LIFEREG: mod. Esponenziale a tratti senza frailty

The LIFEREG Procedure

Model Information		
Data Set	WORK.GUATEMALA	
Dependent Variable	Log(time)	time
Censoring Variable	death	death
Censoring Value(s)	0	
Number of Observations	13594	
Noncensored Values	403	
Right Censored Values	13191	
Left Censored Values	0	
Interval Censored Values	0	
Number of Parameters	16	
Name of Distribution	Exponential	
Log Likelihood	-1990.315153	

Number of Observations Read	13594
Number of Observations Used	13594

Fit Statistics	
-2 Log Likelihood	3980.630
AIC (smaller is better)	4012.630
AICC (smaller is better)	4012.670
BIC (smaller is better)	4132.908

Fit Statistics (Unlogged Response)	
-2 Log Likelihood	4877.067
Exponential AIC (smaller is better)	4909.067
Exponential AICC (smaller is better)	4909.107
Exponential BIC (smaller is better)	5029.346

Algorithm converged.

LIFEREG: mod. Esponenziale a tratti senza frailty

The LIFEREG Procedure

Type III Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
Intercept	0	.	.
a0	1	2.2448	0.1341
a1to5	1	26.8872	<.0001
a6to11	1	31.5430	<.0001
a12to23	1	39.6967	<.0001
a24up	1	67.2130	<.0001
mage	1	6.3262	0.0119
mage2	1	5.9703	0.0145
borde	1	3.4061	0.0650
pdead	1	0.4654	0.4951
p0014	1	6.3495	0.0117
p1523	1	0.4666	0.4945
p2435	1	1.9825	0.1591
p36up	1	3.5536	0.0594
i011a1223	1	1.2943	0.2553
i011a24p	1	4.8881	0.0270
i1223a24p	1	0.0312	0.8598

Analysis of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept	0	0.0000	0.0000	0.0000	0.0000	.	.
a0	1	1.1234	0.7498	-0.3462	2.5930	2.24	0.1341
a1to5	1	3.9313	0.7582	2.4453	5.4172	26.89	<.0001
a6to11	1	4.2412	0.7552	2.7611	5.7213	31.54	<.0001
a12to23	1	4.7581	0.7552	3.2780	6.2383	39.70	<.0001
a24up	1	6.3584	0.7756	4.8383	7.8785	67.21	<.0001
mage	1	0.1463	0.0581	0.0323	0.2602	6.33	0.0119
mage2	1	-0.0025	0.0010	-0.0045	-0.0005	5.97	0.0145
borde	1	-0.0617	0.0334	-0.1272	0.0038	3.41	0.0650
pdead	1	-0.1020	0.1495	-0.3950	0.1910	0.47	0.4951
p0014	1	-0.5354	0.2125	-0.9518	-0.1189	6.35	0.0117
p1523	1	0.1273	0.1864	-0.2379	0.4925	0.47	0.4945
p2435	1	0.2598	0.1845	-0.1018	0.6215	1.98	0.1591

LIFEREG: mod. Esponenziale a tratti senza frailty

The LIFEREG Procedure

Analysis of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	95% Confidence Limits		Chi-Square	Pr > ChiSq
p36up	1	0.3934	0.2087	-0.0156	0.8025	3.55	0.0594
i011a1223	1	-0.8150	0.7164	-2.2192	0.5891	1.29	0.2553
i011a24p	1	-1.6283	0.7365	-3.0719	-0.1848	4.89	0.0270
i1223a24p	1	-0.0666	0.3769	-0.8053	0.6722	0.03	0.8598
Scale	0	1.0000	0.0000	1.0000	1.0000		
Weibull Shape	0	1.0000	0.0000	1.0000	1.0000		

Lagrange Multiplier Statistics		
Parameter	Chi-Square	Pr > ChiSq
Intercept	.	.
Scale	443.4169	<.0001

The PHREG Procedure

Model Information		
Data Set	WORK.GUATEMALA	
Dependent Variable	time	time
Censoring Variable	death	death
Censoring Value(s)	0	
Ties Handling	BRESLOW	
Frailty	GAMMA	

Number of Observations Read	13594
Number of Observations Used	13594

Summary of the Number of Event and Censored Values			
Total	**Event**	**Censored**	**Percent Censored**
13594	403	13191	97.04

Convergence Status
Convergence criterion (PCONV=0.0001) satisfied.

