131	0.0023	0.0690 (0.0016)	0.0047 (0.0022)	0.8286 (0.0120)	0.0048 (0.0002)	986
Exp	0.5244	0.0044	0.0704 (0.0016)	0.0160 (0.0022)	0.9290 (0.0081)	0.0052 (0.0003)	1000
Weibull	0.5158	0.0044	0.0697 (0.0016)	0.0075 (0.0022)	0.9370 (0.0077)	0.0049 (0.0002)	1000
Gompertz	0.5279	0.0044	0.0701 (0.0024)	0.0196 (0.0033)	0.9368 (0.0116)	0.0053 (0.0004)	443
RP (3)	0.5148	0.0044	0.0691 (0.0015)	0.0064 (0.0022)	0.9380 (0.0076)	0.0048 (0.0002)	1000
RP (5)	0.5145	0.0044	0.0689 (0.0015)	0.0061 (0.0022)	0.9380 (0.0076)	0.0048 (0.0002)	1000
RP (9)	0.5143	0.0044	0.0689 (0.0015)	0.0060 (0.0022)	0.9370 (0.0077)	0.0048 (0.0002)	1000
RP (P)	0.5146	0.0044	0.0690 (0.0015)	0.0062 (0.0022)	0.9370 (0.0077)	0.0048 (0.0002)	1000
FP (W)	0.5158	0.0023	0.0697 (0.0016)	0.0075 (0.0022)	0.8220 (0.0121)	0.0049 (0.0002)	1000
FP (k=10)	0.5046	0.0022	0.0708 (0.0016)	-0.0038 (0.0022)	0.8030 (0.0126)	0.0050 (0.0002)	1000
FP (k=10000)	0.5103	0.0023	0.0697 (0.0016)	0.0019 (0.0022)	0.8200 (0.0121)	0.0049 (0.0002)	1000
Model frailty: Normal							
Cox	0.4760	0.0019	0.0757 (0.0017)	-0.0323 (0.0024)	0.6830 (0.0147)	0.0068 (0.0003)	1000
Exp	0.4891	0.0039	0.0788 (0.0018)	-0.0193 (0.0025)	0.8566 (0.0111)	0.0066 (0.0003)	997
Weibull	0.4794	0.0039	0.0779 (0.0017)	-0.0290 (0.0025)	0.8495 (0.0113)	0.0069 (0.0003)	997
Gompertz	0.4890	0.0039	0.0770 (0.0026)	-0.0194 (0.0037)	0.8673 (0.0162)	0.0063 (0.0004)	437
RP (3)	0.4778	0.0040	0.0786 (0.0018)	-0.0306 (0.0025)	0.8480 (0.0114)	0.0071 (0.0003)	1000
RP (5)	0.4782	0.0040	0.0784 (0.0018)	-0.0302 (0.0025)	0.8490 (0.0113)	0.0071 (0.0003)	1000
RP (9)	0.4783	0.0040	0.0783 (0.0018)	-0.0301 (0.0025)	0.8480 (0.0114)	0.0070 (0.0003)	1000
RP (P)	0.4781	0.0040	0.0785 (0.0018)	-0.0303 (0.0025)	0.8480 (0.0114)	0.0071 (0.0003)	1000
FP (W)	0.3667	0.0013	0.1256 (0.0034)	-0.1417 (0.0047)	0.3343 (0.0178)	0.0358 (0.0015)	700
FP (k=10)	0.4632	0.0019	0.0789 (0.0018)	-0.0451 (0.0026)	0.6519 (0.0154)	0.0083 (0.0004)	951
FP (k=10000)	0.4794	0.0019	0.0714 (0.0016)	-0.0290 (0.0023)	0.7264 (0.0144)	0.0059 (0.0003)	965

Table 171: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5237	0.0021	0.0684 (0.0016)	-0.0184 (0.0022)	0.8111 (0.0126)	0.0050 (0.0002)	969
Exp	0.5230	0.0033	0.0694 (0.0016)	-0.0190 (0.0022)	0.8650 (0.0108)	0.0052 (0.0002)	1000
Weibull	0.5230	0.0033	0.0693 (0.0016)	-0.0191 (0.0022)	0.8660 (0.0108)	0.0052 (0.0002)	1000
Gompertz	0.5272	0.0033	0.0710 (0.0024)	-0.0148 (0.0034)	0.8510 (0.0169)	0.0053 (0.0003)	443
RP (3)	0.5231	0.0033	0.0694 (0.0016)	-0.0190 (0.0022)	0.8660 (0.0108)	0.0052 (0.0002)	1000
RP (5)	0.5230	0.0033	0.0693 (0.0016)	-0.0191 (0.0022)	0.8670 (0.0107)	0.0052 (0.0002)	1000
RP (9)	0.5230	0.0033	0.0693 (0.0016)	-0.0191 (0.0022)	0.8670 (0.0107)	0.0052 (0.0002)	1000
RP (P)	0.5231	0.0033	0.0692 (0.0015)	-0.0189 (0.0022)	0.8677 (0.0107)	0.0051 (0.0002)	998
FP (W)	0.5230	0.0021	0.0693 (0.0016)	-0.0191 (0.0022)	0.8010 (0.0126)	0.0052 (0.0002)	1000
FP (k=10)	0.5249	0.0021	0.0685 (0.0015)	-0.0172 (0.0022)	0.8140 (0.0123)	0.0050 (0.0002)	1000
FP (k=10000)	0.5257	0.0021	0.0679 (0.0015)	-0.0164 (0.0021)	0.8118 (0.0124)	0.0049 (0.0002)	999
Model frailty: Normal							
Cox	0.5410	0.0022	0.0622 (0.0014)	-0.0011 (0.0020)	0.8640 (0.0108)	0.0039 (0.0002)	1000
Exp	0.5473	0.0035	0.0615 (0.0014)	0.0052 (0.0019)	0.9379 (0.0076)	0.0038 (0.0002)	999
Weibull	0.5473	0.0035	0.0614 (0.0014)	0.0052 (0.0019)	0.9380 (0.0076)	0.0038 (0.0002)	1000
Gompertz	0.5475	0.0035	0.0629 (0.0021)	0.0055 (0.0030)	0.9327 (0.0119)	0.0040 (0.0003)	446
RP (3)	0.5474	0.0034	0.0612 (0.0014)	0.0053 (0.0019)	0.9360 (0.0077)	0.0038 (0.0002)	1000
RP (5)	0.5473	0.0034	0.0612 (0.0014)	0.0052 (0.0019)	0.9370 (0.0077)	0.0038 (0.0002)	1000
RP (9)	0.5473	0.0034	0.0613 (0.0014)	0.0052 (0.0019)	0.9370 (0.0077)	0.0038 (0.0002)	1000
RP (P)	0.5475	0.0034	0.0612 (0.0014)	0.0054 (0.0019)	0.9370 (0.0077)	0.0038 (0.0002)	1000
FP (W)	0.3979	0.0013	0.1344 (0.0037)	-0.1442 (0.0053)	0.3760 (0.0190)	0.0388 (0.0018)	649
FP (k=10)	0.5185	0.0020	0.0718 (0.0017)	-0.0236 (0.0023)	0.7850 (0.0134)	0.0057 (0.0003)	935
FP (k=10000)	0.5385	0.0019	0.0606 (0.0014)	-0.0036 (0.0020)	0.8427 (0.0118)	0.0037 (0.0002)	947

Table 172: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5517	0.0025	0.0711 (0.0016)	-0.0131 (0.0023)	0.8153 (0.0124)	0.0052 (0.0002)	980
Exp	0.5562	0.0038	0.0829 (0.0019)	-0.0086 (0.0026)	0.8520 (0.0112)	0.0069 (0.0003)	1000
Weibull	0.5507	0.0040	0.0722 (0.0016)	-0.0142 (0.0023)	0.9000 (0.0095)	0.0054 (0.0002)	1000
Gompertz	0.5674	0.0039	0.0749 (0.0026)	0.0026 (0.0037)	0.8958 (0.0152)	0.0056 (0.0004)	403
RP (3)	0.5507	0.0040	0.0721 (0.0016)	-0.0142 (0.0023)	0.8980 (0.0096)	0.0054 (0.0002)	1000
RP (5)	0.5505	0.0040	0.0719 (0.0016)	-0.0143 (0.0023)	0.8950 (0.0097)	0.0054 (0.0002)	1000
RP (9)	0.5505	0.0040	0.0718 (0.0016)	-0.0143 (0.0023)	0.8980 (0.0096)	0.0054 (0.0002)	1000
RP (P)	0.5506	0.0040	0.0719 (0.0016)	-0.0142 (0.0023)	0.8970 (0.0096)	0.0054 (0.0002)	1000
FP (W)	0.5507	0.0025	0.0722 (0.0016)	-0.0141 (0.0023)	0.8090 (0.0124)	0.0054 (0.0002)	1000
FP (k=10)	0.5398	0.0023	0.0721 (0.0016)	-0.0250 (0.0023)	0.7720 (0.0133)	0.0058 (0.0003)	1000
FP (k=10000)	0.5517	0.0023	0.0714 (0.0016)	-0.0131 (0.0023)	0.7929 (0.0129)	0.0053 (0.0002)	980
Model frailty: Normal							
Cox	0.5633	0.0025	0.0630 (0.0014)	-0.0016 (0.0020)	0.8840 (0.0101)	0.0040 (0.0002)	1000
Exp	0.5930	0.0040	0.0649 (0.0015)	0.0282 (0.0021)	0.9290 (0.0081)	0.0050 (0.0002)	1000
Weibull	0.5688	0.0041	0.0624 (0.0014)	0.0040 (0.0020)	0.9510 (0.0068)	0.0039 (0.0002)	1000
Gompertz	0.5957	0.0040	0.0641 (0.0023)	0.0309 (0.0032)	0.9257 (0.0130)	0.0051 (0.0003)	404
RP (3)	0.5681	0.0041	0.0625 (0.0014)	0.0033 (0.0020)	0.9500 (0.0069)	0.0039 (0.0002)	1000
RP (5)	0.5679	0.0041	0.0625 (0.0014)	0.0031 (0.0020)	0.9510 (0.0068)	0.0039 (0.0002)	1000
RP (9)	0.5679	0.0041	0.0625 (0.0014)	0.0031 (0.0020)	0.9500 (0.0069)	0.0039 (0.0002)	1000
RP (P)	0.5680	0.0041	0.0625 (0.0014)	0.0032 (0.0020)	0.9500 (0.0069)	0.0039 (0.0002)	1000
FP (W)	0.4294	0.0016	0.1424 (0.0038)	-0.1354 (0.0054)	0.4113 (0.0187)	0.0386 (0.0018)	693
FP (k=10)	0.5369	0.0023	0.0760 (0.0018)	-0.0279 (0.0025)	0.7908 (0.0133)	0.0066 (0.0004)	932
FP (k=10000)	0.5617	0.0021	0.0630 (0.0014)	-0.0031 (0.0020)	0.8496 (0.0115)	0.0040 (0.0002)	964

Table 173: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4723	0.0016	0.0626 (0.0014)	-0.0316 (0.0020)	0.7284 (0.0143)	0.0049 (0.0002)	972
Exp	0.4550	0.0026	0.0591 (0.0013)	-0.0488 (0.0019)	0.7760 (0.0132)	0.0059 (0.0002)	1000
Weibull	0.4591	0.0024	0.0643 (0.0014)	-0.0447 (0.0020)	0.7620 (0.0135)	0.0061 (0.0003)	1000
Gompertz	0.4657	0.0027	0.0602 (0.0018)	-0.0381 (0.0025)	0.8313 (0.0158)	0.0051 (0.0003)	563
RP (3)	0.4688	0.0024	0.0639 (0.0014)	-0.0351 (0.0020)	0.7840 (0.0130)	0.0053 (0.0002)	1000
RP (5)	0.4700	0.0024	0.0640 (0.0014)	-0.0339 (0.0020)	0.7880 (0.0129)	0.0052 (0.0002)	1000
RP (9)	0.4703	0.0024	0.0640 (0.0014)	-0.0336 (0.0020)	0.7890 (0.0129)	0.0052 (0.0002)	1000
RP (P)	0.4684	0.0024	0.0638 (0.0014)	-0.0355 (0.0020)	0.7826 (0.0131)	0.0053 (0.0002)	998
FP (W)	0.4591	0.0017	0.0643 (0.0014)	-0.0447 (0.0020)	0.6750 (0.0148)	0.0061 (0.0003)	1000
FP (k=10)	0.4739	0.0016	0.0633 (0.0014)	-0.0300 (0.0020)	0.7270 (0.0141)	0.0049 (0.0002)	1000
FP (k=10000)	0.4777	0.0016	0.0588 (0.0013)	-0.0262 (0.0019)	0.7523 (0.0139)	0.0041 (0.0002)	965
Model frailty: Normal							
Cox	0.4993	0.0018	0.0542 (0.0012)	-0.0046 (0.0017)	0.8740 (0.0105)	0.0030 (0.0001)	1000
Exp	0.4809	0.0029	0.0501 (0.0011)	-0.0229 (0.0016)	0.9379 (0.0076)	0.0030 (0.0001)	999
Weibull	0.4959	0.0029	0.0526 (0.0012)	-0.0079 (0.0017)	0.9469 (0.0071)	0.0028 (0.0001)	998
Gompertz	0.4890	0.0029	0.0517 (0.0016)	-0.0148 (0.0022)	0.9513 (0.0091)	0.0029 (0.0002)	554
RP (3)	0.5029	0.0028	0.0543 (0.0012)	-0.0010 (0.0017)	0.9460 (0.0071)	0.0029 (0.0001)	1000
RP (5)	0.5038	0.0028	0.0544 (0.0012)	-0.0001 (0.0017)	0.9470 (0.0071)	0.0030 (0.0001)	1000
RP (9)	0.5041	0.0028	0.0544 (0.0012)	0.0003 (0.0017)	0.9490 (0.0070)	0.0030 (0.0001)	1000
RP (P)	0.5027	0.0028	0.0541 (0.0012)	-0.0011 (0.0017)	0.9490 (0.0070)	0.0029 (0.0001)	1000
FP (W)	0.3661	0.0011	0.1250 (0.0037)	-0.1378 (0.0053)	0.3475 (0.0201)	0.0346 (0.0017)	564
FP (k=10)	0.4897	0.0016	0.0663 (0.0016)	-0.0142 (0.0022)	0.7960 (0.0134)	0.0046 (0.0003)	902
FP (k=10000)	0.5015	0.0015	0.0530 (0.0012)	-0.0023 (0.0017)	0.8476 (0.0118)	0.0028 (0.0001)	932

Table 174: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.4519	0.0015	0.0567 (0.0013)	-0.0300 (0.0018)	0.7383 (0.0140)	0.0041 (0.0002)	982
Exp	0.4374	0.0027	0.0491 (0.0011)	-0.0444 (0.0016)	0.8680 (0.0107)	0.0044 (0.0002)	1000
Weibull	0.4613	0.0021	0.0575 (0.0013)	-0.0206 (0.0018)	0.8460 (0.0114)	0.0037 (0.0002)	1000
Gompertz	0.4603	0.0026	0.0621 (0.0016)	-0.0216 (0.0022)	0.8717 (0.0118)	0.0043 (0.0002)	803
RP (3)	0.4479	0.0022	0.0571 (0.0013)	-0.0340 (0.0018)	0.8070 (0.0125)	0.0044 (0.0002)	1000
RP (5)	0.4492	0.0022	0.0576 (0.0013)	-0.0327 (0.0018)	0.8090 (0.0124)	0.0044 (0.0002)	1000
RP (9)	0.4496	0.0022	0.0576 (0.0013)	-0.0322 (0.0018)	0.8130 (0.0123)	0.0044 (0.0002)	1000
RP (P)	0.4499	0.0022	0.0574 (0.0013)	-0.0320 (0.0018)	0.8140 (0.0123)	0.0043 (0.0002)	1000
FP (W)	0.4612	0.0015	0.0575 (0.0013)	-0.0207 (0.0018)	0.7605 (0.0135)	0.0037 (0.0002)	998
FP (k=10)	0.4582	0.0015	0.0573 (0.0013)	-0.0237 (0.0018)	0.7660 (0.0134)	0.0038 (0.0002)	1000
FP (k=10000)	0.0533	0.0000	0.0165 (0.0004)	-0.4286 (0.0005)	0.0000 (0.0000)	0.1839 (0.0004)	968
Model frailty: Normal							
Cox	0.4774	0.0016	0.0489 (0.0011)	-0.0045 (0.0015)	0.8900 (0.0099)	0.0024 (0.0001)	1000
Exp	0.4416	0.0028	0.0482 (0.0011)	-0.0402 (0.0015)	0.8970 (0.0096)	0.0039 (0.0001)	1000
Weibull	0.4889	0.0024	0.0515 (0.0012)	0.0070 (0.0016)	0.9308 (0.0080)	0.0027 (0.0001)	997
Gompertz	0.4661	0.0027	0.0631 (0.0017)	-0.0158 (0.0023)	0.8845 (0.0119)	0.0042 (0.0002)	727
RP (3)	0.4804	0.0025	0.0492 (0.0011)	-0.0014 (0.0016)	0.9470 (0.0071)	0.0024 (0.0001)	1000
RP (5)	0.4816	0.0025	0.0495 (0.0011)	-0.0003 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
RP (9)	0.4821	0.0025	0.0494 (0.0011)	0.0002 (0.0016)	0.9500 (0.0069)	0.0024 (0.0001)	1000
RP (P)	0.4819	0.0025	0.0494 (0.0011)	-0.0000 (0.0016)	0.9490 (0.0070)	0.0024 (0.0001)	1000
FP (W)	0.3658	0.0010	0.1137 (0.0035)	-0.1161 (0.0049)	0.3819 (0.0209)	0.0264 (0.0013)	542
FP (k=10)	0.4653	0.0015	0.0591 (0.0014)	-0.0165 (0.0019)	0.8172 (0.0127)	0.0038 (0.0002)	919
FP (k=10000)	0.4414	0.0011	0.0662 (0.0015)	-0.0405 (0.0022)	0.6017 (0.0161)	0.0060 (0.0003)	929

