The GLIMMIX Procedure

Model Information	
Data Set	WORK.ATS5K
Response Variable	Trt_Step
Response Distribution	Multinomial (ordered)
Link Function	Cumulative Logit
Variance Function	Default
Variance Matrix Blocked By	pat_id
Estimation Technique	Maximum Likelihood
Likelihood Approximation	Laplace
Degrees of Freedom Method	Containment

Class Level Information		
Class	**Levels**	**Values**
pat_id	5000	not printed
region	4	1 2 3 4
Trt_Step	6	5 4 3 2 1 0
gender	2	2 1
Insurance	6	2 3 4 5 6 1

Number of Observations Read	127071
Number of Observations Used	127071

Response Profile		
Ordered Value	**Trt_Step**	**Total Frequency**
1	5	2007
2	4	14746
3	3	14382
4	2	16983
5	1	21567
6	0	57386

The GLIMMIX procedure is modeling the probabilities of levels of Trt_Step having lower Ordered Values in the Response Profile table.

The GLIMMIX Procedure

Dimensions	
G-side Cov. Parameters	2
Columns in X	25
Columns in Z per Subject	2
Subjects (Blocks in V)	5000
Max Obs per Subject	218

Optimization Information	
Optimization Technique	Dual Quasi-Newton
Parameters in Optimization	24
Lower Boundaries	2
Upper Boundaries	0
Fixed Effects	Not Profiled
Starting From	GLM estimates

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
0	0	4	369727.82762	.	27463999
1	0	20	369650.23517	77.59244562	1269214
2	0	3	369531.90241	118.33276105	952914.5
3	0	4	368944.10694	587.79546886	4742728
4	0	2	368938.31124	5.79570191	177018.9
5	0	4	368926.54894	11.76229713	8425602
6	0	4	368832.92388	93.62506896	3593685
7	0	3	368815.67325	17.25062600	3858958
8	0	3	368809.86226	5.81098492	1639345
9	0	4	368776.64285	33.21941786	967411.3
10	0	3	368766.46638	10.17647134	1093555
11	0	3	368761.87798	4.58840009	1154419
12	0	4	368735.51094	26.36703151	6193821
13	0	2	368689.60041	45.91052998	1993494
14	0	2	368609.53827	80.06214343	12169852
15	0	2	368474.21266	135.32561281	15493797
16	0	3	368382.32337	91.88928765	3047879
17	0	3	368376.9189	5.40446605	368707.7
18	0	3	368375.49548	1.42342215	56936.47
19	0	3	368375.12272	0.37276638	238308.7

The GLIMMIX Procedure

Iteration History					
Iteration	Restarts	Evaluations	Objective Function	Change	Max Gradient
20	**0**	4	368368.66085	6.46186168	1198528
21	**0**	2	368358.27116	10.38969221	200638.4
22	**0**	4	368330.43835	27.83281178	2050466
23	**0**	2	368295.29415	35.14420311	917311.3
24	**0**	3	368291.87525	3.41889758	115156.6
25	**0**	3	368291.56566	0.30958581	57880.58
26	**0**	2	368291.17988	0.38578593	307823.3
27	**0**	6	368278.89074	12.28913823	1137693
28	**0**	3	368272.70706	6.18368094	64378.17
29	**0**	3	368270.54988	2.15717882	460457.9
30	**0**	3	368270.05868	0.49120186	5863.071
31	**0**	2	368270.00698	0.05169391	60806.76
32	**0**	4	368269.73194	0.27504285	46274.01
33	**0**	8	368209.36182	60.37011939	3804796
34	**0**	3	368202.15136	7.21046506	26366.22
35	**0**	3	368202.07224	0.07911162	41608.5
36	**0**	4	368201.22566	0.84658907	387083.2
37	**0**	2	368199.98593	1.23972886	43344.37
38	**0**	2	368198.08396	1.90196335	669240.2
39	**0**	2	368194.92194	3.16202421	385278.2
40	**0**	3	368193.43504	1.48689824	151122.2
41	**0**	2	368190.8609	2.57413804	72778.56
42	**0**	4	368174.77244	16.08846525	13213.17
43	**0**	2	368160.6776	14.09484081	162067.5
44	**0**	3	368159.56421	1.11338983	62536.92
45	**0**	3	368159.53538	0.02882947	1665.365
46	**0**	2	368159.52157	0.01381007	5266.117

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

Fit Statistics	
-2 Log Likelihood	368159.5
AIC (smaller is better)	368207.5
AICC (smaller is better)	368207.5
BIC (smaller is better)	368363.9

The GLIMMIX Procedure

Fit Statistics	
CAIC (smaller is better)	368387.9
HQIC (smaller is better)	368262.3

Fit Statistics for Conditional Distribution	
-2 log L(Trt_Step | r. effects)	358054.0

Covariance Parameter Estimates			
Cov Parm	Subject	Estimate	Standard Error
Intercept	pat_id	0.3364	0.01319
year	pat_id	0.02498	0.002144