Marginal Loglikelihood	-3979.8

Testing Global Null Hypothesis			
Test	**Chi-Square**	**Adjusted DF**	**Pr > ChiSq**
Likelihood Ratio	333.9558	145.17	<.0001
Wald	227.3227	145.17	<.0001

Covariance Parameter Estimates	
Cov Parm	**Estimate**
momid	0.4171

The PHREG Procedure

Type 3 Tests					
Effect	Wald Chi-Square	DF	Pr > ChiSq	Adjusted DF	Adjusted Pr > ChiSq
mage	7.6590	1	0.0056	0.9014	0.0047
mage2	7.2594	1	0.0071	0.9016	0.0059
borde	1.6492	1	0.1991	0.8193	0.1575
pdead	2.3015	1	0.1293	0.9528	0.1215
p0014	7.7050	1	0.0055	0.9419	0.0050
p1523	0.0952	1	0.7577	0.9571	0.7410
p2435	1.3204	1	0.2505	0.9555	0.2382
p36up	2.8352	1	0.0922	0.9563	0.0868
i011a1223	0.3014	1	0.5830	0.9824	0.5756
i011a24p	0.0357	1	0.8501	0.9808	0.8441
i1223a24p	20.3921	1	<.0001	0.9947	<.0001
momid	156.0037	.	.	134.17	0.0956

Analysis of Maximum Likelihood Estimates							
Parameter	DF	Parameter Estimate	Standard Error	Chi-Square	Pr > ChiSq	Hazard Ratio	Label
mage	1	-0.17091	0.06176	7.6590	0.0056	0.843	mage
mage2	1	0.00295	0.00110	7.2594	0.0071	1.003	mage2
borde	1	0.04775	0.03718	1.6492	0.1991	1.049	borde
pdead	1	-0.23390	0.15418	2.3015	0.1293	0.791	pdead
p0014	1	0.61521	0.22163	7.7050	0.0055	1.850	p0014
p1523	1	-0.05908	0.19149	0.0952	0.7577	0.943	p1523
p2435	1	-0.21814	0.18984	1.3204	0.2505	0.804	p2435
p36up	1	-0.36224	0.21513	2.8352	0.0922	0.696	p36up
i011a1223	1	0.39412	0.71787	0.3014	0.5830	1.483	i011a1223
i011a24p	1	0.13599	0.71965	0.0357	0.8501	1.146	i011a24p
i1223a24p	1	-1.46627	0.32470	20.3921	<.0001	0.231	i1223a24p

PHREG: mod. Cox con frailty Gamma (Newton–Raphson)

The PHREG Procedure

Model Information		
Data Set	WORK.GUATEMALA	
Dependent Variable	time	time
Censoring Variable	death	death
Censoring Value(s)	0	
Ties Handling	BRESLOW	
Frailty	GAMMA	

Number of Observations Read	13594
Number of Observations Used	13594

Summary of the Number of Event and Censored Values			
Total	**Event**	**Censored**	**Percent Censored**
13594	403	13191	97.04

Convergence Status
Convergence criterion (PCONV=0.0001) satisfied.

Marginal Loglikelihood	-3979.8

Testing Global Null Hypothesis			
Test	**Chi-Square**	**Adjusted DF**	**Pr > ChiSq**
Likelihood Ratio	334.0900	145.18	<.0001
Wald	227.5043	145.18	<.0001

Covariance Parameter Estimates	
Cov Parm	**Estimate**
momid	0.4171

PHREG: mod. Cox con frailty Gamma (Newton–Raphson)

The PHREG Procedure

Type 3 Tests					
Effect	Wald Chi-Square	DF	Pr > ChiSq	Adjusted DF	Adjusted Pr > ChiSq
mage	7.6597	1	0.0056	0.9014	0.0047
mage2	7.2601	1	0.0071	0.9016	0.0059
borde	1.6485	1	0.1992	0.8193	0.1576
pdead	2.3049	1	0.1290	0.9528	0.1212
p0014	7.7059	1	0.0055	0.9419	0.0050
p1523	0.0952	1	0.7577	0.9571	0.7411
p2435	1.3198	1	0.2506	0.9555	0.2383
p36up	2.8344	1	0.0923	0.9563	0.0868
i011a1223	0.3014	1	0.5830	0.9824	0.5757
i011a24p	0.0357	1	0.8501	0.9808	0.8442
i1223a24p	20.3923	1	<.0001	0.9947	<.0001
momid	156.1871	.	.	134.18	0.0940

Analysis of Maximum Likelihood Estimates							
Parameter	DF	Parameter Estimate	Standard Error	Chi-Square	Pr > ChiSq	Hazard Ratio	Label
mage	1	-0.17092	0.06176	7.6597	0.0056	0.843	mage
mage2	1	0.00295	0.00110	7.2601	0.0071	1.003	mage2
borde	1	0.04774	0.03718	1.6485	0.1992	1.049	borde
pdead	1	-0.23407	0.15418	2.3049	0.1290	0.791	pdead
p0014	1	0.61525	0.22164	7.7059	0.0055	1.850	p0014
p1523	1	-0.05907	0.19149	0.0952	0.7577	0.943	p1523
p2435	1	-0.21809	0.18984	1.3198	0.2506	0.804	p2435
p36up	1	-0.36219	0.21513	2.8344	0.0923	0.696	p36up
i011a1223	1	0.39410	0.71787	0.3014	0.5830	1.483	i011a1223
i011a24p	1	0.13598	0.71965	0.0357	0.8501	1.146	i011a24p
i1223a24p	1	-1.46627	0.32470	20.3923	<.0001	0.231	i1223a24p