Table 175: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.5278	0.0023	0.0709 (0.0016)	-0.0219 (0.0023)	0.7819 (0.0132)	0.0055 (0.0002)	981
Exp	0.5340	0.0035	0.0752 (0.0017)	-0.0156 (0.0024)	0.8600 (0.0110)	0.0059 (0.0003)	1000
Weibull	0.5314	0.0036	0.0715 (0.0016)	-0.0183 (0.0023)	0.8800 (0.0103)	0.0054 (0.0002)	1000
Gompertz	0.5421	0.0035	0.0752 (0.0026)	-0.0075 (0.0037)	0.8765 (0.0160)	0.0057 (0.0004)	421
RP (3)	0.5289	0.0035	0.0715 (0.0016)	-0.0207 (0.0023)	0.8770 (0.0104)	0.0055 (0.0002)	1000
RP (5)	0.5269	0.0035	0.0715 (0.0016)	-0.0227 (0.0023)	0.8720 (0.0106)	0.0056 (0.0002)	1000
RP (9)	0.5263	0.0035	0.0715 (0.0016)	-0.0233 (0.0023)	0.8710 (0.0106)	0.0057 (0.0002)	1000
RP (P)	0.5274	0.0035	0.0715 (0.0016)	-0.0223 (0.0023)	0.8716 (0.0106)	0.0056 (0.0002)	997
FP (W)	0.5314	0.0023	0.0715 (0.0016)	-0.0183 (0.0023)	0.7830 (0.0130)	0.0054 (0.0002)	1000
FP (k=10)	0.5301	0.0022	0.0697 (0.0016)	-0.0195 (0.0022)	0.7960 (0.0127)	0.0052 (0.0002)	1000
FP (k=10000)	0.5306	0.0022	0.0697 (0.0016)	-0.0191 (0.0022)	0.7897 (0.0129)	0.0052 (0.0002)	994
Model frailty: Normal							
Cox	0.5452	0.0023	0.0623 (0.0014)	-0.0044 (0.0020)	0.8729 (0.0105)	0.0039 (0.0002)	999
Exp	0.5631	0.0037	0.0628 (0.0014)	0.0134 (0.0020)	0.9288 (0.0081)	0.0041 (0.0002)	997
Weibull	0.5527	0.0037	0.0623 (0.0014)	0.0030 (0.0020)	0.9389 (0.0076)	0.0039 (0.0002)	998
Gompertz	0.5685	0.0037	0.0650 (0.0023)	0.0188 (0.0033)	0.9145 (0.0142)	0.0046 (0.0004)	386
RP (3)	0.5525	0.0037	0.0614 (0.0014)	0.0029 (0.0019)	0.9420 (0.0074)	0.0038 (0.0002)	1000
RP (5)	0.5513	0.0036	0.0612 (0.0014)	0.0017 (0.0019)	0.9430 (0.0073)	0.0037 (0.0002)	1000
RP (9)	0.5509	0.0036	0.0611 (0.0014)	0.0013 (0.0019)	0.9430 (0.0073)	0.0037 (0.0002)	1000
RP (P)	0.5514	0.0036	0.0613 (0.0014)	0.0018 (0.0019)	0.9430 (0.0073)	0.0038 (0.0002)	1000
FP (W)	0.4065	0.0014	0.1367 (0.0037)	-0.1431 (0.0052)	0.3647 (0.0185)	0.0391 (0.0017)	680
FP (k=10)	0.5217	0.0021	0.0761 (0.0018)	-0.0279 (0.0025)	0.7621 (0.0140)	0.0066 (0.0003)	929
FP (k=10000)	0.5454	0.0021	0.0619 (0.0014)	-0.0043 (0.0020)	0.8533 (0.0114)	0.0038 (0.0002)	961

Table 176: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2115	0.0005	0.0307 (0.0007)	0.1075 (0.0010)	0.0080 (0.0028)	0.0125 (0.0002)	999
Exp	0.2068	0.0010	0.0301 (0.0007)	0.1028 (0.0010)	0.0300 (0.0054)	0.0115 (0.0002)	1000
Weibull	0.2069	0.0010	0.0303 (0.0007)	0.1029 (0.0010)	0.0260 (0.0050)	0.0115 (0.0002)	1000
Gompertz	0.2130	0.0010	0.0277 (0.0039)	0.1090 (0.0054)	0.0000 (0.0000)	0.0126 (0.0011)	26
RP (3)	0.2066	0.0010	0.0307 (0.0007)	0.1026 (0.0010)	0.0283 (0.0054)	0.0115 (0.0002)	953
RP (5)	0.2079	0.0010	0.0310 (0.0007)	0.1039 (0.0010)	0.0264 (0.0052)	0.0118 (0.0002)	947
RP (9)	0.2100	0.0011	0.0297 (0.0007)	0.1060 (0.0010)	0.0188 (0.0045)	0.0121 (0.0002)	905
RP (P)	0.2086	0.0011	0.0305 (0.0007)	0.1046 (0.0010)	0.0237 (0.0049)	0.0119 (0.0002)	970
FP (W)	0.2069	0.0005	0.0303 (0.0007)	0.1029 (0.0010)	0.0090 (0.0030)	0.0115 (0.0002)	999
FP (k=10)	0.2085	0.0005	0.0302 (0.0007)	0.1045 (0.0010)	0.0080 (0.0028)	0.0118 (0.0002)	1000
FP (k=10000)	0.2505	0.0009	0.0608 (0.0192)	0.1465 (0.0248)	0.0000 (0.0000)	0.0245 (0.0078)	6
Model frailty: Normal							
Cox	0.3512	0.0018	0.1345 (0.0031)	0.2472 (0.0044)	0.0011 (0.0011)	0.0792 (0.0027)	950
Exp	0.2510	0.0019	0.0310 (0.0007)	0.1470 (0.0010)	0.0032 (0.0019)	0.0226 (0.0003)	928
Weibull	0.2543	0.0019	0.0312 (0.0007)	0.1503 (0.0010)	0.0011 (0.0011)	0.0236 (0.0003)	909
Gompertz	0.2538	0.0018	0.0297 (0.0048)	0.1498 (0.0066)	0.0000 (0.0000)	0.0233 (0.0019)	20
RP (3)	0.2756	0.0055	0.0549 (0.0012)	0.1716 (0.0018)	0.3986 (0.0156)	0.0324 (0.0006)	981
RP (5)	0.2784	0.0056	0.0558 (0.0013)	0.1744 (0.0018)	0.3852 (0.0156)	0.0335 (0.0006)	976
RP (9)	0.2753	0.0056	0.0619 (0.0014)	0.1713 (0.0020)	0.3895 (0.0156)	0.0332 (0.0006)	973
RP (P)	0.2817	0.0058	0.0517 (0.0012)	0.1777 (0.0017)	0.3863 (0.0155)	0.0343 (0.0006)	981
FP (W)	0.1956	0.0004	0.0432 (0.0013)	0.0916 (0.0019)	0.0543 (0.0098)	0.0103 (0.0004)	534
FP (k=10)	0.2503	0.0007	0.0294 (0.0007)	0.1463 (0.0010)	0.0012 (0.0012)	0.0223 (0.0003)	834
FP (k=10000)	0.2664	0.0007	0.0307 (0.0008)	0.1624 (0.0012)	0.0014 (0.0014)	0.0273 (0.0004)	695

Table 177: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2144	0.0006	0.0318 (0.0007)	0.1197 (0.0010)	0.0070 (0.0026)	0.0153 (0.0003)	999
Exp	0.2105	0.0009	0.0337 (0.0008)	0.1158 (0.0011)	0.0110 (0.0033)	0.0146 (0.0003)	1000
Weibull	0.2082	0.0010	0.0321 (0.0007)	0.1135 (0.0010)	0.0180 (0.0042)	0.0139 (0.0002)	1000
Gompertz	0.2112	0.0009	0.0361 (0.0077)	0.1165 (0.0104)	0.0000 (0.0000)	0.0148 (0.0027)	12
RP (3)	0.2087	0.0011	0.0321 (0.0007)	0.1140 (0.0010)	0.0174 (0.0042)	0.0140 (0.0002)	976
RP (5)	0.2189	0.0013	0.0295 (0.0008)	0.1242 (0.0011)	0.0091 (0.0034)	0.0163 (0.0003)	766
RP (9)	0.2257	0.0015	0.0435 (0.0023)	0.1310 (0.0033)	0.0455 (0.0157)	0.0190 (0.0009)	176
RP (P)	0.2127	0.0012	0.0314 (0.0007)	0.1180 (0.0010)	0.0143 (0.0038)	0.0149 (0.0002)	978
FP (W)	0.2082	0.0005	0.0321 (0.0007)	0.1135 (0.0010)	0.0040 (0.0020)	0.0139 (0.0002)	998
FP (k=10)	0.2182	0.0005	0.0359 (0.0008)	0.1235 (0.0011)	0.0030 (0.0017)	0.0165 (0.0003)	995
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	0.3512	0.0018	0.1331 (0.0031)	0.2566 (0.0043)	0.0011 (0.0011)	0.0835 (0.0028)	949
Exp	0.2708	0.0021	0.0353 (0.0009)	0.1761 (0.0012)	0.0047 (0.0023)	0.0323 (0.0004)	857
Weibull	0.2548	0.0019	0.0327 (0.0008)	0.1601 (0.0011)	0.0043 (0.0022)	0.0267 (0.0003)	922
Gompertz	0.2737	0.0020	0.0405 (0.0117)	0.1790 (0.0153)	0.0000 (0.0000)	0.0335 (0.0061)	7
RP (3)	0.2756	0.0065	0.0553 (0.0013)	0.1809 (0.0019)	0.4142 (0.0169)	0.0358 (0.0007)	845
RP (5)	0.2606	0.0065	0.0819 (0.0021)	0.1659 (0.0029)	0.4369 (0.0177)	0.0342 (0.0008)	785
RP (9)	0.1457	0.0050	0.1076 (0.0029)	0.0511 (0.0041)	0.7009 (0.0173)	0.0142 (0.0008)	702
RP (P)	0.2800	0.0069	0.0584 (0.0015)	0.1853 (0.0021)	0.4271 (0.0179)	0.0377 (0.0008)	761
FP (W)	0.2009	0.0005	0.0431 (0.0013)	0.1062 (0.0018)	0.0161 (0.0053)	0.0131 (0.0004)	560
FP (k=10)	0.2812	0.0008	0.0359 (0.0009)	0.1865 (0.0013)	0.0013 (0.0013)	0.0361 (0.0005)	795
FP (k=10000)	0.3102	0.0007	0.0351 (0.0013)	0.2155 (0.0019)	0.0000 (0.0000)	0.0477 (0.0008)	358

Table 178: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2018	0.0005	0.0289 (0.0006)	0.0835 (0.0009)	0.0410 (0.0063)	0.0078 (0.0002)	1000
Exp	0.2046	0.0010	0.0301 (0.0007)	0.0862 (0.0010)	0.1200 (0.0103)	0.0083 (0.0002)	1000
Weibull	0.2036	0.0009	0.0305 (0.0007)	0.0852 (0.0010)	0.1020 (0.0096)	0.0082 (0.0002)	1000
Gompertz	0.2029	0.0009	0.0329 (0.0058)	0.0845 (0.0080)	0.1176 (0.0781)	0.0082 (0.0015)	17
RP (3)	0.1961	0.0008	0.0287 (0.0007)	0.0778 (0.0009)	0.1519 (0.0115)	0.0069 (0.0002)	968
RP (5)	0.1966	0.0009	0.0285 (0.0006)	0.0782 (0.0009)	0.1491 (0.0115)	0.0069 (0.0002)	966
RP (9)	0.1987	0.0009	0.0282 (0.0007)	0.0803 (0.0009)	0.1288 (0.0110)	0.0072 (0.0002)	932
RP (P)	0.1982	0.0009	0.0285 (0.0006)	0.0799 (0.0009)	0.1379 (0.0111)	0.0072 (0.0002)	972
FP (W)	0.2036	0.0005	0.0305 (0.0007)	0.0853 (0.0010)	0.0361 (0.0059)	0.0082 (0.0002)	998
FP (k=10)	0.2018	0.0005	0.0277 (0.0006)	0.0834 (0.0009)	0.0330 (0.0057)	0.0077 (0.0002)	999
FP (k=10000)	0.2257	0.0004	0.0171 (0.0046)	0.1074 (0.0061)	0.0000 (0.0000)	0.0118 (0.0013)	8
Model frailty: Normal							
Cox	0.3459	0.0017	0.1321 (0.0030)	0.2276 (0.0043)	0.0010 (0.0010)	0.0692 (0.0025)	957
Exp	0.2600	0.0019	0.0319 (0.0008)	0.1417 (0.0011)	0.0134 (0.0038)	0.0211 (0.0003)	894
Weibull	0.2666	0.0019	0.0320 (0.0008)	0.1482 (0.0011)	0.0093 (0.0033)	0.0230 (0.0003)	860
Gompertz	0.2670	0.0023	0.0427 (0.0095)	0.1486 (0.0129)	0.0000 (0.0000)	0.0237 (0.0043)	11
RP (3)	0.2732	0.0047	0.0483 (0.0011)	0.1548 (0.0015)	0.4087 (0.0157)	0.0263 (0.0005)	986
RP (5)	0.2709	0.0044	0.0478 (0.0011)	0.1525 (0.0015)	0.3823 (0.0155)	0.0255 (0.0005)	981
RP (9)	0.2692	0.0041	0.0512 (0.0012)	0.1508 (0.0016)	0.3579 (0.0153)	0.0254 (0.0005)	978
RP (P)	0.2743	0.0041	0.0452 (0.0010)	0.1560 (0.0014)	0.3330 (0.0151)	0.0264 (0.0004)	979
FP (W)	0.2024	0.0005	0.0466 (0.0016)	0.0840 (0.0023)	0.1192 (0.0157)	0.0092 (0.0004)	428
FP (k=10)	0.2451	0.0007	0.0296 (0.0007)	0.1268 (0.0011)	0.0025 (0.0018)	0.0169 (0.0003)	789
FP (k=10000)	0.2635	0.0006	0.0300 (0.0008)	0.1452 (0.0012)	0.0000 (0.0000)	0.0220 (0.0004)	635

Table 179: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2056	0.0005	0.0281 (0.0006)	0.0813 (0.0009)	0.0740 (0.0083)	0.0074 (0.0002)	1000
Exp	0.1960	0.0015	0.0262 (0.0006)	0.0717 (0.0008)	0.5500 (0.0157)	0.0058 (0.0001)	1000
Weibull	0.1974	0.0008	0.0260 (0.0006)	0.0731 (0.0008)	0.2200 (0.0131)	0.0060 (0.0001)	1000
Gompertz	0.2061	0.0017	0.0273 (0.0018)	0.0818 (0.0026)	0.4649 (0.0467)	0.0074 (0.0004)	114
RP (3)	0.1992	0.0009	0.0287 (0.0009)	0.0749 (0.0013)	0.2110 (0.0178)	0.0064 (0.0002)	526
RP (5)	0.2042	0.0009	0.0284 (0.0007)	0.0800 (0.0010)	0.1658 (0.0130)	0.0072 (0.0002)	814
RP (9)	0.2028	0.0009	0.0278 (0.0006)	0.0785 (0.0009)	0.1704 (0.0123)	0.0069 (0.0002)	939
RP (P)	0.2022	0.0009	0.0274 (0.0006)	0.0779 (0.0009)	0.1722 (0.0121)	0.0068 (0.0001)	970
FP (W)	0.1974	0.0005	0.0260 (0.0006)	0.0731 (0.0008)	0.1050 (0.0097)	0.0060 (0.0001)	1000
FP (k=10)	0.1661	0.0003	0.0427 (0.0010)	0.0419 (0.0014)	0.3260 (0.0148)	0.0036 (0.0001)	1000
FP (k=10000)	0.0998	0.0001	0.0792 (0.0212)	-0.0245 (0.0280)	0.3750 (0.1712)	0.0061 (0.0022)	8
Model frailty: Normal							
Cox	0.3329	0.0016	0.1220 (0.0028)	0.2086 (0.0039)	0.0010 (0.0010)	0.0584 (0.0021)	971
Exp	0.2024	0.0016	0.0273 (0.0006)	0.0781 (0.0009)	0.5227 (0.0160)	0.0068 (0.0001)	970
Weibull	0.2351	0.0015	0.0279 (0.0007)	0.1108 (0.0010)	0.0664 (0.0087)	0.0131 (0.0002)	813
Gompertz	0.2134	0.0019	0.0310 (0.0024)	0.0891 (0.0033)	0.4253 (0.0530)	0.0089 (0.0006)	87
RP (3)	0.2525	0.0035	0.0584 (0.0017)	0.1282 (0.0024)	0.4141 (0.0202)	0.0198 (0.0005)	594
RP (5)	0.2627	0.0039	0.0590 (0.0014)	0.1384 (0.0020)	0.4049 (0.0164)	0.0226 (0.0004)	894
RP (9)	0.2661	0.0043	0.0493 (0.0011)	0.1418 (0.0016)	0.4424 (0.0158)	0.0225 (0.0004)	990
RP (P)	0.2652	0.0041	0.0434 (0.0010)	0.1409 (0.0014)	0.4370 (0.0157)	0.0217 (0.0004)	1000
FP (W)	0.1818	0.0004	0.0374 (0.0013)	0.0575 (0.0019)	0.3300 (0.0234)	0.0047 (0.0003)	403
FP (k=10)	0.2265	0.0006	0.0348 (0.0008)	0.1022 (0.0012)	0.0596 (0.0082)	0.0117 (0.0003)	839
FP (k=10000)	0.2336	0.0005	0.0299 (0.0009)	0.1093 (0.0012)	0.0218 (0.0060)	0.0128 (0.0003)	597

