Density Analysis without zeros (neg bin)
negative binomial
AR(1)
9.4 TS1M2
X64_S08R2 platform

The GLIMMIX Procedure

Model Information	
Data Set	WORK.WORMS2
Response Variable	density
Response Distribution	Negative Binomial
Link Function	Log
Variance Function	Default
Variance Matrix Blocked By	site(AEZ)
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Laplace
Degrees of Freedom Method	Containment

Class Level Information		
Class	**Levels**	**Values**
site	22	ASTN.1 COLF.1 COLF.2 COLF.3 COLF.5 FAIR.1 FERD.1 FERD.2 GENE.1 JULI.1 KEND.1 LAPW.1 MALD.1 MAUP.1 MILT.1 MOSC.1 PEND.2 PEND.3N PULL.1 STJN.1 TROY.1 UNTN.1
AEZ	3	1 2 3
year	3	2011 2012 2013

Number of Observations Read	53
Number of Observations Used	53

Dimensions	
G-side Cov. Parameters	3
R-side Cov. Parameters	1
Columns in X	16
Columns in Z per Subject	4
Subjects (Blocks in V)	22
Max Obs per Subject	3

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Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	13
Lower Boundaries	4
Upper Boundaries	1
Fixed Effects	Not Profiled
Starting From	GLM estimates

Iteration History

Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	**0**	4	597.01510543	.	18.71566
1	**0**	2	590.69526819	6.31983724	28.39055
2	**0**	3	589.56317365	1.13209454	8.483793
3	**0**	4	588.96542555	0.59774811	14.89999
4	**0**	3	588.48085553	0.48457001	11.97546
5	**1**	6	587.98743043	0.49342511	8.951578
6	**1**	3	587.89452774	0.09290268	4.19792
7	**1**	2	587.84750668	0.04702106	4.594266
8	**1**	4	587.72947482	0.11803186	0.939874
9	**1**	3	587.71789691	0.01157791	0.493051
10	**1**	2	587.70512888	0.01276803	0.967545
11	**1**	2	587.70093246	0.00419642	1.431985
12	**1**	4	587.69104726	0.00988520	0.474913
13	**1**	3	587.68535376	0.00569349	0.288679
14	**1**	3	587.6836452	0.00170856	0.349132
15	**1**	2	587.68106075	0.00258445	0.131487
16	**1**	3	587.68063459	0.00042617	0.118987
17	**1**	2	587.68018689	0.00044769	0.156775
18	**1**	2	587.67965034	0.00053655	0.11301
19	**1**	4	587.67346393	0.00618642	0.226403
20	**1**	3	587.67263013	0.00083380	0.172844

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Iteration History					
Iteration	**Restarts**	**Evaluations**	**Objective Function**	**Change**	**Max Gradient**
21	**1**	4	587.67015251	0.00247762	0.148169
22	**1**	3	587.66994481	0.00020770	0.031394
23	**1**	3	587.66992026	0.00002455	0.028753
24	**1**	4	587.66972833	0.00019192	0.040335
25	**1**	3	587.66966303	0.00006531	0.014022
26	**1**	3	587.66964582	0.00001720	0.017649
27	**1**	4	587.66958977	0.00005606	0.074441
28	**1**	2	587.66954583	0.00004394	0.054494
29	**1**	3	587.66953131	0.00001452	0.002057
30	**1**	3	587.66952991	0.00000139	0.001022

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

Estimated G matrix is not positive definite.

Fit Statistics	
-2 Log Likelihood	587.67
AIC (smaller is better)	611.67
AICC (smaller is better)	619.47
BIC (smaller is better)	624.76
CAIC (smaller is better)	636.76
HQIC (smaller is better)	614.75

Fit Statistics for Conditional Distribution	
-2 log L(density | r. effects)	571.51
Pearson Chi-Square	35.99
Pearson Chi-Square / DF	0.68

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Covariance Parameter Estimates			
Cov Parm	**Subject**	**Estimate**	**Standard Error**
Intercept	site(AEZ)	0.1249	.
Variance	site(AEZ)	0	.
AR(1)	site(AEZ)	0.05384	.
Scale		0.5465	.

Type III Tests of Fixed Effects				
Effect	**Num DF**	**Den DF**	**F Value**	**Pr > F**
AEZ	1	19	11.57	0.0030
year	2	25	Infty	<.0001
AEZ*year	4	25	Infty	<.0001

AEZ Least Squares Means												
AEZ	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Alpha**	**Lower**	**Upper**	**Mean**	**Standard Error Mean**	**Lower Mean**	**Upper Mean**
1	4.4586	0.05734	19	77.76	<.0001	0.05	4.3386	4.5786	86.3650	4.9520	76.5981	97.3773
2	4.7340	0.07337	19	64.53	<.0001	0.05	4.5804	4.8875	113.75	8.3452	97.5554	132.63
3	5.0216	0.05734	19	87.58	<.0001	0.05	4.9016	5.1417	151.66	8.6960	134.51	171.00

Differences of AEZ Least Squares Means									
AEZ	**_AEZ**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Alpha**	**Lower**	**Upper**
1	2	-0.2754	0.08459	19	-3.26	0.0042	0.05	-0.4524	-0.09835
1	3	-0.5631	0	19	-Infty	<.0001	.	.	.
2	3	-0.2877	0.08459	19	-3.40	0.0030	0.05	-0.4647	-0.1106