

## Softdrink Data - Gamma Regression with Log Link

### The GLIMMIX Procedure

Model Information	
Data Set	MYDATA.SOFTDRINKS
Response Variable	Time
Response Distribution	Gamma
Link Function	Log
Variance Function	Default
Variance Matrix	Diagonal
Estimation Technique	Maximum Likelihood
Degrees of Freedom Method	Residual

Number of Observations Read	24
Number of Observations Used	24

Dimensions	
Covariance Parameters	1
Columns in X	5
Columns in Z	0
Subjects (Blocks in V)	1
Max Obs per Subject	24

Optimization Information	
Optimization Technique	Newton-Raphson
Parameters in Optimization	6
Lower Boundaries	1
Upper Boundaries	0
Fixed Effects	Not Profiled

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	76.191644076	.	46.85408
1	0	28	53.201579984	22.99006409	27.89342
2	0	5	53.193252563	0.00832742	0.250069
3	0	3	53.19306927	0.00018329	0.225099
4	0	3	53.191857507	0.00121176	0.123352
5	0	3	53.190624793	0.00123271	0.070832

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
6	0	3	53.189002848	0.00162195	0.036858
7	0	3	53.188157723	0.00084513	0.030807
8	0	3	53.188076031	0.00008169	0.00376
9	0	3	53.18807316	0.00000287	0.000187
10	0	3	53.188073129	0.00000003	0.00001

Convergence criterion (GCONV=1E-8) satisfied.

Fit Statistics	
-2 Log Likelihood	106.38
AIC (smaller is better)	118.38
AICC (smaller is better)	123.32
BIC (smaller is better)	125.44
CAIC (smaller is better)	131.44
HQIC (smaller is better)	120.25
Pearson Chi-Square	0.37
Pearson Chi-Square / DF	0.02

Parameter Estimates					
Effect	Estimate	Standard Error	DF	t Value	Pr >  t
Intercept	1.9994	0.1041	19	19.21	<.0001
Cases	0.1095	0.01818	19	6.02	<.0001
Cases*Cases	-0.00202	0.000659	19	-3.06	0.0064
Distance	0.000725	0.000531	19	1.37	0.1880
Distance*Distance	-2.26E-7	0	19	-Infy	<.0001
Scale	0.01498	0.004315	.	.	.

Type III Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
Cases	1	19	36.28	<.0001
Cases*Cases	1	19	9.36	0.0064
Distance	1	19	1.87	0.1880
Distance*Distance	1	19	0.12	0.7354