Table 180: Simulation results for LLE, scenario with 20 clusters of 150 individuals each. The true frailty follows a Mixture Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2118	0.0006	0.0325 (0.0007)	0.1103 (0.0010)	0.0120 (0.0035)	0.0132 (0.0002)	998
Exp	0.2146	0.0010	0.0350 (0.0008)	0.1130 (0.0011)	0.0210 (0.0045)	0.0140 (0.0003)	1000
Weibull	0.2133	0.0011	0.0338 (0.0008)	0.1117 (0.0011)	0.0310 (0.0055)	0.0136 (0.0003)	1000
Gompertz	0.2089	0.0010	0.0482 (0.0085)	0.1073 (0.0117)	0.1176 (0.0781)	0.0137 (0.0030)	17
RP (3)	0.2068	0.0011	0.0325 (0.0007)	0.1052 (0.0010)	0.0485 (0.0069)	0.0121 (0.0002)	969
RP (5)	0.2159	0.0012	0.0311 (0.0008)	0.1144 (0.0011)	0.0296 (0.0060)	0.0140 (0.0003)	810
RP (9)	0.2304	0.0014	0.0374 (0.0017)	0.1289 (0.0024)	0.0206 (0.0091)	0.0180 (0.0006)	243
RP (P)	0.2111	0.0011	0.0321 (0.0007)	0.1096 (0.0010)	0.0361 (0.0060)	0.0130 (0.0002)	970
FP (W)	0.2133	0.0005	0.0338 (0.0008)	0.1117 (0.0011)	0.0150 (0.0038)	0.0136 (0.0003)	1000
FP (k=10)	0.2213	0.0005	0.0366 (0.0008)	0.1197 (0.0012)	0.0070 (0.0026)	0.0157 (0.0003)	999
FP (k=10000)	—	—	—	—	—	—	0
Model frailty: Normal							
Cox	0.3546	0.0019	0.1370 (0.0031)	0.2531 (0.0044)	0.0031 (0.0018)	0.0828 (0.0028)	956
Exp	0.2730	0.0021	0.0355 (0.0008)	0.1714 (0.0012)	0.0045 (0.0023)	0.0306 (0.0004)	880
Weibull	0.2606	0.0020	0.0337 (0.0008)	0.1590 (0.0011)	0.0108 (0.0034)	0.0264 (0.0004)	925
Gompertz	0.2304	0.0017	0.0445 (0.0223)	0.1289 (0.0257)	0.0000 (0.0000)	0.0179 (0.0068)	3
RP (3)	0.2756	0.0054	0.0531 (0.0013)	0.1740 (0.0018)	0.3873 (0.0164)	0.0331 (0.0006)	883
RP (5)	0.2649	0.0055	0.0791 (0.0019)	0.1633 (0.0027)	0.4022 (0.0170)	0.0329 (0.0007)	833
RP (9)	0.1783	0.0049	0.1166 (0.0030)	0.0767 (0.0043)	0.6292 (0.0178)	0.0195 (0.0010)	739
RP (P)	0.2874	0.0062	0.0554 (0.0014)	0.1858 (0.0020)	0.3808 (0.0172)	0.0376 (0.0007)	801
FP (W)	0.1977	0.0005	0.0423 (0.0012)	0.0961 (0.0018)	0.0462 (0.0087)	0.0110 (0.0004)	584
FP (k=10)	0.2799	0.0007	0.0349 (0.0009)	0.1784 (0.0012)	0.0000 (0.0000)	0.0330 (0.0005)	779
FP (k=10000)	0.3013	0.0007	0.0371 (0.0012)	0.1998 (0.0017)	0.0000 (0.0000)	0.0413 (0.0007)	463

Results: frailty variance

Table 181: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2494	0.0036	0.0601 (0.0013)	-0.0006 (0.0019)	0.9440 (0.0073)	0.0036 (0.0002)	1000
Exp	0.2491	0.0023	0.0487 (0.0011)	-0.0009 (0.0015)	0.9470 (0.0071)	0.0024 (0.0001)	1000
Weibull	0.2530	0.0032	0.0559 (0.0013)	0.0030 (0.0018)	0.9570 (0.0064)	0.0031 (0.0001)	1000
Gompertz	0.2473	0.0036	0.0480 (0.0014)	-0.0027 (0.0020)	0.9800 (0.0057)	0.0023 (0.0001)	600
RP (3)	0.2516	0.0036	0.0601 (0.0013)	0.0016 (0.0019)	0.9440 (0.0073)	0.0036 (0.0002)	1000
RP (5)	0.2517	0.0036	0.0602 (0.0013)	0.0017 (0.0019)	0.9460 (0.0071)	0.0036 (0.0002)	1000
RP (9)	0.2518	0.0036	0.0602 (0.0013)	0.0018 (0.0019)	0.9450 (0.0072)	0.0036 (0.0002)	1000
RP (P)	0.2521	0.0033	0.0572 (0.0013)	0.0021 (0.0018)	0.9480 (0.0070)	0.0033 (0.0001)	1000
FP (W)	0.2534	0.0032	0.0556 (0.0013)	0.0034 (0.0018)	0.9576 (0.0064)	0.0031 (0.0001)	990
FP (k=10)	0.2489	0.0036	0.0601 (0.0013)	-0.0011 (0.0019)	0.9419 (0.0074)	0.0036 (0.0002)	998
FP (k=10000)	0.2497	0.0023	0.0600 (0.0013)	-0.0003 (0.0019)	0.8860 (0.0101)	0.0036 (0.0002)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 182: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2469	0.0044	0.0673 (0.0015)	-0.0031 (0.0021)	0.9380 (0.0076)	0.0045 (0.0002)	1000
Exp	0.4966	0.0046	0.0733 (0.0016)	0.2466 (0.0023)	0.0280 (0.0052)	0.0662 (0.0012)	1000
Weibull	0.2552	0.0041	0.0650 (0.0015)	0.0052 (0.0021)	0.9530 (0.0067)	0.0042 (0.0002)	1000
Gompertz	0.4960	0.0065	0.0695 (0.0023)	0.2460 (0.0032)	0.0713 (0.0120)	0.0654 (0.0017)	463
RP (3)	0.2487	0.0044	0.0672 (0.0015)	-0.0013 (0.0021)	0.9389 (0.0076)	0.0045 (0.0002)	999
RP (5)	0.2489	0.0044	0.0674 (0.0015)	-0.0011 (0.0021)	0.9400 (0.0075)	0.0045 (0.0002)	1000
RP (9)	0.2492	0.0044	0.0675 (0.0015)	-0.0008 (0.0021)	0.9390 (0.0076)	0.0046 (0.0002)	1000
RP (P)	0.2521	0.0042	0.0658 (0.0015)	0.0021 (0.0021)	0.9460 (0.0071)	0.0043 (0.0002)	1000
FP (W)	0.2557	0.0041	0.0649 (0.0015)	0.0057 (0.0021)	0.9536 (0.0067)	0.0042 (0.0002)	991
FP (k=10)	0.2508	0.0044	0.0676 (0.0015)	0.0008 (0.0021)	0.9380 (0.0076)	0.0046 (0.0002)	1000
FP (k=10000)	0.3023	0.0036	0.0702 (0.0016)	0.0523 (0.0022)	0.8490 (0.0113)	0.0076 (0.0004)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 183: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2476	0.0029	0.0546 (0.0012)	-0.0024 (0.0017)	0.9458 (0.0072)	0.0030 (0.0001)	997
Exp	0.0407	0.0010	0.0299 (0.0007)	-0.2093 (0.0009)	0.0000 (0.0000)	0.0447 (0.0004)	995
Weibull	0.1529	0.0019	0.0442 (0.0010)	-0.0971 (0.0014)	0.3880 (0.0154)	0.0114 (0.0003)	1000
Gompertz	0.2505	0.0030	0.0547 (0.0012)	0.0005 (0.0017)	0.9510 (0.0068)	0.0030 (0.0001)	1000
RP (3)	0.2453	0.0029	0.0542 (0.0012)	-0.0047 (0.0017)	0.9450 (0.0072)	0.0030 (0.0001)	1000
RP (5)	0.2491	0.0029	0.0547 (0.0012)	-0.0009 (0.0017)	0.9450 (0.0072)	0.0030 (0.0001)	1000
RP (9)	0.2504	0.0030	0.0548 (0.0012)	0.0004 (0.0017)	0.9490 (0.0070)	0.0030 (0.0001)	1000
RP (P)	0.2264	0.0026	0.0539 (0.0012)	-0.0236 (0.0017)	0.8950 (0.0097)	0.0035 (0.0001)	1000
FP (W)	0.1529	0.0019	0.0442 (0.0010)	-0.0971 (0.0014)	0.3870 (0.0154)	0.0114 (0.0003)	1000
FP (k=10)	0.2469	0.0029	0.0540 (0.0012)	-0.0031 (0.0017)	0.9450 (0.0072)	0.0029 (0.0001)	1000
FP (k=10000)	0.2342	0.0014	0.0510 (0.0011)	-0.0158 (0.0016)	0.8060 (0.0125)	0.0028 (0.0001)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 184: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2517	0.0031	0.0553 (0.0012)	0.0017 (0.0018)	0.9579 (0.0064)	0.0031 (0.0002)	998
Exp	0.0000	0.0010	0.0000 (0.0000)	-0.2500 (0.0000)	0.0000 (0.0000)	0.0625 (0.0000)	572
Weibull	0.3733	0.0032	0.0565 (0.0013)	0.1233 (0.0018)	0.4120 (0.0156)	0.0184 (0.0005)	1000
Gompertz	0.2857	0.0033	0.0570 (0.0013)	0.0357 (0.0018)	0.9360 (0.0077)	0.0045 (0.0002)	1000
RP (3)	0.2534	0.0031	0.0555 (0.0012)	0.0034 (0.0018)	0.9540 (0.0066)	0.0031 (0.0002)	1000
RP (5)	0.2539	0.0031	0.0555 (0.0012)	0.0039 (0.0018)	0.9550 (0.0066)	0.0031 (0.0002)	1000
RP (9)	0.2544	0.0031	0.0555 (0.0012)	0.0044 (0.0018)	0.9560 (0.0065)	0.0031 (0.0002)	1000
RP (P)	0.2598	0.0031	0.0557 (0.0012)	0.0098 (0.0018)	0.9560 (0.0065)	0.0032 (0.0002)	1000
FP (W)	0.3733	0.0032	0.0565 (0.0013)	0.1233 (0.0018)	0.4110 (0.0156)	0.0184 (0.0005)	1000
FP (k=10)	0.2550	0.0031	0.0559 (0.0013)	0.0050 (0.0018)	0.9540 (0.0066)	0.0032 (0.0002)	1000
FP (k=10000)	0.5260	0.0024	0.0735 (0.0016)	0.2760 (0.0023)	0.0040 (0.0020)	0.0816 (0.0013)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 185: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2541	0.0040	0.0626 (0.0014)	0.0041 (0.0020)	0.9490 (0.0070)	0.0039 (0.0002)	1000
Exp	0.3731	0.0032	0.0562 (0.0013)	0.1231 (0.0018)	0.4150 (0.0156)	0.0183 (0.0005)	1000
Weibull	0.2866	0.0036	0.0591 (0.0013)	0.0366 (0.0019)	0.9250 (0.0083)	0.0048 (0.0002)	1000
Gompertz	0.3725	0.0048	0.0577 (0.0018)	0.1225 (0.0026)	0.6074 (0.0221)	0.0183 (0.0007)	489
RP (3)	0.2570	0.0040	0.0625 (0.0014)	0.0070 (0.0020)	0.9550 (0.0066)	0.0040 (0.0002)	1000
RP (5)	0.2564	0.0040	0.0628 (0.0014)	0.0064 (0.0020)	0.9530 (0.0067)	0.0040 (0.0002)	1000
RP (9)	0.2565	0.0040	0.0628 (0.0014)	0.0065 (0.0020)	0.9520 (0.0068)	0.0040 (0.0002)	1000
RP (P)	0.2612	0.0040	0.0626 (0.0014)	0.0112 (0.0020)	0.9510 (0.0068)	0.0040 (0.0002)	1000
FP (W)	0.2870	0.0037	0.0589 (0.0013)	0.0370 (0.0019)	0.9254 (0.0084)	0.0048 (0.0002)	979
FP (k=10)	0.2531	0.0039	0.0626 (0.0014)	0.0031 (0.0020)	0.9490 (0.0070)	0.0039 (0.0002)	1000
FP (k=10000)	0.2395	0.0027	0.0620 (0.0014)	-0.0105 (0.0020)	0.8850 (0.0101)	0.0040 (0.0002)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 186: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2223	0.0037	0.0615 (0.0014)	-0.0277 (0.0019)	0.9040 (0.0093)	0.0045 (0.0002)	1000
Exp	0.2700	0.0029	0.0521 (0.0012)	0.0200 (0.0016)	0.9520 (0.0068)	0.0031 (0.0001)	999
Weibull	0.2833	0.0044	0.0631 (0.0014)	0.0333 (0.0020)	0.9508 (0.0069)	0.0051 (0.0002)	995
Gompertz	0.2691	0.0047	0.0532 (0.0016)	0.0191 (0.0023)	0.9908 (0.0041)	0.0032 (0.0002)	545
RP (3)	0.2536	0.0053	0.0744 (0.0017)	0.0036 (0.0024)	0.9340 (0.0079)	0.0055 (0.0002)	1000
RP (5)	0.2539	0.0053	0.0745 (0.0017)	0.0039 (0.0024)	0.9360 (0.0077)	0.0056 (0.0002)	1000
RP (9)	0.2542	0.0053	0.0745 (0.0017)	0.0042 (0.0024)	0.9350 (0.0078)	0.0056 (0.0002)	1000
RP (P)	0.2549	0.0048	0.0705 (0.0016)	0.0049 (0.0022)	0.9370 (0.0077)	0.0050 (0.0002)	1000
FP (W)	0.2556	0.0046	0.0689 (0.0015)	0.0056 (0.0022)	0.9417 (0.0074)	0.0048 (0.0002)	995
FP (k=10)	0.2533	0.0052	0.0727 (0.0016)	0.0033 (0.0023)	0.9270 (0.0082)	0.0053 (0.0002)	1000
FP (k=10000)	0.2532	0.0036	0.0716 (0.0016)	0.0032 (0.0023)	0.8820 (0.0102)	0.0051 (0.0002)	1000

Table 187: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2222	0.0040	0.0634 (0.0014)	-0.0278 (0.0020)	0.9100 (0.0090)	0.0048 (0.0002)	1000
Exp	0.6047	0.0065	0.0821 (0.0018)	0.3547 (0.0026)	0.0030 (0.0017)	0.1325 (0.0019)	994
Weibull	0.2984	0.0051	0.0667 (0.0015)	0.0484 (0.0021)	0.9410 (0.0075)	0.0068 (0.0003)	1000
Gompertz	0.6023	0.0096	0.0832 (0.0028)	0.3523 (0.0039)	0.0089 (0.0044)	0.1310 (0.0028)	450
RP (3)	0.2540	0.0058	0.0773 (0.0017)	0.0040 (0.0024)	0.9420 (0.0074)	0.0060 (0.0003)	1000
RP (5)	0.2544	0.0059	0.0775 (0.0017)	0.0044 (0.0025)	0.9430 (0.0073)	0.0060 (0.0003)	1000
RP (9)	0.2548	0.0059	0.0776 (0.0017)	0.0048 (0.0025)	0.9440 (0.0073)	0.0060 (0.0003)	1000
RP (P)	0.2581	0.0056	0.0745 (0.0017)	0.0081 (0.0024)	0.9470 (0.0071)	0.0056 (0.0003)	1000
FP (W)	0.2614	0.0053	0.0728 (0.0016)	0.0114 (0.0023)	0.9552 (0.0066)	0.0054 (0.0003)	983
FP (k=10)	0.2717	0.0061	0.0793 (0.0018)	0.0217 (0.0025)	0.9310 (0.0080)	0.0068 (0.0003)	1000
FP (k=10000)	0.3624	0.0063	0.0936 (0.0021)	0.1124 (0.0030)	0.7090 (0.0144)	0.0214 (0.0009)	1000

Table 188: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2254	0.0035	0.0578 (0.0013)	-0.0246 (0.0018)	0.9020 (0.0094)	0.0039 (0.0002)	1000
Exp	0.0388	0.0011	0.0260 (0.0007)	-0.2112 (0.0010)	0.0000 (0.0000)	0.0453 (0.0004)	679
Weibull	0.1564	0.0028	0.0537 (0.0012)	-0.0936 (0.0017)	0.5600 (0.0157)	0.0116 (0.0003)	1000
Gompertz	0.2799	0.0044	0.0620 (0.0014)	0.0299 (0.0020)	0.9560 (0.0065)	0.0047 (0.0002)	1000
RP (3)	0.2510	0.0048	0.0688 (0.0015)	0.0010 (0.0022)	0.9420 (0.0074)	0.0047 (0.0002)	1000
RP (5)	0.2551	0.0048	0.0689 (0.0015)	0.0051 (0.0022)	0.9480 (0.0070)	0.0048 (0.0002)	1000
RP (9)	0.2563	0.0048	0.0693 (0.0015)	0.0063 (0.0022)	0.9500 (0.0069)	0.0048 (0.0002)	1000
RP (P)	0.2284	0.0043	0.0677 (0.0015)	-0.0216 (0.0021)	0.9030 (0.0094)	0.0050 (0.0002)	1000
FP (W)	0.1352	0.0024	0.0464 (0.0010)	-0.1148 (0.0015)	0.3710 (0.0153)	0.0153 (0.0003)	1000
FP (k=10)	0.2541	0.0047	0.0675 (0.0015)	0.0041 (0.0021)	0.9380 (0.0076)	0.0046 (0.0002)	1000
FP (k=10000)	0.2414	0.0025	0.0644 (0.0014)	-0.0086 (0.0020)	0.8460 (0.0114)	0.0042 (0.0002)	1000

Table 189: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2213	0.0035	0.0582 (0.0013)	-0.0287 (0.0018)	0.9070 (0.0092)	0.0042 (0.0002)	1000
Exp	0.0054	0.0008	0.0041 (0.0017)	-0.2446 (0.0021)	0.0000 (0.0000)	0.0598 (0.0010)	4
Weibull	0.4101	0.0049	0.0620 (0.0014)	0.1601 (0.0020)	0.3484 (0.0151)	0.0295 (0.0007)	996
Gompertz	0.2534	0.0036	0.0495 (0.0011)	0.0034 (0.0016)	0.9800 (0.0044)	0.0025 (0.0001)	1000
RP (3)	0.2548	0.0049	0.0706 (0.0016)	0.0048 (0.0022)	0.9490 (0.0070)	0.0050 (0.0003)	1000
RP (5)	0.2514	0.0049	0.0699 (0.0016)	0.0014 (0.0022)	0.9510 (0.0068)	0.0049 (0.0003)	1000
RP (9)	0.2520	0.0049	0.0700 (0.0016)	0.0020 (0.0022)	0.9490 (0.0070)	0.0049 (0.0003)	1000
RP (P)	0.2580	0.0049	0.0700 (0.0016)	0.0080 (0.0022)	0.9490 (0.0070)	0.0050 (0.0003)	1000
FP (W)	0.4063	0.0057	0.0716 (0.0016)	0.1563 (0.0023)	0.4572 (0.0160)	0.0295 (0.0008)	969
FP (k=10)	0.2660	0.0049	0.0697 (0.0016)	0.0160 (0.0022)	0.9490 (0.0070)	0.0051 (0.0003)	1000
FP (k=10000)	0.6791	0.0065	0.1067 (0.0024)	0.4291 (0.0034)	0.0010 (0.0010)	0.1955 (0.0030)	1000