Solutions for Fixed Effects												
Effect	Trt_Step	region	gender	Insurance	Estimate	Standard Error	DF	t Value	Pr > |t|	Alpha	Lower	Upper
Intercept	5				-5.0425	0.04084	4988	-123.48	<.0001	0.05	-5.1226	-4.9624
Intercept	4				-2.7135	0.03489	4988	-77.77	<.0001	0.05	-2.7819	-2.6451
Intercept	3				-1.8896	0.03439	4988	-54.95	<.0001	0.05	-1.9570	-1.8222
Intercept	2				-1.1840	0.03414	4988	-34.68	<.0001	0.05	-1.2509	-1.1170
Intercept	1				-0.4209	0.03403	4988	-12.37	<.0001	0.05	-0.4877	-0.3542
year					2.2785	0.06234	5000	36.55	<.0001	0.05	2.1563	2.4007
year*year					-2.8209	0.06730	117E3	-41.91	<.0001	0.05	-2.9528	-2.6889
year*year*year					1.4492	0.02791	117E3	51.92	<.0001	0.05	1.3945	1.5039
year*year*year*year					-0.3642	0.004869	117E3	-74.80	<.0001	0.05	-0.3738	-0.3547
yea*yea*yea*yea*year					0.04381	0.000298	117E3	146.77	<.0001	0.05	0.04322	0.04439
ye*ye*ye*yea*yea*yea					-0.00202	0	117E3	-Infty	<.0001	.	.	.
age					0.001777	0.000674	117E3	2.64	0.0084	0.05	0.000456	0.003097
gender			2		-0.1120	0.02416	117E3	-4.64	<.0001	0.05	-0.1593	-0.06465
gender			1		0	.	.	.	.	.	.	.
region		1			-0.00330	0.03173	117E3	-0.10	0.9171	0.05	-0.06550	0.05889
region		2			0.04494	0.03015	117E3	1.49	0.1360	0.05	-0.01414	0.1040
region		3			0.04778	0.04135	117E3	1.16	0.2479	0.05	-0.03327	0.1288
region		4			0	.	.	.	.	.	.	.
CCI					0.05195	0.01869	117E3	2.78	0.0054	0.05	0.01531	0.08858
Insurance				2	0.05794	0.1295	117E3	0.45	0.6545	0.05	-0.1958	0.3117
Insurance				3	-0.1135	0.05802	117E3	-1.96	0.0504	0.05	-0.2272	0.000198
Insurance				4	-0.2690	0.1623	117E3	-1.66	0.0974	0.05	-0.5870	0.04905

The GLIMMIX Procedure

Solutions for Fixed Effects												
Effect	**Trt_Step**	**region**	**gender**	**Insurance**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Alpha**	**Lower**	**Upper**
Insurance				5	-0.05288	0.03681	117E3	-1.44	0.1508	0.05	-0.1250	0.01925
Insurance				6	-0.08152	0.1738	117E3	-0.47	0.6391	0.05	-0.4223	0.2592
Insurance				1	0	.	.	.	.	.	.	.

The GLIMMIX Procedure

Odds Ratio Estimates

region	gender	Insurance	year	age	CCI	_region	_gender	_Insurance	_year	_age	_CCI	Estimate	DF
			2.8235	31.308	0.3256				1.8235	31.308	0.3256	0.916	5000
			1.8235	32.308	0.3256				1.8235	31.308	0.3256	1.002	117E3
			1.8235	31.308	1.3256				1.8235	31.308	0.3256	1.053	117E3
	2		1.8235	31.308	0.3256		1		1.8235	31.308	0.3256	0.894	117E3
1			1.8235	31.308	0.3256	4			1.8235	31.308	0.3256	0.997	117E3
2			1.8235	31.308	0.3256	4			1.8235	31.308	0.3256	1.046	117E3
3			1.8235	31.308	0.3256	4			1.8235	31.308	0.3256	1.049	117E3
		2	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	1.060	117E3
		3	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.893	117E3
		4	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.764	117E3
		5	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.948	117E3
		6	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.922	117E3

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

Odds Ratio Estimates

region	gender	Insurance	year	age	CCI	_region	_gender	_Insurance	_year	_age	_CCI	95% Confidence Limits	
			2.8235	31.308	0.3256				1.8235	31.308	0.3256	0.896	0.936
			1.8235	32.308	0.3256				1.8235	31.308	0.3256	1.000	1.003
			1.8235	31.308	1.3256				1.8235	31.308	0.3256	1.015	1.093
	2		1.8235	31.308	0.3256		1		1.8235	31.308	0.3256	0.853	0.937
1			1.8235	31.308	0.3256	4			1.8235	31.308	0.3256	0.937	1.061
2			1.8235	31.308	0.3256	4			1.8235	31.308	0.3256	0.986	1.110
3			1.8235	31.308	0.3256	4			1.8235	31.308	0.3256	0.967	1.138
		2	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.822	1.366
		3	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.797	1.000
		4	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.556	1.050
		5	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.882	1.019
		6	1.8235	31.308	0.3256			1	1.8235	31.308	0.3256	0.656	1.296

Effects of continuous variables are assessed as one unit offsets from the mean.
The AT suboption modifies the reference value and the UNIT suboption modifies the offsets.

The GLIMMIX Procedure

Type III Tests of Fixed Effects				
Effect	**Num DF**	**Den DF**	**F Value**	**Pr > F**
year	1	5000	1336.14	<.0001
year*year	1	117E3	1756.85	<.0001
year*year*year	1	117E3	2695.29	<.0001
year*year*year*year	1	117E3	5594.35	<.0001
yea*yea*yea*yea*year	1	117E3	21540.1	<.0001
ye*ye*ye*yea*yea*yea	1	117E3	Infty	<.0001
age	1	117E3	6.96	0.0084
gender	1	117E3	21.49	<.0001
region	3	117E3	1.30	0.2720
CCI	1	117E3	7.72	0.0054
Insurance	5	117E3	1.72	0.1263