NLMIXED: mod. Esponenziale a tratti con frailty log-normale

The NLMIXED Procedure

Specifications	
Data Set	WORK.GUATEMALA
Dependent Variable	time
Distribution for Dependent Variable	General
Random Effects	e
Distribution for Random Effects	Normal
Subject Variable	momid
Optimization Technique	Dual Quasi-Newton
Integration Method	Adaptive Gaussian Quadrature

Dimensions	
Observations Used	13594
Observations Not Used	0
Total Observations	13594
Subjects	851
Max Obs per Subject	40
Parameters	17
Quadrature Points	3

Initial Parameters														
b0	**b15**	**b611**	**b1223**	**b24up**	**bmage**	**bmage2**	**bborde**	**bpdead**	**bp0014**	**bp1523**	**bp2435**	**bp36up**	**bi0111223**	**bi01124p**
-1.12	-3.93	-4.24	-4.76	-6.35	-0.14	0.0025	0.062	0.1	0.54	-0.13	-0.26	-0.39	0.82	1.63

Initial Parameters		
bi122324p	**s2**	**Negative Log Likelihood**
0.07	0.21	2451.30152

Iteration History					
Iteration	**Calls**	**Negative Log Likelihood**	**Difference**	**Maximum Gradient**	**Slope**
1	10	2439.8066	11.4949	13796.2	-6.796E7
2	12	2439.0814	0.725191	1868.43	-1.05102
3	16	2438.6083	0.473132	11342.2	-0.55617
4	20	2438.2239	0.38438	1468.33	-0.32945
5	22	2438.1881	0.035777	213.786	-0.06196
6	25	2438.1827	0.005439	361.949	-0.00436
7	31	2437.7818	0.400951	934.302	-0.00653

NLMIXED: mod. Esponenziale a tratti con frailty log-normale

The NLMIXED Procedure

Iteration History

Iteration	Calls	Negative Log Likelihood	Difference	Maximum Gradient	Slope
8	34	2437.7726	0.00912	237.717	-0.01403
9	40	2437.4452	0.32744	4778.18	-0.00411
10	43	2437.3913	0.053913	97.6910	-0.09611
11	46	2437.3912	0.000115	97.2792	-0.00011
12	54	2437.3493	0.041861	2207.80	-0.00012
13	56	2437.3213	0.02805	978.349	-0.03849
14	59	2437.3137	0.007586	13.2222	-0.01494
15	61	2437.3135	0.00012	127.767	-0.00002

NOTE: GCONV convergence criterion satisfied.

Fit Statistics	
-2 Log Likelihood	4874.6
AIC (smaller is better)	4908.6
AICC (smaller is better)	4908.7
BIC (smaller is better)	4989.3

Parameter Estimates

Parameter	Estimate	Standard Error	DF	t Value	Pr > |t|	95% Confidence Limits		Gradient
b0	-1.1245	0.7653	850	-1.47	0.1421	-2.6266	0.3777	0.81508
b15	-3.9338	0.7737	850	-5.08	<.0001	-5.4524	-2.4151	-0.09870
b611	-4.2421	0.7709	850	-5.50	<.0001	-5.7553	-2.7290	-0.21808
b1223	-4.7529	0.7711	850	-6.16	<.0001	-6.2665	-3.2394	-0.16940
b24up	-6.3489	0.7915	850	-8.02	<.0001	-7.9024	-4.7954	-0.12034
bmage	-0.1502	0.05949	850	-2.52	0.0118	-0.2670	-0.03345	4.40575
bmage2	0.002588	0.001053	850	2.46	0.0142	0.000520	0.004655	127.767
bborde	0.05988	0.03508	850	1.71	0.0882	-0.00898	0.1287	0.71826
bpdead	-0.02431	0.1756	850	-0.14	0.8899	-0.3689	0.3203	0.28867
bp0014	0.5342	0.2168	850	2.46	0.0140	0.1086	0.9598	-0.42879
bp1523	-0.1174	0.1885	850	-0.62	0.5335	-0.4875	0.2526	0.54417
bp2435	-0.2580	0.1874	850	-1.38	0.1690	-0.6259	0.1099	-0.73288
bp36up	-0.3911	0.2112	850	-1.85	0.0644	-0.8057	0.02345	0.12315
bi0111223	0.8194	0.7149	850	1.15	0.2521	-0.5838	2.2226	0.029583

NLMIXED: mod. Esponenziale a tratti con frailty log-normale

The NLMIXED Procedure

Parameter Estimates								
Parameter	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**95% Confidence Limits**		**Gradient**
bi01124p	1.6307	0.7422	850	2.20	0.0283	0.1740	3.0874	-0.01091
bi122324p	0.06930	0.3778	850	0.18	0.8545	-0.6723	0.8109	-0.00759
s2	0.1520	0.1068	850	1.42	0.1551	-0.05763	0.3616	-0.26382