Table 190: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2214	0.0038	0.0599 (0.0013)	-0.0286 (0.0019)	0.9120 (0.0090)	0.0044 (0.0002)	1000
Exp	0.4077	0.0040	0.0588 (0.0013)	0.1577 (0.0019)	0.2585 (0.0139)	0.0283 (0.0006)	998
Weibull	0.3070	0.0046	0.0619 (0.0014)	0.0570 (0.0020)	0.9130 (0.0089)	0.0071 (0.0003)	1000
Gompertz	0.4081	0.0063	0.0600 (0.0021)	0.1581 (0.0030)	0.4874 (0.0251)	0.0286 (0.0010)	396
RP (3)	0.2517	0.0054	0.0723 (0.0016)	0.0017 (0.0023)	0.9540 (0.0066)	0.0052 (0.0003)	1000
RP (5)	0.2528	0.0055	0.0727 (0.0016)	0.0028 (0.0023)	0.9530 (0.0067)	0.0053 (0.0003)	1000
RP (9)	0.2533	0.0055	0.0729 (0.0016)	0.0033 (0.0023)	0.9550 (0.0066)	0.0053 (0.0003)	1000
RP (P)	0.2557	0.0054	0.0718 (0.0016)	0.0057 (0.0023)	0.9540 (0.0066)	0.0052 (0.0003)	1000
FP (W)	0.2785	0.0049	0.0685 (0.0015)	0.0285 (0.0022)	0.9494 (0.0070)	0.0055 (0.0003)	988
FP (k=10)	0.2548	0.0054	0.0716 (0.0016)	0.0048 (0.0023)	0.9420 (0.0074)	0.0051 (0.0003)	1000
FP (k=10000)	0.2313	0.0037	0.0663 (0.0015)	-0.0187 (0.0021)	0.8740 (0.0105)	0.0047 (0.0002)	1000

Table 191: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7433	0.0091	0.0969 (0.0022)	-0.0067 (0.0031)	0.9400 (0.0075)	0.0094 (0.0004)	1000
Exp	0.7456	0.0061	0.0792 (0.0018)	-0.0044 (0.0025)	0.9470 (0.0071)	0.0063 (0.0003)	1000
Weibull	0.7483	0.0082	0.0922 (0.0021)	-0.0017 (0.0029)	0.9470 (0.0071)	0.0085 (0.0004)	1000
Gompertz	0.7493	0.0090	0.0821 (0.0027)	-0.0007 (0.0038)	0.9645 (0.0085)	0.0067 (0.0004)	479
RP (3)	0.7465	0.0091	0.0970 (0.0022)	-0.0035 (0.0031)	0.9420 (0.0074)	0.0094 (0.0004)	1000
RP (5)	0.7469	0.0091	0.0972 (0.0022)	-0.0031 (0.0031)	0.9420 (0.0074)	0.0095 (0.0004)	1000
RP (9)	0.7471	0.0091	0.0973 (0.0022)	-0.0029 (0.0031)	0.9410 (0.0075)	0.0095 (0.0004)	1000
RP (P)	0.7468	0.0084	0.0933 (0.0021)	-0.0032 (0.0030)	0.9440 (0.0073)	0.0087 (0.0004)	1000
FP (W)	0.7483	0.0082	0.0923 (0.0021)	-0.0017 (0.0029)	0.9469 (0.0071)	0.0085 (0.0004)	998
FP (k=10)	0.7421	0.0091	0.0969 (0.0022)	-0.0079 (0.0031)	0.9380 (0.0076)	0.0095 (0.0004)	1000
FP (k=10000)	0.7441	0.0060	0.0967 (0.0022)	-0.0059 (0.0031)	0.8768 (0.0104)	0.0094 (0.0004)	998
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 192: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7507	0.0108	0.1070 (0.0024)	0.0007 (0.0034)	0.9460 (0.0071)	0.0114 (0.0005)	1000
Exp	1.1199	0.0113	0.1134 (0.0025)	0.3699 (0.0036)	0.0490 (0.0068)	0.1496 (0.0028)	1000
Weibull	0.7633	0.0101	0.1014 (0.0023)	0.0133 (0.0032)	0.9520 (0.0068)	0.0105 (0.0005)	1000
Gompertz	1.1171	0.0155	0.1008 (0.0034)	0.3671 (0.0048)	0.0760 (0.0127)	0.1449 (0.0038)	434
RP (3)	0.7538	0.0108	0.1072 (0.0024)	0.0038 (0.0034)	0.9460 (0.0071)	0.0115 (0.0005)	1000
RP (5)	0.7542	0.0109	0.1072 (0.0024)	0.0042 (0.0034)	0.9460 (0.0071)	0.0115 (0.0005)	1000
RP (9)	0.7545	0.0109	0.1073 (0.0024)	0.0045 (0.0034)	0.9490 (0.0070)	0.0115 (0.0005)	1000
RP (P)	0.7591	0.0104	0.1041 (0.0023)	0.0091 (0.0033)	0.9480 (0.0070)	0.0109 (0.0005)	1000
FP (W)	0.7633	0.0101	0.1014 (0.0023)	0.0133 (0.0032)	0.9520 (0.0068)	0.0105 (0.0005)	1000
FP (k=10)	0.7601	0.0109	0.1085 (0.0024)	0.0101 (0.0034)	0.9460 (0.0071)	0.0119 (0.0006)	1000
FP (k=10000)	0.8514	0.0089	0.1129 (0.0025)	0.1014 (0.0036)	0.7950 (0.0128)	0.0230 (0.0010)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 193: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7509	0.0076	0.0854 (0.0019)	0.0009 (0.0027)	0.9600 (0.0062)	0.0073 (0.0003)	999
Exp	0.4385	0.0031	0.0559 (0.0013)	-0.3115 (0.0018)	0.0000 (0.0000)	0.1001 (0.0011)	1000
Weibull	0.6187	0.0056	0.0740 (0.0017)	-0.1313 (0.0023)	0.5500 (0.0157)	0.0227 (0.0006)	1000
Gompertz	0.4391	0.0049	0.0615 (0.0017)	-0.3109 (0.0024)	0.0120 (0.0042)	0.1005 (0.0014)	666
RP (3)	0.7499	0.0076	0.0853 (0.0019)	-0.0001 (0.0027)	0.9650 (0.0058)	0.0073 (0.0003)	1000
RP (5)	0.7537	0.0076	0.0857 (0.0019)	0.0037 (0.0027)	0.9600 (0.0062)	0.0073 (0.0003)	1000
RP (9)	0.7549	0.0077	0.0857 (0.0019)	0.0049 (0.0027)	0.9570 (0.0064)	0.0074 (0.0003)	1000
RP (P)	0.7238	0.0071	0.0851 (0.0019)	-0.0262 (0.0027)	0.9250 (0.0083)	0.0079 (0.0003)	1000
FP (W)	0.6185	0.0056	0.0741 (0.0017)	-0.1315 (0.0024)	0.5515 (0.0158)	0.0228 (0.0006)	990
FP (k=10)	0.7496	0.0075	0.0849 (0.0019)	-0.0004 (0.0027)	0.9610 (0.0061)	0.0072 (0.0003)	1000
FP (k=10000)	0.7355	0.0041	0.0815 (0.0018)	-0.0145 (0.0026)	0.8549 (0.0111)	0.0069 (0.0003)	999
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 194: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7462	0.0079	0.0904 (0.0020)	-0.0038 (0.0029)	0.9360 (0.0077)	0.0082 (0.0004)	1000
Exp	0.3062	0.0025	0.0479 (0.0011)	-0.4438 (0.0015)	0.0000 (0.0000)	0.1993 (0.0013)	1000
Weibull	0.9032	0.0081	0.0919 (0.0021)	0.1532 (0.0029)	0.6010 (0.0155)	0.0319 (0.0010)	1000
Gompertz	0.6781	0.0071	0.1581 (0.0036)	-0.0719 (0.0051)	0.7930 (0.0130)	0.0301 (0.0017)	976
RP (3)	0.7524	0.0079	0.0910 (0.0020)	0.0024 (0.0029)	0.9380 (0.0076)	0.0083 (0.0004)	1000
RP (5)	0.7500	0.0079	0.0906 (0.0020)	-0.0000 (0.0029)	0.9380 (0.0076)	0.0082 (0.0004)	1000
RP (9)	0.7504	0.0079	0.0907 (0.0020)	0.0004 (0.0029)	0.9380 (0.0076)	0.0082 (0.0004)	1000
RP (P)	0.7577	0.0079	0.0911 (0.0020)	0.0077 (0.0029)	0.9390 (0.0076)	0.0083 (0.0004)	1000
FP (W)	0.9031	0.0081	0.0921 (0.0021)	0.1531 (0.0029)	0.6014 (0.0155)	0.0319 (0.0010)	996
FP (k=10)	0.7499	0.0079	0.0915 (0.0020)	-0.0001 (0.0029)	0.9400 (0.0075)	0.0084 (0.0004)	1000
FP (k=10000)	1.1203	0.0064	0.1188 (0.0027)	0.3703 (0.0038)	0.0250 (0.0049)	0.1512 (0.0028)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 195: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7483	0.0098	0.0958 (0.0021)	-0.0017 (0.0030)	0.9539 (0.0066)	0.0092 (0.0004)	998
Exp	0.9096	0.0079	0.0871 (0.0019)	0.1596 (0.0028)	0.5930 (0.0155)	0.0331 (0.0010)	1000
Weibull	0.7805	0.0090	0.0914 (0.0020)	0.0305 (0.0029)	0.9550 (0.0066)	0.0093 (0.0004)	1000
Gompertz	0.9106	0.0115	0.0868 (0.0028)	0.1606 (0.0040)	0.7442 (0.0201)	0.0333 (0.0014)	473
RP (3)	0.7504	0.0098	0.0959 (0.0021)	0.0004 (0.0030)	0.9540 (0.0066)	0.0092 (0.0004)	1000
RP (5)	0.7513	0.0098	0.0962 (0.0022)	0.0013 (0.0030)	0.9510 (0.0068)	0.0092 (0.0004)	1000
RP (9)	0.7518	0.0098	0.0963 (0.0022)	0.0018 (0.0030)	0.9530 (0.0067)	0.0093 (0.0004)	1000
RP (P)	0.7557	0.0097	0.0957 (0.0021)	0.0057 (0.0030)	0.9520 (0.0068)	0.0092 (0.0004)	1000
FP (W)	0.7806	0.0090	0.0915 (0.0021)	0.0306 (0.0029)	0.9548 (0.0066)	0.0093 (0.0004)	995
FP (k=10)	0.7471	0.0098	0.0957 (0.0021)	-0.0029 (0.0030)	0.9510 (0.0068)	0.0092 (0.0004)	1000
FP (k=10000)	0.7258	0.0067	0.0939 (0.0021)	-0.0242 (0.0030)	0.9030 (0.0094)	0.0094 (0.0004)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 196: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.6300	0.0101	0.0967 (0.0022)	-0.1200 (0.0031)	0.7310 (0.0140)	0.0237 (0.0008)	1000
Exp	0.7170	0.0066	0.0749 (0.0017)	-0.0330 (0.0024)	0.9367 (0.0077)	0.0067 (0.0003)	996
Weibull	0.7080	0.0101	0.0883 (0.0020)	-0.0420 (0.0028)	0.9369 (0.0077)	0.0096 (0.0004)	998
Gompertz	0.7168	0.0104	0.0739 (0.0024)	-0.0332 (0.0034)	0.9809 (0.0063)	0.0066 (0.0004)	471
RP (3)	0.7570	0.0149	0.1181 (0.0026)	0.0070 (0.0037)	0.9550 (0.0066)	0.0140 (0.0006)	1000
RP (5)	0.7573	0.0149	0.1181 (0.0026)	0.0073 (0.0037)	0.9560 (0.0065)	0.0140 (0.0006)	1000
RP (9)	0.7577	0.0149	0.1182 (0.0026)	0.0077 (0.0037)	0.9540 (0.0066)	0.0140 (0.0006)	1000
RP (P)	0.7602	0.0138	0.1139 (0.0025)	0.0102 (0.0036)	0.9590 (0.0063)	0.0131 (0.0006)	1000
FP (W)	0.7629	0.0135	0.1114 (0.0025)	0.0129 (0.0036)	0.9592 (0.0063)	0.0126 (0.0006)	980
FP (k=10)	0.7551	0.0147	0.1177 (0.0026)	0.0051 (0.0037)	0.9520 (0.0068)	0.0139 (0.0006)	1000
FP (k=10000)	0.7547	0.0099	0.1138 (0.0025)	0.0047 (0.0036)	0.9160 (0.0088)	0.0130 (0.0006)	1000

Table 197: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.6205	0.0104	0.0964 (0.0022)	-0.1295 (0.0030)	0.7170 (0.0142)	0.0261 (0.0008)	1000
Exp	1.2491	0.0147	0.1163 (0.0026)	0.4991 (0.0037)	0.0050 (0.0022)	0.2626 (0.0038)	993
Weibull	0.7216	0.0111	0.0896 (0.0020)	-0.0284 (0.0028)	0.9588 (0.0063)	0.0088 (0.0004)	996
Gompertz	1.2500	0.0219	0.1176 (0.0050)	0.5000 (0.0070)	0.0177 (0.0079)	0.2638 (0.0072)	282
RP (3)	0.7545	0.0158	0.1203 (0.0027)	0.0045 (0.0038)	0.9550 (0.0066)	0.0145 (0.0007)	1000
RP (5)	0.7546	0.0158	0.1202 (0.0027)	0.0046 (0.0038)	0.9540 (0.0066)	0.0145 (0.0007)	1000
RP (9)	0.7549	0.0158	0.1201 (0.0027)	0.0049 (0.0038)	0.9560 (0.0065)	0.0144 (0.0007)	1000
RP (P)	0.7625	0.0153	0.1186 (0.0027)	0.0125 (0.0037)	0.9610 (0.0061)	0.0142 (0.0007)	1000
FP (W)	0.7736	0.0149	0.1140 (0.0026)	0.0236 (0.0037)	0.9650 (0.0059)	0.0135 (0.0007)	971
FP (k=10)	0.8225	0.0171	0.1301 (0.0029)	0.0725 (0.0041)	0.9349 (0.0078)	0.0222 (0.0011)	999
FP (k=10000)	1.0281	0.0164	0.1425 (0.0032)	0.2781 (0.0045)	0.4218 (0.0157)	0.0976 (0.0029)	991

Table 198: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.6318	0.0098	0.0983 (0.0022)	-0.1182 (0.0031)	0.7240 (0.0141)	0.0236 (0.0008)	1000
Exp	0.3618	0.0031	0.0549 (0.0012)	-0.3882 (0.0017)	0.0000 (0.0000)	0.1537 (0.0014)	998
Weibull	0.5546	0.0077	0.0836 (0.0019)	-0.1954 (0.0026)	0.3864 (0.0154)	0.0452 (0.0011)	999
Gompertz	0.3647	0.0054	0.0654 (0.0018)	-0.3853 (0.0026)	0.0095 (0.0039)	0.1528 (0.0018)	630
RP (3)	0.7449	0.0137	0.1176 (0.0026)	-0.0051 (0.0037)	0.9340 (0.0079)	0.0138 (0.0006)	1000
RP (5)	0.7485	0.0138	0.1176 (0.0026)	-0.0015 (0.0037)	0.9380 (0.0076)	0.0138 (0.0006)	1000
RP (9)	0.7497	0.0138	0.1178 (0.0026)	-0.0003 (0.0037)	0.9360 (0.0077)	0.0139 (0.0006)	1000
RP (P)	0.7176	0.0129	0.1160 (0.0026)	-0.0324 (0.0037)	0.9150 (0.0088)	0.0145 (0.0006)	1000
FP (W)	0.5812	0.0098	0.1028 (0.0023)	-0.1688 (0.0033)	0.5690 (0.0157)	0.0391 (0.0011)	1000
FP (k=10)	0.7472	0.0137	0.1176 (0.0026)	-0.0028 (0.0037)	0.9340 (0.0079)	0.0138 (0.0006)	1000
FP (k=10000)	0.7449	0.0079	0.1150 (0.0026)	-0.0051 (0.0036)	0.8550 (0.0111)	0.0132 (0.0006)	1000

Table 199: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.6376	0.0100	0.1007 (0.0023)	-0.1124 (0.0032)	0.7450 (0.0138)	0.0228 (0.0008)	1000
Exp	0.1606	0.0016	0.0352 (0.0008)	-0.5894 (0.0011)	0.0000 (0.0000)	0.3486 (0.0013)	1000
Weibull	0.8493	0.0113	0.0969 (0.0022)	0.0993 (0.0031)	0.8987 (0.0096)	0.0192 (0.0008)	997
Gompertz	0.5207	0.0067	0.0702 (0.0016)	-0.2293 (0.0022)	0.1809 (0.0122)	0.0575 (0.0011)	995
RP (3)	0.7626	0.0142	0.1208 (0.0027)	0.0126 (0.0038)	0.9430 (0.0073)	0.0147 (0.0007)	1000
RP (5)	0.7581	0.0141	0.1209 (0.0027)	0.0081 (0.0038)	0.9390 (0.0076)	0.0147 (0.0007)	1000
RP (9)	0.7590	0.0142	0.1211 (0.0027)	0.0090 (0.0038)	0.9390 (0.0076)	0.0147 (0.0007)	1000
RP (P)	0.7594	0.0140	0.1197 (0.0027)	0.0094 (0.0038)	0.9400 (0.0075)	0.0144 (0.0007)	1000
FP (W)	0.9477	0.0153	0.1211 (0.0029)	0.1977 (0.0041)	0.6804 (0.0158)	0.0537 (0.0018)	876
FP (k=10)	0.7777	0.0141	0.1193 (0.0027)	0.0277 (0.0038)	0.9440 (0.0073)	0.0150 (0.0007)	1000
FP (k=10000)	1.4016	0.0175	0.1673 (0.0037)	0.6516 (0.0053)	0.0040 (0.0020)	0.4525 (0.0070)	1000

Table 200: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.6253	0.0102	0.1016 (0.0023)	-0.1247 (0.0032)	0.7140 (0.0143)	0.0259 (0.0008)	1000
Exp	0.9080	0.0090	0.0918 (0.0021)	0.1580 (0.0029)	0.6590 (0.0150)	0.0334 (0.0010)	994
Weibull	0.7069	0.0102	0.0907 (0.0020)	-0.0431 (0.0029)	0.9327 (0.0079)	0.0101 (0.0004)	995
Gompertz	0.8963	0.0139	0.0897 (0.0033)	0.1463 (0.0046)	0.8628 (0.0177)	0.0294 (0.0016)	379
RP (3)	0.7515	0.0152	0.1254 (0.0028)	0.0015 (0.0040)	0.9420 (0.0074)	0.0157 (0.0007)	1000
RP (5)	0.7547	0.0152	0.1254 (0.0028)	0.0047 (0.0040)	0.9460 (0.0071)	0.0157 (0.0007)	1000
RP (9)	0.7557	0.0153	0.1255 (0.0028)	0.0057 (0.0040)	0.9490 (0.0070)	0.0158 (0.0007)	1000
RP (P)	0.7529	0.0150	0.1236 (0.0028)	0.0029 (0.0039)	0.9470 (0.0071)	0.0153 (0.0007)	1000
FP (W)	0.7588	0.0136	0.1150 (0.0026)	0.0088 (0.0037)	0.9551 (0.0066)	0.0133 (0.0006)	979
FP (k=10)	0.7754	0.0157	0.1305 (0.0029)	0.0254 (0.0041)	0.9470 (0.0071)	0.0177 (0.0009)	1000
FP (k=10000)	0.7329	0.0104	0.1203 (0.0027)	-0.0171 (0.0038)	0.8820 (0.0102)	0.0148 (0.0007)	1000

Table 201: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2440	0.0176	0.1365 (0.0031)	-0.0060 (0.0043)	0.9410 (0.0075)	0.0186 (0.0009)	1000
Exp	1.2459	0.0121	0.1127 (0.0025)	-0.0041 (0.0036)	0.9450 (0.0072)	0.0127 (0.0006)	1000
Weibull	1.2512	0.0161	0.1299 (0.0029)	0.0012 (0.0041)	0.9470 (0.0071)	0.0169 (0.0008)	1000
Gompertz	1.2321	0.0171	0.1169 (0.0040)	-0.0179 (0.0056)	0.9656 (0.0087)	0.0140 (0.0009)	436
RP (3)	1.2486	0.0177	0.1368 (0.0031)	-0.0014 (0.0043)	0.9390 (0.0076)	0.0187 (0.0009)	1000
RP (5)	1.2492	0.0177	0.1369 (0.0031)	-0.0008 (0.0043)	0.9390 (0.0076)	0.0187 (0.0009)	1000
RP (9)	1.2495	0.0177	0.1370 (0.0031)	-0.0005 (0.0043)	0.9380 (0.0076)	0.0188 (0.0009)	1000
RP (P)	1.2494	0.0165	0.1319 (0.0030)	-0.0006 (0.0042)	0.9460 (0.0071)	0.0174 (0.0008)	1000
FP (W)	1.2513	0.0161	0.1300 (0.0029)	0.0013 (0.0041)	0.9469 (0.0071)	0.0169 (0.0008)	998
FP (k=10)	1.2429	0.0176	0.1368 (0.0031)	-0.0071 (0.0044)	0.9383 (0.0077)	0.0188 (0.0009)	988
FP (k=10000)	1.2452	0.0119	0.1344 (0.0030)	-0.0048 (0.0043)	0.9010 (0.0094)	0.0181 (0.0008)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 202: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2502	0.0206	0.1504 (0.0034)	0.0002 (0.0048)	0.9317 (0.0080)	0.0226 (0.0010)	996
Exp	1.7328	0.0215	0.1557 (0.0035)	0.4828 (0.0049)	0.0830 (0.0087)	0.2574 (0.0049)	1000
Weibull	1.2682	0.0194	0.1462 (0.0033)	0.0182 (0.0046)	0.9410 (0.0075)	0.0217 (0.0010)	1000
Gompertz	1.7364	0.0294	0.1476 (0.0053)	0.4864 (0.0074)	0.1196 (0.0164)	0.2583 (0.0075)	393
RP (3)	1.2550	0.0207	0.1510 (0.0034)	0.0050 (0.0048)	0.9370 (0.0077)	0.0228 (0.0010)	1000
RP (5)	1.2557	0.0207	0.1512 (0.0034)	0.0057 (0.0048)	0.9350 (0.0078)	0.0229 (0.0010)	1000
RP (9)	1.2563	0.0207	0.1513 (0.0034)	0.0063 (0.0048)	0.9340 (0.0079)	0.0229 (0.0010)	1000
RP (P)	1.2620	0.0198	0.1492 (0.0033)	0.0120 (0.0047)	0.9350 (0.0078)	0.0224 (0.0010)	1000
FP (W)	1.2682	0.0194	0.1462 (0.0033)	0.0182 (0.0046)	0.9410 (0.0075)	0.0217 (0.0010)	1000
FP (k=10)	1.2678	0.0209	0.1526 (0.0034)	0.0178 (0.0048)	0.9380 (0.0076)	0.0236 (0.0011)	1000
FP (k=10000)	1.4026	0.0170	0.1564 (0.0035)	0.1526 (0.0049)	0.7610 (0.0135)	0.0477 (0.0019)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 203: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2437	0.0147	0.1228 (0.0028)	-0.0063 (0.0039)	0.9408 (0.0075)	0.0151 (0.0007)	996
Exp	0.8475	0.0065	0.0818 (0.0018)	-0.4025 (0.0026)	0.0070 (0.0026)	0.1687 (0.0020)	1000
Weibull	1.0827	0.0114	0.1084 (0.0024)	-0.1673 (0.0034)	0.6240 (0.0153)	0.0397 (0.0012)	1000
Gompertz	0.8416	0.0098	0.0811 (0.0025)	-0.4084 (0.0035)	0.0113 (0.0046)	0.1733 (0.0029)	529
RP (3)	1.2435	0.0147	0.1225 (0.0027)	-0.0065 (0.0039)	0.9420 (0.0074)	0.0150 (0.0007)	1000
RP (5)	1.2480	0.0147	0.1231 (0.0028)	-0.0020 (0.0039)	0.9400 (0.0075)	0.0151 (0.0007)	1000
RP (9)	1.2492	0.0148	0.1232 (0.0028)	-0.0008 (0.0039)	0.9410 (0.0075)	0.0152 (0.0007)	1000
RP (P)	1.2121	0.0139	0.1214 (0.0027)	-0.0379 (0.0038)	0.9240 (0.0084)	0.0162 (0.0007)	1000
FP (W)	1.0827	0.0114	0.1084 (0.0024)	-0.1673 (0.0034)	0.6240 (0.0153)	0.0397 (0.0012)	1000
FP (k=10)	1.2418	0.0145	0.1221 (0.0027)	-0.0082 (0.0039)	0.9390 (0.0076)	0.0150 (0.0007)	1000
FP (k=10000)	1.2279	0.0085	0.1185 (0.0027)	-0.0221 (0.0037)	0.8710 (0.0106)	0.0145 (0.0007)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 204: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2463	0.0154	0.1242 (0.0028)	-0.0037 (0.0039)	0.9458 (0.0072)	0.0154 (0.0007)	996
Exp	0.6525	0.0052	0.0675 (0.0015)	-0.5975 (0.0021)	0.0000 (0.0000)	0.3615 (0.0025)	1000
Weibull	1.4347	0.0158	0.1264 (0.0028)	0.1847 (0.0040)	0.7180 (0.0142)	0.0501 (0.0017)	1000
Gompertz	0.6493	0.0082	0.0660 (0.0019)	-0.6007 (0.0026)	0.0000 (0.0000)	0.3652 (0.0031)	633
RP (3)	1.2554	0.0155	0.1249 (0.0028)	0.0054 (0.0040)	0.9450 (0.0072)	0.0156 (0.0008)	1000
RP (5)	1.2513	0.0154	0.1244 (0.0028)	0.0013 (0.0039)	0.9450 (0.0072)	0.0155 (0.0008)	1000
RP (9)	1.2518	0.0154	0.1245 (0.0028)	0.0018 (0.0039)	0.9450 (0.0072)	0.0155 (0.0008)	1000
RP (P)	1.2603	0.0154	0.1247 (0.0028)	0.0103 (0.0040)	0.9458 (0.0072)	0.0156 (0.0008)	996
FP (W)	1.4347	0.0158	0.1267 (0.0028)	0.1847 (0.0040)	0.7166 (0.0143)	0.0502 (0.0017)	995
FP (k=10)	1.2486	0.0154	0.1253 (0.0028)	-0.0014 (0.0040)	0.9440 (0.0073)	0.0157 (0.0008)	1000
FP (k=10000)	1.7205	0.0128	0.1638 (0.0037)	0.4705 (0.0052)	0.0500 (0.0069)	0.2482 (0.0049)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 205: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2453	0.0188	0.1387 (0.0031)	-0.0047 (0.0044)	0.9419 (0.0074)	0.0192 (0.0009)	999
Exp	1.4533	0.0153	0.1259 (0.0028)	0.2033 (0.0040)	0.6400 (0.0152)	0.0572 (0.0019)	1000
Weibull	1.2768	0.0174	0.1331 (0.0030)	0.0268 (0.0042)	0.9520 (0.0068)	0.0184 (0.0009)	1000
Gompertz	1.4524	0.0217	0.1292 (0.0046)	0.2024 (0.0064)	0.7935 (0.0202)	0.0576 (0.0030)	402
RP (3)	1.2482	0.0188	0.1387 (0.0031)	-0.0018 (0.0044)	0.9430 (0.0073)	0.0192 (0.0009)	1000
RP (5)	1.2501	0.0189	0.1391 (0.0031)	0.0001 (0.0044)	0.9440 (0.0073)	0.0193 (0.0009)	1000
RP (9)	1.2508	0.0189	0.1392 (0.0031)	0.0008 (0.0044)	0.9430 (0.0073)	0.0193 (0.0009)	1000
RP (P)	1.2543	0.0187	0.1385 (0.0031)	0.0043 (0.0044)	0.9430 (0.0073)	0.0192 (0.0009)	1000
FP (W)	1.2768	0.0174	0.1331 (0.0030)	0.0268 (0.0042)	0.9520 (0.0068)	0.0184 (0.0009)	1000
FP (k=10)	1.2456	0.0188	0.1390 (0.0031)	-0.0044 (0.0044)	0.9384 (0.0076)	0.0193 (0.0009)	990
FP (k=10000)	1.2199	0.0130	0.1363 (0.0031)	-0.0301 (0.0043)	0.8870 (0.0100)	0.0195 (0.0008)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 206: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.0333	0.0200	0.1388 (0.0031)	-0.2167 (0.0044)	0.6240 (0.0153)	0.0662 (0.0019)	1000
Exp	1.1431	0.0119	0.1065 (0.0024)	-0.1069 (0.0034)	0.8101 (0.0124)	0.0228 (0.0008)	995
Weibull	1.0971	0.0185	0.1272 (0.0028)	-0.1529 (0.0040)	0.7693 (0.0133)	0.0395 (0.0013)	997
Gompertz	1.1400	0.0185	0.1092 (0.0042)	-0.1100 (0.0060)	0.8839 (0.0175)	0.0240 (0.0015)	336
RP (3)	1.2454	0.0276	0.1655 (0.0037)	-0.0046 (0.0052)	0.9430 (0.0073)	0.0274 (0.0013)	1000
RP (5)	1.2452	0.0275	0.1654 (0.0037)	-0.0048 (0.0052)	0.9420 (0.0074)	0.0274 (0.0013)	1000
RP (9)	1.2453	0.0275	0.1653 (0.0037)	-0.0047 (0.0052)	0.9430 (0.0073)	0.0273 (0.0013)	1000
RP (P)	1.2520	0.0263	0.1626 (0.0036)	0.0020 (0.0051)	0.9420 (0.0074)	0.0264 (0.0013)	1000
FP (W)	1.2579	0.0260	0.1617 (0.0038)	0.0079 (0.0053)	0.9414 (0.0077)	0.0262 (0.0013)	921
FP (k=10)	1.2443	0.0272	0.1626 (0.0037)	-0.0057 (0.0052)	0.9482 (0.0071)	0.0264 (0.0012)	984
FP (k=10000)	1.2436	0.0181	0.1511 (0.0034)	-0.0064 (0.0048)	0.9100 (0.0090)	0.0229 (0.0010)	1000

Table 207: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.0334	0.0208	0.1402 (0.0031)	-0.2166 (0.0044)	0.6190 (0.0154)	0.0666 (0.0020)	1000
Exp	1.9041	0.0273	0.1667 (0.0037)	0.6541 (0.0053)	0.0061 (0.0025)	0.4556 (0.0072)	991
Weibull	1.1281	0.0202	0.1293 (0.0029)	-0.1219 (0.0041)	0.8509 (0.0113)	0.0316 (0.0011)	999
Gompertz	1.8842	0.0395	0.1562 (0.0065)	0.6342 (0.0091)	0.0171 (0.0076)	0.4265 (0.0122)	293
RP (3)	1.2642	0.0297	0.1703 (0.0038)	0.0142 (0.0054)	0.9610 (0.0061)	0.0292 (0.0013)	1000
RP (5)	1.2630	0.0297	0.1701 (0.0038)	0.0130 (0.0054)	0.9590 (0.0063)	0.0291 (0.0013)	1000
RP (9)	1.2625	0.0296	0.1699 (0.0038)	0.0125 (0.0054)	0.9590 (0.0063)	0.0290 (0.0013)	1000
RP (P)	1.2715	0.0292	0.1702 (0.0038)	0.0215 (0.0054)	0.9570 (0.0064)	0.0294 (0.0013)	1000
FP (W)	1.2923	0.0287	0.1661 (0.0038)	0.0423 (0.0054)	0.9614 (0.0062)	0.0293 (0.0013)	958
FP (k=10)	1.4112	0.0324	0.1844 (0.0041)	0.1612 (0.0058)	0.8677 (0.0107)	0.0599 (0.0025)	998
FP (k=10000)	1.7008	0.0297	0.1938 (0.0043)	0.4508 (0.0061)	0.2615 (0.0139)	0.2407 (0.0059)	998

Table 208: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.0495	0.0197	0.1366 (0.0031)	-0.2005 (0.0043)	0.6470 (0.0151)	0.0589 (0.0017)	1000
Exp	0.7015	0.0060	0.0780 (0.0017)	-0.5485 (0.0025)	0.0000 (0.0000)	0.3069 (0.0027)	997
Weibull	0.9367	0.0149	0.1154 (0.0026)	-0.3133 (0.0037)	0.2767 (0.0142)	0.1115 (0.0022)	994
Gompertz	0.6968	0.0099	0.0761 (0.0024)	-0.5532 (0.0034)	0.0000 (0.0000)	0.3118 (0.0037)	510
RP (3)	1.2420	0.0259	0.1591 (0.0036)	-0.0080 (0.0050)	0.9470 (0.0071)	0.0253 (0.0012)	1000
RP (5)	1.2455	0.0260	0.1590 (0.0036)	-0.0045 (0.0050)	0.9490 (0.0070)	0.0253 (0.0012)	1000
RP (9)	1.2466	0.0260	0.1589 (0.0036)	-0.0034 (0.0050)	0.9480 (0.0070)	0.0252 (0.0012)	1000
RP (P)	1.2126	0.0248	0.1575 (0.0035)	-0.0374 (0.0050)	0.9400 (0.0075)	0.0262 (0.0011)	1000
FP (W)	1.0575	0.0206	0.1475 (0.0035)	-0.1925 (0.0049)	0.6814 (0.0155)	0.0588 (0.0019)	904
FP (k=10)	1.2450	0.0257	0.1578 (0.0035)	-0.0050 (0.0050)	0.9479 (0.0070)	0.0249 (0.0011)	999
FP (k=10000)	1.2524	0.0154	0.1545 (0.0035)	0.0024 (0.0049)	0.8900 (0.0099)	0.0239 (0.0011)	1000

Table 209: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.0511	0.0197	0.1330 (0.0030)	-0.1989 (0.0042)	0.6700 (0.0149)	0.0572 (0.0017)	1000
Exp	0.3573	0.0028	0.0442 (0.0010)	-0.8927 (0.0014)	0.0000 (0.0000)	0.7989 (0.0025)	1000
Weibull	1.2511	0.0205	0.1230 (0.0028)	0.0011 (0.0039)	0.9739 (0.0050)	0.0151 (0.0007)	998
Gompertz	0.3708	0.0050	0.0896 (0.0026)	-0.8792 (0.0036)	0.0000 (0.0000)	0.7810 (0.0054)	614
RP (3)	1.2538	0.0264	0.1549 (0.0035)	0.0038 (0.0049)	0.9570 (0.0064)	0.0240 (0.0011)	1000
RP (5)	1.2511	0.0264	0.1553 (0.0035)	0.0011 (0.0049)	0.9550 (0.0066)	0.0241 (0.0011)	1000
RP (9)	1.2523	0.0264	0.1556 (0.0035)	0.0023 (0.0049)	0.9560 (0.0065)	0.0242 (0.0011)	1000
RP (P)	1.2460	0.0260	0.1536 (0.0034)	-0.0040 (0.0049)	0.9590 (0.0063)	0.0236 (0.0011)	1000
FP (W)	1.4439	0.0282	0.1591 (0.0042)	0.1939 (0.0059)	0.8469 (0.0134)	0.0629 (0.0026)	725
FP (k=10)	1.2778	0.0263	0.1539 (0.0034)	0.0278 (0.0049)	0.9709 (0.0053)	0.0244 (0.0011)	998
FP (k=10000)	2.0911	0.0330	0.2085 (0.0047)	0.8411 (0.0066)	0.0060 (0.0024)	0.7509 (0.0111)	1000

Table 210: Simulation results for frailty variance, scenario with 750 clusters of 2 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.0411	0.0204	0.1414 (0.0032)	-0.2089 (0.0045)	0.6510 (0.0151)	0.0636 (0.0019)	1000
Exp	1.4192	0.0168	0.1333 (0.0030)	0.1692 (0.0042)	0.7753 (0.0132)	0.0464 (0.0018)	997
Weibull	1.0897	0.0186	0.1259 (0.0028)	-0.1603 (0.0040)	0.7462 (0.0138)	0.0415 (0.0013)	997
Gompertz	1.4123	0.0259	0.1366 (0.0059)	0.1623 (0.0084)	0.9060 (0.0179)	0.0449 (0.0033)	266
RP (3)	1.2597	0.0287	0.1706 (0.0038)	0.0097 (0.0054)	0.9510 (0.0068)	0.0292 (0.0013)	1000
RP (5)	1.2615	0.0287	0.1703 (0.0038)	0.0115 (0.0054)	0.9490 (0.0070)	0.0291 (0.0013)	1000
RP (9)	1.2622	0.0287	0.1700 (0.0038)	0.0122 (0.0054)	0.9510 (0.0068)	0.0290 (0.0013)	1000
RP (P)	1.2569	0.0283	0.1685 (0.0038)	0.0069 (0.0053)	0.9500 (0.0069)	0.0284 (0.0013)	1000
FP (W)	1.2461	0.0263	0.1623 (0.0037)	-0.0039 (0.0053)	0.9494 (0.0071)	0.0263 (0.0012)	949
FP (k=10)	1.3242	0.0301	0.1802 (0.0040)	0.0742 (0.0057)	0.9296 (0.0081)	0.0379 (0.0019)	995
FP (k=10000)	1.2732	0.0199	0.1684 (0.0038)	0.0232 (0.0053)	0.9010 (0.0094)	0.0289 (0.0014)	1000

Table 211: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2366	0.0060	0.0746 (0.0017)	-0.0134 (0.0024)	0.8640 (0.0109)	0.0057 (0.0003)	985
Exp	0.2362	0.0060	0.0741 (0.0017)	-0.0138 (0.0023)	0.8720 (0.0106)	0.0057 (0.0002)	1000
Weibull	0.2367	0.0060	0.0744 (0.0017)	-0.0133 (0.0024)	0.8740 (0.0105)	0.0057 (0.0002)	1000
Gompertz	0.2343	0.0059	0.0762 (0.0023)	-0.0157 (0.0033)	0.8558 (0.0150)	0.0060 (0.0004)	548
RP (3)	0.2365	0.0060	0.0744 (0.0017)	-0.0135 (0.0024)	0.8749 (0.0105)	0.0057 (0.0002)	999
RP (5)	0.2364	0.0060	0.0744 (0.0017)	-0.0136 (0.0024)	0.8750 (0.0105)	0.0057 (0.0002)	1000
RP (9)	0.2364	0.0060	0.0744 (0.0017)	-0.0136 (0.0024)	0.8750 (0.0105)	0.0057 (0.0002)	1000
RP (P)	0.2365	0.0060	0.0744 (0.0017)	-0.0135 (0.0024)	0.8750 (0.0105)	0.0057 (0.0002)	1000
FP (W)	0.2367	0.0060	0.0744 (0.0017)	-0.0133 (0.0024)	0.8739 (0.0105)	0.0057 (0.0002)	999
FP (k=10)	0.2365	0.0060	0.0745 (0.0017)	-0.0135 (0.0024)	0.8750 (0.0105)	0.0057 (0.0002)	1000
FP (k=10000)	0.2363	0.0060	0.0743 (0.0017)	-0.0137 (0.0024)	0.8740 (0.0105)	0.0057 (0.0002)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 212: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2342	0.0059	0.0762 (0.0017)	-0.0158 (0.0024)	0.8523 (0.0113)	0.0061 (0.0003)	982
Exp	0.2750	0.0080	0.0872 (0.0020)	0.0250 (0.0028)	0.9400 (0.0075)	0.0082 (0.0004)	1000
Weibull	0.2345	0.0060	0.0760 (0.0017)	-0.0155 (0.0024)	0.8630 (0.0109)	0.0060 (0.0003)	1000
Gompertz	0.2740	0.0079	0.0813 (0.0027)	0.0240 (0.0038)	0.9509 (0.0102)	0.0072 (0.0006)	448
RP (3)	0.2338	0.0060	0.0759 (0.0017)	-0.0162 (0.0024)	0.8620 (0.0109)	0.0060 (0.0003)	1000
RP (5)	0.2339	0.0060	0.0759 (0.0017)	-0.0161 (0.0024)	0.8620 (0.0109)	0.0060 (0.0003)	1000
RP (9)	0.2339	0.0060	0.0759 (0.0017)	-0.0161 (0.0024)	0.8620 (0.0109)	0.0060 (0.0003)	1000
RP (P)	0.2341	0.0060	0.0759 (0.0017)	-0.0159 (0.0024)	0.8620 (0.0109)	0.0060 (0.0003)	1000
FP (W)	0.2345	0.0060	0.0761 (0.0017)	-0.0155 (0.0024)	0.8627 (0.0109)	0.0060 (0.0003)	998
FP (k=10)	0.2381	0.0064	0.0784 (0.0018)	-0.0119 (0.0025)	0.8709 (0.0106)	0.0063 (0.0003)	999
FP (k=10000)	0.2430	0.0065	0.0795 (0.0018)	-0.0070 (0.0025)	0.8799 (0.0103)	0.0064 (0.0003)	999
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 213: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2374	0.0059	0.0757 (0.0017)	-0.0126 (0.0024)	0.8531 (0.0113)	0.0059 (0.0002)	980
Exp	0.1752	0.0034	0.0594 (0.0013)	-0.0748 (0.0019)	0.5990 (0.0155)	0.0091 (0.0003)	1000
Weibull	0.2167	0.0051	0.0704 (0.0016)	-0.0333 (0.0022)	0.8130 (0.0123)	0.0061 (0.0002)	1000
Gompertz	0.2360	0.0060	0.0745 (0.0017)	-0.0140 (0.0024)	0.8619 (0.0109)	0.0057 (0.0002)	999
RP (3)	0.2360	0.0060	0.0755 (0.0017)	-0.0140 (0.0024)	0.8620 (0.0109)	0.0059 (0.0002)	1000
RP (5)	0.2366	0.0060	0.0756 (0.0017)	-0.0134 (0.0024)	0.8610 (0.0109)	0.0059 (0.0002)	1000
RP (9)	0.2368	0.0060	0.0756 (0.0017)	-0.0132 (0.0024)	0.8610 (0.0109)	0.0059 (0.0002)	1000
RP (P)	0.2341	0.0059	0.0751 (0.0017)	-0.0159 (0.0024)	0.8570 (0.0111)	0.0059 (0.0002)	1000
FP (W)	0.2167	0.0051	0.0704 (0.0016)	-0.0333 (0.0022)	0.8130 (0.0123)	0.0061 (0.0002)	1000
FP (k=10)	0.2367	0.0060	0.0757 (0.0017)	-0.0133 (0.0024)	0.8610 (0.0109)	0.0059 (0.0002)	1000
FP (k=10000)	0.2344	0.0059	0.0751 (0.0017)	-0.0156 (0.0024)	0.8590 (0.0110)	0.0059 (0.0002)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 214: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2407	0.0061	0.0777 (0.0017)	-0.0093 (0.0025)	0.8590 (0.0111)	0.0061 (0.0003)	986
Exp	0.1567	0.0028	0.0559 (0.0012)	-0.0933 (0.0018)	0.4900 (0.0158)	0.0118 (0.0003)	1000
Weibull	0.2612	0.0072	0.0829 (0.0019)	0.0112 (0.0026)	0.9150 (0.0088)	0.0070 (0.0004)	1000
Gompertz	0.2417	0.0062	0.0771 (0.0017)	-0.0083 (0.0024)	0.8740 (0.0105)	0.0060 (0.0003)	1000
RP (3)	0.2403	0.0062	0.0778 (0.0017)	-0.0097 (0.0025)	0.8719 (0.0106)	0.0061 (0.0003)	999
RP (5)	0.2401	0.0062	0.0778 (0.0017)	-0.0099 (0.0025)	0.8710 (0.0106)	0.0061 (0.0003)	1000
RP (9)	0.2402	0.0062	0.0778 (0.0017)	-0.0098 (0.0025)	0.8700 (0.0106)	0.0061 (0.0003)	1000
RP (P)	0.2406	0.0062	0.0779 (0.0017)	-0.0094 (0.0025)	0.8730 (0.0105)	0.0061 (0.0003)	1000
FP (W)	0.2612	0.0072	0.0829 (0.0019)	0.0112 (0.0026)	0.9149 (0.0088)	0.0070 (0.0004)	999
FP (k=10)	0.2489	0.0071	0.0825 (0.0018)	-0.0011 (0.0026)	0.8900 (0.0099)	0.0068 (0.0004)	1000
FP (k=10000)	5.3526	7.0519	6.8994 (0.1544)	5.1026 (0.2182)	0.5550 (0.0157)	73.5905 (3.4394)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 215: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.2433	0.0063	0.0793 (0.0018)	-0.0067 (0.0025)	0.8754 (0.0106)	0.0063 (0.0003)	979
Exp	0.2674	0.0076	0.0855 (0.0019)	0.0174 (0.0027)	0.9250 (0.0083)	0.0076 (0.0004)	1000
Weibull	0.2471	0.0066	0.0800 (0.0018)	-0.0029 (0.0025)	0.8960 (0.0097)	0.0064 (0.0003)	1000
Gompertz	0.2703	0.0077	0.0851 (0.0027)	0.0203 (0.0039)	0.9275 (0.0118)	0.0076 (0.0006)	483
RP (3)	0.2426	0.0064	0.0790 (0.0018)	-0.0074 (0.0025)	0.8830 (0.0102)	0.0063 (0.0003)	1000
RP (5)	0.2425	0.0064	0.0790 (0.0018)	-0.0075 (0.0025)	0.8830 (0.0102)	0.0063 (0.0003)	1000
RP (9)	0.2425	0.0064	0.0790 (0.0018)	-0.0075 (0.0025)	0.8830 (0.0102)	0.0063 (0.0003)	1000
RP (P)	0.2429	0.0064	0.0791 (0.0018)	-0.0071 (0.0025)	0.8830 (0.0102)	0.0063 (0.0003)	1000
FP (W)	0.2471	0.0066	0.0801 (0.0018)	-0.0029 (0.0025)	0.8968 (0.0096)	0.0064 (0.0003)	998
FP (k=10)	0.2433	0.0065	0.0795 (0.0018)	-0.0067 (0.0025)	0.8850 (0.0101)	0.0064 (0.0003)	1000
FP (k=10000)	0.2404	0.0063	0.0785 (0.0018)	-0.0096 (0.0025)	0.8790 (0.0103)	0.0062 (0.0003)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 216: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2491	0.0060	0.0825 (0.0018)	-0.0009 (0.0026)	0.8740 (0.0105)	0.0068 (0.0004)	1000
Exp	0.2355	0.0066	0.0782 (0.0017)	-0.0145 (0.0025)	0.8690 (0.0107)	0.0063 (0.0003)	1000
Weibull	0.2359	0.0066	0.0785 (0.0018)	-0.0141 (0.0025)	0.8700 (0.0106)	0.0064 (0.0003)	1000
Gompertz	0.2338	0.0065	0.0776 (0.0023)	-0.0162 (0.0033)	0.8698 (0.0143)	0.0063 (0.0004)	553
RP (3)	0.2355	0.0066	0.0783 (0.0018)	-0.0145 (0.0025)	0.8690 (0.0107)	0.0063 (0.0003)	1000
RP (5)	0.2356	0.0066	0.0784 (0.0018)	-0.0144 (0.0025)	0.8690 (0.0107)	0.0063 (0.0003)	1000
RP (9)	0.2356	0.0066	0.0784 (0.0018)	-0.0144 (0.0025)	0.8690 (0.0107)	0.0063 (0.0003)	1000
RP (P)	0.2357	0.0066	0.0784 (0.0018)	-0.0143 (0.0025)	0.8690 (0.0107)	0.0063 (0.0003)	1000
FP (W)	1.1442	0.4526	1.7847 (0.0468)	0.8942 (0.0661)	0.6187 (0.0180)	3.9803 (0.4737)	729
FP (k=10)	0.3006	0.0119	0.1557 (0.0036)	0.0506 (0.0050)	0.9083 (0.0093)	0.0268 (0.0035)	960
FP (k=10000)	0.3072	0.0111	0.1164 (0.0026)	0.0572 (0.0037)	0.9473 (0.0071)	0.0168 (0.0010)	986

Table 217: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2473	0.0061	0.0847 (0.0019)	-0.0027 (0.0027)	0.8490 (0.0113)	0.0072 (0.0004)	1000
Exp	0.2847	0.0097	0.0987 (0.0022)	0.0347 (0.0031)	0.9350 (0.0078)	0.0109 (0.0007)	1000
Weibull	0.2347	0.0067	0.0809 (0.0018)	-0.0153 (0.0026)	0.8609 (0.0109)	0.0068 (0.0003)	999
Gompertz	0.2801	0.0094	0.0953 (0.0032)	0.0301 (0.0046)	0.9375 (0.0116)	0.0100 (0.0009)	432
RP (3)	0.2338	0.0067	0.0806 (0.0018)	-0.0162 (0.0025)	0.8550 (0.0111)	0.0067 (0.0003)	1000
RP (5)	0.2339	0.0067	0.0806 (0.0018)	-0.0161 (0.0025)	0.8560 (0.0111)	0.0067 (0.0003)	1000
RP (9)	0.2339	0.0067	0.0806 (0.0018)	-0.0161 (0.0025)	0.8550 (0.0111)	0.0068 (0.0003)	1000
RP (P)	0.2342	0.0067	0.0807 (0.0018)	-0.0158 (0.0026)	0.8560 (0.0111)	0.0068 (0.0003)	1000
FP (W)	1.5704	0.9086	2.5593 (0.0637)	1.3204 (0.0900)	0.5582 (0.0175)	8.2854 (0.8843)	808
FP (k=10)	0.2946	0.0116	0.1520 (0.0035)	0.0446 (0.0049)	0.8826 (0.0103)	0.0251 (0.0029)	971
FP (k=10000)	0.3057	0.0111	0.1169 (0.0026)	0.0557 (0.0037)	0.9406 (0.0075)	0.0168 (0.0011)	993

Table 218: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2536	0.0061	0.0865 (0.0019)	0.0036 (0.0027)	0.8550 (0.0111)	0.0075 (0.0004)	1000
Exp	0.1714	0.0036	0.0606 (0.0014)	-0.0786 (0.0019)	0.5976 (0.0155)	0.0098 (0.0003)	999
Weibull	0.2173	0.0057	0.0753 (0.0017)	-0.0327 (0.0024)	0.8180 (0.0122)	0.0067 (0.0003)	1000
Gompertz	0.2380	0.0067	0.0793 (0.0018)	-0.0120 (0.0025)	0.8683 (0.0107)	0.0064 (0.0003)	995
RP (3)	0.2391	0.0068	0.0821 (0.0018)	-0.0109 (0.0026)	0.8650 (0.0108)	0.0068 (0.0003)	1000
RP (5)	0.2398	0.0069	0.0823 (0.0018)	-0.0102 (0.0026)	0.8670 (0.0107)	0.0069 (0.0003)	1000
RP (9)	0.2400	0.0069	0.0824 (0.0018)	-0.0100 (0.0026)	0.8680 (0.0107)	0.0069 (0.0003)	1000
RP (P)	0.2371	0.0067	0.0816 (0.0018)	-0.0129 (0.0026)	0.8640 (0.0108)	0.0068 (0.0003)	1000
FP (W)	2.4769	1.8769	3.5497 (0.0983)	2.2269 (0.1389)	0.4380 (0.0194)	17.5402 (1.7615)	653
FP (k=10)	0.3063	0.0123	0.1568 (0.0036)	0.0563 (0.0051)	0.8903 (0.0101)	0.0277 (0.0029)	957
FP (k=10000)	0.3559	0.0157	0.1635 (0.0037)	0.1059 (0.0052)	0.9044 (0.0094)	0.0379 (0.0029)	983

Table 219: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2506	0.0063	0.0847 (0.0019)	0.0006 (0.0027)	0.8520 (0.0112)	0.0072 (0.0003)	1000
Exp	0.1407	0.0025	0.0493 (0.0011)	-0.1093 (0.0016)	0.3780 (0.0153)	0.0144 (0.0003)	1000
Weibull	0.2611	0.0081	0.0873 (0.0020)	0.0111 (0.0028)	0.9060 (0.0092)	0.0077 (0.0004)	1000
Gompertz	0.2373	0.0067	0.0791 (0.0018)	-0.0127 (0.0025)	0.8660 (0.0108)	0.0064 (0.0003)	1000
RP (3)	0.2368	0.0067	0.0802 (0.0018)	-0.0132 (0.0025)	0.8680 (0.0107)	0.0066 (0.0003)	1000
RP (5)	0.2368	0.0067	0.0802 (0.0018)	-0.0132 (0.0025)	0.8690 (0.0107)	0.0066 (0.0003)	1000
RP (9)	0.2370	0.0067	0.0803 (0.0018)	-0.0130 (0.0025)	0.8690 (0.0107)	0.0066 (0.0003)	1000
RP (P)	0.2374	0.0067	0.0804 (0.0018)	-0.0126 (0.0025)	0.8690 (0.0107)	0.0066 (0.0003)	1000
FP (W)	2.2338	1.6430	3.3825 (0.0989)	1.9838 (0.1397)	0.5341 (0.0206)	15.3572 (1.6924)	586
FP (k=10)	0.3022	0.0117	0.1484 (0.0034)	0.0522 (0.0048)	0.8952 (0.0099)	0.0247 (0.0024)	964
FP (k=10000)	0.5222	0.0348	0.2657 (0.0060)	0.2722 (0.0084)	0.7674 (0.0134)	0.1446 (0.0103)	989

Table 220: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.2570	0.0065	0.0876 (0.0020)	0.0070 (0.0028)	0.8720 (0.0106)	0.0077 (0.0004)	1000
Exp	0.2721	0.0088	0.0923 (0.0021)	0.0221 (0.0029)	0.9238 (0.0084)	0.0090 (0.0005)	998
Weibull	0.2478	0.0074	0.0843 (0.0019)	-0.0022 (0.0027)	0.8900 (0.0099)	0.0071 (0.0004)	1000
Gompertz	0.2696	0.0086	0.0875 (0.0028)	0.0196 (0.0040)	0.9305 (0.0117)	0.0080 (0.0006)	475
RP (3)	0.2431	0.0071	0.0833 (0.0019)	-0.0069 (0.0026)	0.8780 (0.0103)	0.0070 (0.0003)	1000
RP (5)	0.2431	0.0071	0.0834 (0.0019)	-0.0069 (0.0026)	0.8780 (0.0103)	0.0070 (0.0003)	1000
RP (9)	0.2431	0.0071	0.0834 (0.0019)	-0.0069 (0.0026)	0.8780 (0.0103)	0.0070 (0.0003)	1000
RP (P)	0.2434	0.0071	0.0835 (0.0019)	-0.0066 (0.0026)	0.8790 (0.0103)	0.0070 (0.0003)	1000
FP (W)	1.7254	1.1303	2.8775 (0.0731)	1.4754 (0.1034)	0.5858 (0.0177)	10.4461 (1.1445)	775
FP (k=10)	0.2997	0.0117	0.1469 (0.0033)	0.0497 (0.0047)	0.9119 (0.0091)	0.0240 (0.0030)	976
FP (k=10000)	0.2987	0.0105	0.1119 (0.0025)	0.0487 (0.0036)	0.9408 (0.0075)	0.0149 (0.0010)	980

Table 221: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7150	0.0449	0.2179 (0.0050)	-0.0350 (0.0070)	0.8591 (0.0112)	0.0487 (0.0022)	958
Exp	0.7124	0.0460	0.2147 (0.0048)	-0.0376 (0.0068)	0.8820 (0.0102)	0.0475 (0.0021)	1000
Weibull	0.7135	0.0462	0.2151 (0.0048)	-0.0365 (0.0068)	0.8840 (0.0101)	0.0476 (0.0021)	1000
Gompertz	0.7004	0.0446	0.2111 (0.0067)	-0.0496 (0.0095)	0.8623 (0.0155)	0.0469 (0.0029)	494
RP (3)	0.7128	0.0462	0.2149 (0.0048)	-0.0372 (0.0068)	0.8840 (0.0101)	0.0475 (0.0021)	1000
RP (5)	0.7129	0.0462	0.2149 (0.0048)	-0.0371 (0.0068)	0.8840 (0.0101)	0.0475 (0.0021)	1000
RP (9)	0.7130	0.0462	0.2149 (0.0048)	-0.0370 (0.0068)	0.8840 (0.0101)	0.0475 (0.0021)	1000
RP (P)	0.7131	0.0462	0.2153 (0.0048)	-0.0369 (0.0068)	0.8839 (0.0101)	0.0477 (0.0021)	999
FP (W)	0.7135	0.0462	0.2151 (0.0048)	-0.0365 (0.0068)	0.8840 (0.0101)	0.0476 (0.0021)	1000
FP (k=10)	0.7142	0.0466	0.2157 (0.0048)	-0.0358 (0.0068)	0.8850 (0.0101)	0.0478 (0.0021)	1000
FP (k=10000)	0.7130	0.0462	0.2151 (0.0048)	-0.0370 (0.0068)	0.8840 (0.0101)	0.0476 (0.0021)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 222: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7277	0.0468	0.2130 (0.0049)	-0.0223 (0.0069)	0.8653 (0.0110)	0.0458 (0.0021)	965
Exp	0.8289	0.0604	0.2350 (0.0053)	0.0789 (0.0074)	0.9510 (0.0068)	0.0614 (0.0030)	1000
Weibull	0.7280	0.0482	0.2128 (0.0048)	-0.0220 (0.0067)	0.8920 (0.0098)	0.0457 (0.0021)	1000
Gompertz	0.8235	0.0598	0.2334 (0.0081)	0.0735 (0.0114)	0.9475 (0.0109)	0.0597 (0.0050)	419
RP (3)	0.7261	0.0480	0.2125 (0.0048)	-0.0239 (0.0067)	0.8880 (0.0100)	0.0457 (0.0021)	1000
RP (5)	0.7262	0.0480	0.2126 (0.0048)	-0.0238 (0.0067)	0.8880 (0.0100)	0.0457 (0.0021)	1000
RP (9)	0.7263	0.0480	0.2126 (0.0048)	-0.0237 (0.0067)	0.8890 (0.0099)	0.0457 (0.0021)	1000
RP (P)	0.7268	0.0480	0.2127 (0.0048)	-0.0232 (0.0067)	0.8890 (0.0099)	0.0457 (0.0021)	1000
FP (W)	0.7279	0.0482	0.2128 (0.0048)	-0.0221 (0.0067)	0.8920 (0.0098)	0.0457 (0.0021)	1000
FP (k=10)	0.7553	0.0556	0.2280 (0.0051)	0.0053 (0.0072)	0.9050 (0.0093)	0.0520 (0.0025)	1000
FP (k=10000)	0.7720	0.0546	0.2312 (0.0052)	0.0220 (0.0073)	0.9120 (0.0090)	0.0539 (0.0027)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 223: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7211	0.0457	0.2226 (0.0051)	-0.0289 (0.0072)	0.8613 (0.0111)	0.0504 (0.0024)	966
Exp	0.5820	0.0321	0.1941 (0.0043)	-0.1680 (0.0061)	0.6950 (0.0146)	0.0659 (0.0022)	1000
Weibull	0.6774	0.0421	0.2143 (0.0048)	-0.0726 (0.0068)	0.8420 (0.0115)	0.0512 (0.0022)	1000
Gompertz	0.5829	0.0317	0.1706 (0.0044)	-0.1671 (0.0063)	0.7297 (0.0163)	0.0570 (0.0021)	740
RP (3)	0.7179	0.0466	0.2209 (0.0049)	-0.0321 (0.0070)	0.8780 (0.0103)	0.0498 (0.0024)	1000
RP (5)	0.7189	0.0467	0.2210 (0.0049)	-0.0311 (0.0070)	0.8790 (0.0103)	0.0498 (0.0024)	1000
RP (9)	0.7193	0.0467	0.2211 (0.0049)	-0.0307 (0.0070)	0.8790 (0.0103)	0.0498 (0.0024)	1000
RP (P)	0.7140	0.0461	0.2202 (0.0049)	-0.0360 (0.0070)	0.8780 (0.0103)	0.0498 (0.0023)	1000
FP (W)	0.6774	0.0420	0.2143 (0.0048)	-0.0726 (0.0068)	0.8420 (0.0115)	0.0512 (0.0022)	1000
FP (k=10)	0.7204	0.0471	0.2220 (0.0050)	-0.0296 (0.0070)	0.8810 (0.0102)	0.0501 (0.0024)	1000
FP (k=10000)	0.7165	0.0464	0.2217 (0.0050)	-0.0335 (0.0070)	0.8770 (0.0104)	0.0502 (0.0024)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 224: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7186	0.0449	0.2223 (0.0051)	-0.0314 (0.0072)	0.8449 (0.0118)	0.0504 (0.0022)	948
Exp	0.5214	0.0265	0.1803 (0.0040)	-0.2286 (0.0057)	0.5680 (0.0157)	0.0847 (0.0025)	1000
Weibull	0.7585	0.0513	0.2272 (0.0051)	0.0085 (0.0072)	0.9060 (0.0092)	0.0516 (0.0024)	1000
Gompertz	0.6386	0.0369	0.1592 (0.0037)	-0.1114 (0.0052)	0.8588 (0.0113)	0.0377 (0.0016)	942
RP (3)	0.7170	0.0465	0.2205 (0.0049)	-0.0330 (0.0070)	0.8750 (0.0105)	0.0496 (0.0021)	1000
RP (5)	0.7165	0.0465	0.2203 (0.0049)	-0.0335 (0.0070)	0.8750 (0.0105)	0.0496 (0.0021)	1000
RP (9)	0.7163	0.0465	0.2201 (0.0049)	-0.0337 (0.0070)	0.8759 (0.0104)	0.0495 (0.0021)	999
RP (P)	0.7174	0.0466	0.2203 (0.0049)	-0.0326 (0.0070)	0.8760 (0.0104)	0.0496 (0.0021)	1000
FP (W)	0.7590	0.0514	0.2273 (0.0051)	0.0090 (0.0072)	0.9057 (0.0093)	0.0517 (0.0024)	997
FP (k=10)	0.7582	0.0562	0.2377 (0.0053)	0.0082 (0.0075)	0.9050 (0.0093)	0.0565 (0.0026)	1000
FP (k=10000)	13.7281	18.5251	3.8121 (0.0863)	12.9781 (0.1220)	0.0000 (0.0000)	182.9476 (3.4553)	977
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 225: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	0.7313	0.0469	0.2163 (0.0049)	-0.0187 (0.0069)	0.8762 (0.0106)	0.0471 (0.0022)	969
Exp	0.7841	0.0546	0.2241 (0.0050)	0.0341 (0.0071)	0.9280 (0.0082)	0.0513 (0.0026)	1000
Weibull	0.7372	0.0491	0.2154 (0.0048)	-0.0128 (0.0068)	0.9010 (0.0094)	0.0465 (0.0022)	1000
Gompertz	0.7805	0.0545	0.2296 (0.0076)	0.0305 (0.0108)	0.9320 (0.0118)	0.0535 (0.0039)	456
RP (3)	0.7292	0.0482	0.2144 (0.0048)	-0.0208 (0.0068)	0.8980 (0.0096)	0.0464 (0.0021)	1000
RP (5)	0.7294	0.0482	0.2145 (0.0048)	-0.0206 (0.0068)	0.8980 (0.0096)	0.0464 (0.0021)	1000
RP (9)	0.7295	0.0482	0.2145 (0.0048)	-0.0205 (0.0068)	0.8980 (0.0096)	0.0464 (0.0021)	1000
RP (P)	0.7300	0.0483	0.2146 (0.0048)	-0.0200 (0.0068)	0.8990 (0.0095)	0.0464 (0.0021)	1000
FP (W)	0.7371	0.0491	0.2154 (0.0048)	-0.0129 (0.0068)	0.9010 (0.0094)	0.0465 (0.0022)	1000
FP (k=10)	0.7362	0.0501	0.2180 (0.0049)	-0.0138 (0.0069)	0.9000 (0.0095)	0.0477 (0.0023)	1000
FP (k=10000)	0.7252	0.0478	0.2141 (0.0048)	-0.0248 (0.0068)	0.8960 (0.0097)	0.0464 (0.0021)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 226: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.7431	0.0551	0.2635 (0.0059)	-0.0069 (0.0083)	0.8460 (0.0114)	0.0694 (0.0036)	1000
Exp	0.6998	0.0566	0.2425 (0.0054)	-0.0502 (0.0077)	0.8457 (0.0114)	0.0613 (0.0029)	998
Weibull	0.7006	0.0570	0.2435 (0.0054)	-0.0494 (0.0077)	0.8468 (0.0114)	0.0617 (0.0029)	999
Gompertz	0.6799	0.0541	0.2419 (0.0077)	-0.0701 (0.0109)	0.8283 (0.0170)	0.0633 (0.0042)	495
RP (3)	0.6991	0.0568	0.2427 (0.0054)	-0.0509 (0.0077)	0.8470 (0.0114)	0.0614 (0.0029)	1000
RP (5)	0.6992	0.0568	0.2427 (0.0054)	-0.0508 (0.0077)	0.8470 (0.0114)	0.0614 (0.0029)	1000
RP (9)	0.6993	0.0569	0.2428 (0.0054)	-0.0507 (0.0077)	0.8470 (0.0114)	0.0615 (0.0029)	1000
RP (P)	0.6999	0.0569	0.2432 (0.0054)	-0.0501 (0.0077)	0.8480 (0.0114)	0.0616 (0.0029)	1000
FP (W)	2.7200	2.0050	3.5489 (0.0969)	1.9700 (0.1369)	0.6176 (0.0187)	16.4570 (1.9451)	672
FP (k=10)	0.8407	0.0914	0.4321 (0.0100)	0.0907 (0.0141)	0.8870 (0.0103)	0.1948 (0.0316)	938
FP (k=10000)	0.7910	0.0718	0.2828 (0.0064)	0.0410 (0.0091)	0.9012 (0.0096)	0.0815 (0.0052)	972

Table 227: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.7597	0.0596	0.2562 (0.0057)	0.0097 (0.0081)	0.8720 (0.0106)	0.0657 (0.0043)	1000
Exp	0.8853	0.0902	0.3008 (0.0067)	0.1353 (0.0095)	0.9469 (0.0071)	0.1087 (0.0072)	999
Weibull	0.7223	0.0605	0.2415 (0.0054)	-0.0277 (0.0076)	0.8850 (0.0101)	0.0591 (0.0035)	1000
Gompertz	0.8845	0.0892	0.2832 (0.0107)	0.1345 (0.0152)	0.9656 (0.0098)	0.0981 (0.0095)	349
RP (3)	0.7181	0.0599	0.2398 (0.0054)	-0.0319 (0.0076)	0.8830 (0.0102)	0.0584 (0.0035)	1000
RP (5)	0.7182	0.0599	0.2397 (0.0054)	-0.0318 (0.0076)	0.8830 (0.0102)	0.0584 (0.0035)	1000
RP (9)	0.7184	0.0599	0.2398 (0.0054)	-0.0316 (0.0076)	0.8830 (0.0102)	0.0584 (0.0035)	1000
RP (P)	0.7189	0.0600	0.2398 (0.0054)	-0.0311 (0.0076)	0.8830 (0.0102)	0.0584 (0.0035)	1000
FP (W)	2.6544	1.8546	3.3745 (0.0894)	1.9044 (0.1263)	0.6499 (0.0179)	14.9982 (1.6291)	714
FP (k=10)	0.8562	0.0913	0.3906 (0.0090)	0.1062 (0.0127)	0.9044 (0.0095)	0.1637 (0.0212)	952
FP (k=10000)	0.8302	0.0789	0.2841 (0.0064)	0.0802 (0.0091)	0.9282 (0.0083)	0.0871 (0.0059)	975

Table 228: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.7620	0.0575	0.2465 (0.0055)	0.0120 (0.0078)	0.8730 (0.0105)	0.0608 (0.0029)	1000
Exp	0.5384	0.0333	0.1797 (0.0040)	-0.2116 (0.0057)	0.6276 (0.0153)	0.0770 (0.0023)	999
Weibull	0.6604	0.0497	0.2142 (0.0048)	-0.0896 (0.0068)	0.8150 (0.0123)	0.0539 (0.0022)	1000
Gompertz	0.5402	0.0328	0.1541 (0.0041)	-0.2098 (0.0057)	0.6792 (0.0174)	0.0677 (0.0021)	720
RP (3)	0.7135	0.0578	0.2263 (0.0051)	-0.0365 (0.0072)	0.8830 (0.0102)	0.0525 (0.0024)	1000
RP (5)	0.7152	0.0581	0.2269 (0.0051)	-0.0348 (0.0072)	0.8830 (0.0102)	0.0527 (0.0024)	1000
RP (9)	0.7157	0.0582	0.2271 (0.0051)	-0.0343 (0.0072)	0.8830 (0.0102)	0.0527 (0.0024)	1000
RP (P)	0.7095	0.0572	0.2261 (0.0051)	-0.0405 (0.0071)	0.8780 (0.0103)	0.0527 (0.0024)	1000
FP (W)	2.6785	1.6574	3.0548 (0.0872)	1.9285 (0.1232)	0.5789 (0.0199)	13.0358 (1.3537)	615
FP (k=10)	0.8608	0.0877	0.3510 (0.0082)	0.1108 (0.0115)	0.9181 (0.0090)	0.1353 (0.0144)	928
FP (k=10000)	0.9303	0.1006	0.3613 (0.0083)	0.1803 (0.0117)	0.9298 (0.0083)	0.1629 (0.0117)	954

Table 229: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.7544	0.0550	0.2512 (0.0056)	0.0044 (0.0079)	0.8610 (0.0109)	0.0630 (0.0027)	1000
Exp	0.4234	0.0209	0.1430 (0.0032)	-0.3266 (0.0045)	0.3674 (0.0153)	0.1271 (0.0027)	999
Weibull	0.7663	0.0666	0.2442 (0.0055)	0.0163 (0.0077)	0.9130 (0.0089)	0.0599 (0.0027)	1000
Gompertz	0.6115	0.0414	0.1562 (0.0036)	-0.1385 (0.0052)	0.8226 (0.0126)	0.0435 (0.0018)	919
RP (3)	0.7089	0.0574	0.2307 (0.0052)	-0.0411 (0.0073)	0.8580 (0.0110)	0.0549 (0.0022)	1000
RP (5)	0.7087	0.0574	0.2309 (0.0052)	-0.0413 (0.0073)	0.8580 (0.0110)	0.0550 (0.0022)	1000
RP (9)	0.7091	0.0575	0.2311 (0.0052)	-0.0409 (0.0073)	0.8590 (0.0110)	0.0550 (0.0022)	1000
RP (P)	0.7096	0.0575	0.2308 (0.0052)	-0.0404 (0.0073)	0.8590 (0.0110)	0.0548 (0.0022)	1000
FP (W)	2.8997	1.9368	3.3202 (0.0983)	2.1497 (0.1389)	0.5989 (0.0205)	15.6255 (1.6905)	571
FP (k=10)	0.8556	0.0864	0.3457 (0.0080)	0.1056 (0.0113)	0.9148 (0.0091)	0.1305 (0.0110)	939
FP (k=10000)	1.3665	0.2284	0.6346 (0.0145)	0.6165 (0.0205)	0.8534 (0.0114)	0.7824 (0.0620)	962

Table 230: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 0.75, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	0.7537	0.0584	0.2472 (0.0055)	0.0037 (0.0078)	0.8790 (0.0103)	0.0611 (0.0031)	1000
Exp	0.7852	0.0701	0.2499 (0.0056)	0.0352 (0.0079)	0.9188 (0.0087)	0.0636 (0.0034)	997
Weibull	0.7150	0.0586	0.2272 (0.0051)	-0.0350 (0.0072)	0.8780 (0.0103)	0.0528 (0.0024)	1000
Gompertz	0.7752	0.0682	0.2379 (0.0081)	0.0252 (0.0115)	0.9182 (0.0132)	0.0571 (0.0042)	428
RP (3)	0.7100	0.0579	0.2286 (0.0051)	-0.0400 (0.0072)	0.8700 (0.0106)	0.0538 (0.0025)	1000
RP (5)	0.7101	0.0580	0.2286 (0.0051)	-0.0399 (0.0072)	0.8730 (0.0105)	0.0538 (0.0025)	1000
RP (9)	0.7102	0.0580	0.2286 (0.0051)	-0.0398 (0.0072)	0.8730 (0.0105)	0.0538 (0.0025)	1000
RP (P)	0.7106	0.0580	0.2286 (0.0051)	-0.0394 (0.0072)	0.8730 (0.0105)	0.0538 (0.0025)	1000
FP (W)	2.7657	2.0299	3.5402 (0.0958)	2.0157 (0.1354)	0.6170 (0.0186)	16.5781 (1.9751)	684
FP (k=10)	0.8768	0.1004	0.4585 (0.0105)	0.1268 (0.0149)	0.8903 (0.0102)	0.2261 (0.0321)	948
FP (k=10000)	0.7705	0.0672	0.2501 (0.0057)	0.0205 (0.0080)	0.9067 (0.0093)	0.0629 (0.0035)	975

Table 231: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2132	0.1208	0.3577 (0.0080)	-0.0368 (0.0114)	0.8879 (0.0100)	0.1292 (0.0061)	990
Exp	1.2146	0.1245	0.3596 (0.0080)	-0.0354 (0.0114)	0.8990 (0.0095)	0.1304 (0.0062)	1000
Weibull	1.2163	0.1250	0.3595 (0.0080)	-0.0337 (0.0114)	0.9010 (0.0094)	0.1302 (0.0062)	1000
Gompertz	1.2212	0.1256	0.3517 (0.0111)	-0.0288 (0.0157)	0.9124 (0.0126)	0.1243 (0.0083)	502
RP (3)	1.2147	0.1248	0.3591 (0.0080)	-0.0353 (0.0114)	0.9000 (0.0095)	0.1301 (0.0061)	1000
RP (5)	1.2148	0.1248	0.3591 (0.0080)	-0.0352 (0.0114)	0.9000 (0.0095)	0.1301 (0.0061)	1000
RP (9)	1.2149	0.1248	0.3592 (0.0080)	-0.0351 (0.0114)	0.9000 (0.0095)	0.1301 (0.0061)	1000
RP (P)	1.2155	0.1249	0.3593 (0.0080)	-0.0345 (0.0114)	0.9010 (0.0094)	0.1301 (0.0062)	1000
FP (W)	1.2162	0.1250	0.3595 (0.0080)	-0.0338 (0.0114)	0.9010 (0.0094)	0.1302 (0.0062)	1000
FP (k=10)	1.2192	0.1268	0.3615 (0.0081)	-0.0308 (0.0114)	0.9000 (0.0095)	0.1315 (0.0063)	1000
FP (k=10000)	1.2156	0.1250	0.3600 (0.0081)	-0.0344 (0.0114)	0.9000 (0.0095)	0.1307 (0.0062)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 232: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2027	0.1182	0.3352 (0.0076)	-0.0473 (0.0107)	0.8759 (0.0105)	0.1145 (0.0053)	983
Exp	1.3432	0.1485	0.3655 (0.0082)	0.0932 (0.0116)	0.9450 (0.0072)	0.1421 (0.0074)	1000
Weibull	1.2041	0.1232	0.3383 (0.0076)	-0.0459 (0.0107)	0.8950 (0.0097)	0.1165 (0.0053)	1000
Gompertz	1.3549	0.1510	0.3598 (0.0119)	0.1049 (0.0168)	0.9539 (0.0098)	0.1401 (0.0115)	456
RP (3)	1.2006	0.1227	0.3378 (0.0076)	-0.0494 (0.0107)	0.8940 (0.0097)	0.1164 (0.0053)	1000
RP (5)	1.2008	0.1227	0.3378 (0.0076)	-0.0492 (0.0107)	0.8940 (0.0097)	0.1164 (0.0053)	1000
RP (9)	1.2009	0.1227	0.3378 (0.0076)	-0.0491 (0.0107)	0.8940 (0.0097)	0.1164 (0.0053)	1000
RP (P)	1.2018	0.1229	0.3380 (0.0076)	-0.0482 (0.0107)	0.8940 (0.0097)	0.1164 (0.0053)	1000
FP (W)	1.2040	0.1232	0.3383 (0.0076)	-0.0460 (0.0107)	0.8950 (0.0097)	0.1165 (0.0053)	1000
FP (k=10)	1.2651	0.1482	0.3684 (0.0082)	0.0151 (0.0117)	0.9190 (0.0086)	0.1358 (0.0070)	1000
FP (k=10000)	1.2943	0.1465	0.4127 (0.0092)	0.0443 (0.0131)	0.9200 (0.0086)	0.1721 (0.0172)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 233: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2045	0.1152	0.3490 (0.0079)	-0.0455 (0.0111)	0.8675 (0.0108)	0.1237 (0.0055)	989
Exp	1.0217	0.0908	0.3213 (0.0072)	-0.2283 (0.0102)	0.7430 (0.0138)	0.1553 (0.0055)	1000
Weibull	1.1513	0.1116	0.3433 (0.0077)	-0.0987 (0.0109)	0.8600 (0.0110)	0.1275 (0.0052)	1000
Gompertz	1.0091	0.0893	0.3256 (0.0090)	-0.2409 (0.0128)	0.7165 (0.0177)	0.1639 (0.0068)	649
RP (3)	1.2043	0.1207	0.3510 (0.0079)	-0.0457 (0.0111)	0.8890 (0.0099)	0.1252 (0.0055)	1000
RP (5)	1.2055	0.1209	0.3512 (0.0079)	-0.0445 (0.0111)	0.8940 (0.0097)	0.1252 (0.0055)	1000
RP (9)	1.2059	0.1209	0.3512 (0.0079)	-0.0441 (0.0111)	0.8940 (0.0097)	0.1252 (0.0055)	1000
RP (P)	1.1989	0.1197	0.3501 (0.0078)	-0.0511 (0.0111)	0.8820 (0.0102)	0.1250 (0.0054)	1000
FP (W)	1.1513	0.1116	0.3433 (0.0077)	-0.0987 (0.0109)	0.8600 (0.0110)	0.1275 (0.0052)	1000
FP (k=10)	1.2092	0.1225	0.3534 (0.0079)	-0.0408 (0.0112)	0.8960 (0.0097)	0.1265 (0.0056)	1000
FP (k=10000)	1.2043	0.1207	0.3524 (0.0079)	-0.0457 (0.0111)	0.8850 (0.0101)	0.1261 (0.0055)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 234: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.1972	0.1129	0.3347 (0.0075)	-0.0528 (0.0106)	0.8620 (0.0109)	0.1147 (0.0052)	993
Exp	0.9264	0.0764	0.2942 (0.0066)	-0.3236 (0.0093)	0.6490 (0.0151)	0.1912 (0.0061)	1000
Weibull	1.2553	0.1288	0.3435 (0.0077)	0.0053 (0.0109)	0.9140 (0.0089)	0.1179 (0.0058)	1000
Gompertz	0.9385	0.0769	0.2567 (0.0067)	-0.3115 (0.0095)	0.6726 (0.0174)	0.1628 (0.0056)	727
RP (3)	1.2012	0.1195	0.3353 (0.0075)	-0.0488 (0.0106)	0.8900 (0.0099)	0.1147 (0.0053)	1000
RP (5)	1.2005	0.1194	0.3353 (0.0075)	-0.0495 (0.0106)	0.8900 (0.0099)	0.1148 (0.0053)	1000
RP (9)	1.2007	0.1194	0.3353 (0.0075)	-0.0493 (0.0106)	0.8900 (0.0099)	0.1148 (0.0053)	1000
RP (P)	1.2016	0.1195	0.3354 (0.0075)	-0.0484 (0.0106)	0.8900 (0.0099)	0.1147 (0.0053)	1000
FP (W)	1.2553	0.1288	0.3435 (0.0077)	0.0053 (0.0109)	0.9140 (0.0089)	0.1179 (0.0057)	1000
FP (k=10)	1.2840	0.1479	0.3640 (0.0081)	0.0340 (0.0115)	0.9190 (0.0086)	0.1335 (0.0068)	1000
FP (k=10000)	14.3374	20.4350	4.6662 (0.1046)	13.0874 (0.1479)	0.0000 (0.0000)	193.0326 (4.5684)	996
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 235: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a Gamma distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	1.2023	0.1198	0.3498 (0.0079)	-0.0477 (0.0111)	0.8682 (0.0108)	0.1245 (0.0060)	986
Exp	1.2762	0.1353	0.3645 (0.0082)	0.0262 (0.0115)	0.9110 (0.0090)	0.1334 (0.0071)	1000
Weibull	1.2103	0.1237	0.3519 (0.0079)	-0.0397 (0.0111)	0.8800 (0.0103)	0.1253 (0.0061)	1000
Gompertz	1.2786	0.1354	0.3503 (0.0118)	0.0286 (0.0166)	0.9210 (0.0128)	0.1233 (0.0095)	443
RP (3)	1.2014	0.1223	0.3518 (0.0079)	-0.0486 (0.0111)	0.8730 (0.0105)	0.1260 (0.0060)	1000
RP (5)	1.2019	0.1224	0.3520 (0.0079)	-0.0481 (0.0111)	0.8750 (0.0105)	0.1261 (0.0060)	1000
RP (9)	1.2020	0.1224	0.3521 (0.0079)	-0.0480 (0.0111)	0.8760 (0.0104)	0.1261 (0.0060)	1000
RP (P)	1.2025	0.1225	0.3520 (0.0079)	-0.0475 (0.0111)	0.8760 (0.0104)	0.1260 (0.0060)	1000
FP (W)	1.2103	0.1237	0.3519 (0.0079)	-0.0397 (0.0111)	0.8800 (0.0103)	0.1253 (0.0061)	1000
FP (k=10)	1.2190	0.1295	0.3611 (0.0081)	-0.0310 (0.0114)	0.8820 (0.0102)	0.1313 (0.0064)	1000
FP (k=10000)	1.1969	0.1216	0.3516 (0.0079)	-0.0531 (0.0111)	0.8700 (0.0106)	0.1263 (0.0060)	1000
Model frailty: log-Normal							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—

Table 236: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows an Exponential distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.2525	0.1580	0.4185 (0.0094)	0.0025 (0.0132)	0.8740 (0.0105)	0.1750 (0.0089)	1000
Exp	1.1844	0.1599	0.3914 (0.0088)	-0.0656 (0.0124)	0.8679 (0.0107)	0.1573 (0.0072)	999
Weibull	1.1866	0.1612	0.3942 (0.0088)	-0.0634 (0.0125)	0.8730 (0.0105)	0.1593 (0.0074)	1000
Gompertz	1.1828	0.1597	0.3838 (0.0129)	-0.0672 (0.0182)	0.8677 (0.0160)	0.1515 (0.0104)	446
RP (3)	1.1833	0.1606	0.3928 (0.0088)	-0.0667 (0.0124)	0.8720 (0.0106)	0.1586 (0.0073)	1000
RP (5)	1.1835	0.1607	0.3927 (0.0088)	-0.0665 (0.0124)	0.8720 (0.0106)	0.1585 (0.0073)	1000
RP (9)	1.1837	0.1607	0.3927 (0.0088)	-0.0663 (0.0124)	0.8720 (0.0106)	0.1585 (0.0073)	1000
RP (P)	1.1853	0.1610	0.3936 (0.0088)	-0.0647 (0.0124)	0.8730 (0.0105)	0.1590 (0.0074)	1000
FP (W)	3.7079	2.7298	3.6575 (0.1016)	2.4579 (0.1436)	0.6179 (0.0191)	19.3977 (1.8523)	649
FP (k=10)	1.3801	0.2273	0.5640 (0.0130)	0.1301 (0.0184)	0.9027 (0.0097)	0.3347 (0.0310)	935
FP (k=10000)	1.2758	0.1841	0.4215 (0.0097)	0.0258 (0.0137)	0.9134 (0.0091)	0.1781 (0.0110)	947

Table 237: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.2515	0.1716	0.4266 (0.0095)	0.0015 (0.0135)	0.8650 (0.0108)	0.1818 (0.0098)	1000
Exp	1.4900	0.2544	0.5108 (0.0114)	0.2400 (0.0162)	0.9470 (0.0071)	0.3183 (0.0186)	1000
Weibull	1.2094	0.1691	0.4109 (0.0092)	-0.0406 (0.0130)	0.8780 (0.0103)	0.1703 (0.0086)	1000
Gompertz	1.4398	0.2347	0.4533 (0.0160)	0.1898 (0.0226)	0.9431 (0.0115)	0.2410 (0.0230)	404
RP (3)	1.2015	0.1671	0.4077 (0.0091)	-0.0485 (0.0129)	0.8750 (0.0105)	0.1684 (0.0083)	1000
RP (5)	1.2012	0.1670	0.4070 (0.0091)	-0.0488 (0.0129)	0.8750 (0.0105)	0.1678 (0.0083)	1000
RP (9)	1.2012	0.1670	0.4066 (0.0091)	-0.0488 (0.0129)	0.8750 (0.0105)	0.1676 (0.0083)	1000
RP (P)	1.2018	0.1671	0.4066 (0.0091)	-0.0482 (0.0129)	0.8760 (0.0104)	0.1675 (0.0083)	1000
FP (W)	3.5032	2.6645	3.8025 (0.1022)	2.2532 (0.1444)	0.6681 (0.0179)	19.5152 (2.2218)	693
FP (k=10)	1.4213	0.2496	0.6401 (0.0148)	0.1713 (0.0210)	0.8991 (0.0099)	0.4386 (0.0451)	932
FP (k=10000)	1.3654	0.2138	0.4759 (0.0108)	0.1154 (0.0153)	0.9180 (0.0088)	0.2396 (0.0147)	964

Table 238: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Gompertz distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.2541	0.1672	0.4235 (0.0095)	0.0041 (0.0134)	0.8630 (0.0109)	0.1792 (0.0113)	1000
Exp	0.9194	0.0973	0.3197 (0.0072)	-0.3306 (0.0101)	0.6406 (0.0152)	0.2114 (0.0064)	999
Weibull	1.1080	0.1403	0.3738 (0.0084)	-0.1420 (0.0118)	0.8226 (0.0121)	0.1598 (0.0067)	998
Gompertz	0.8736	0.0886	0.3062 (0.0092)	-0.3764 (0.0130)	0.5722 (0.0210)	0.2353 (0.0084)	554
RP (3)	1.1840	0.1595	0.3901 (0.0087)	-0.0660 (0.0123)	0.8720 (0.0106)	0.1564 (0.0077)	1000
RP (5)	1.1868	0.1603	0.3909 (0.0087)	-0.0632 (0.0124)	0.8730 (0.0105)	0.1566 (0.0078)	1000
RP (9)	1.1875	0.1605	0.3910 (0.0087)	-0.0625 (0.0124)	0.8730 (0.0105)	0.1566 (0.0078)	1000
RP (P)	1.1797	0.1585	0.3899 (0.0087)	-0.0703 (0.0123)	0.8670 (0.0107)	0.1568 (0.0077)	1000
FP (W)	3.4351	2.3713	3.4349 (0.1024)	2.1851 (0.1446)	0.6383 (0.0202)	16.5522 (1.6936)	564
FP (k=10)	1.3970	0.2359	0.6132 (0.0144)	0.1470 (0.0204)	0.9013 (0.0099)	0.3972 (0.0507)	902
FP (k=10000)	1.4277	0.2308	0.4992 (0.0116)	0.1777 (0.0164)	0.9356 (0.0080)	0.2805 (0.0182)	932

Table 239: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (1) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.2458	0.1659	0.4082 (0.0091)	-0.0042 (0.0129)	0.8730 (0.0105)	0.1665 (0.0086)	1000
Exp	0.7098	0.0585	0.2427 (0.0054)	-0.5402 (0.0077)	0.3460 (0.0150)	0.3507 (0.0073)	1000
Weibull	1.2663	0.1812	0.4086 (0.0092)	0.0163 (0.0129)	0.9157 (0.0088)	0.1671 (0.0092)	997
Gompertz	0.7781	0.0669	0.1898 (0.0050)	-0.4719 (0.0070)	0.4718 (0.0185)	0.2587 (0.0059)	727
RP (3)	1.1844	0.1597	0.3887 (0.0087)	-0.0656 (0.0123)	0.8790 (0.0103)	0.1553 (0.0075)	1000
RP (5)	1.1848	0.1598	0.3894 (0.0087)	-0.0652 (0.0123)	0.8770 (0.0104)	0.1557 (0.0075)	1000
RP (9)	1.1858	0.1601	0.3897 (0.0087)	-0.0642 (0.0123)	0.8780 (0.0103)	0.1559 (0.0075)	1000
RP (P)	1.1856	0.1600	0.3892 (0.0087)	-0.0644 (0.0123)	0.8790 (0.0103)	0.1554 (0.0075)	1000
FP (W)	3.7818	2.6612	3.5561 (0.1081)	2.5318 (0.1527)	0.5959 (0.0211)	19.0330 (2.0449)	542
FP (k=10)	1.3671	0.2187	0.5337 (0.0125)	0.1171 (0.0176)	0.9064 (0.0096)	0.2983 (0.0272)	919
FP (k=10000)	2.0638	0.4992	0.8429 (0.0196)	0.8138 (0.0277)	0.9150 (0.0092)	1.3720 (0.1033)	929

Table 240: Simulation results for frailty variance, scenario with 20 clusters of 150 individuals each. The true frailty follows a log-Normal distribution with a variance of 1.25, and the true baseline hazard follows follows a Weibull-Weibull (2) distribution. Values in red are values where 95% confidence intervals for bias and coverage based on Monte Carlo standard errors did not include the value 0 or 95%, respectively.

Mod. baseline	Avg. Estimate	Avg. SE	Emp. SE	Bias	Coverage	MSE	N. Converged
Model frailty: Gamma							
Cox	—	—	—	—	—	—	—
Exp	—	—	—	—	—	—	—
Weibull	—	—	—	—	—	—	—
Gompertz	—	—	—	—	—	—	—
RP (3)	—	—	—	—	—	—	—
RP (5)	—	—	—	—	—	—	—
RP (9)	—	—	—	—	—	—	—
RP (P)	—	—	—	—	—	—	—
FP (W)	—	—	—	—	—	—	—
FP (k=10)	—	—	—	—	—	—	—
FP (k=10000)	—	—	—	—	—	—	—
Model frailty: log-Normal							
Cox	1.2682	0.1693	0.4567 (0.0102)	0.0182 (0.0144)	0.8659 (0.0108)	0.2087 (0.0196)	999
Exp	1.3306	0.2030	0.4546 (0.0102)	0.0806 (0.0144)	0.9178 (0.0087)	0.2129 (0.0122)	997
Weibull	1.2072	0.1680	0.4107 (0.0092)	-0.0428 (0.0130)	0.8808 (0.0103)	0.1703 (0.0087)	998
Gompertz	1.2996	0.1935	0.4365 (0.0157)	0.0496 (0.0222)	0.8990 (0.0153)	0.1925 (0.0158)	386
RP (3)	1.2075	0.1688	0.4160 (0.0093)	-0.0425 (0.0132)	0.8800 (0.0103)	0.1747 (0.0089)	1000
RP (5)	1.2075	0.1687	0.4154 (0.0093)	-0.0425 (0.0131)	0.8810 (0.0102)	0.1742 (0.0088)	1000
RP (9)	1.2077	0.1688	0.4154 (0.0093)	-0.0423 (0.0131)	0.8810 (0.0102)	0.1742 (0.0088)	1000
RP (P)	1.2081	0.1689	0.4155 (0.0093)	-0.0419 (0.0131)	0.8810 (0.0102)	0.1742 (0.0089)	1000
FP (W)	3.5658	2.5378	3.5329 (0.0959)	2.3158 (0.1355)	0.6324 (0.0185)	17.8256 (1.8802)	680
FP (k=10)	1.4164	0.2440	0.6141 (0.0143)	0.1664 (0.0201)	0.8999 (0.0098)	0.4044 (0.0380)	929
FP (k=10000)	1.2707	0.1857	0.4477 (0.0102)	0.0207 (0.0144)	0.8845 (0.0103)	0.2006 (0.0134)	961