SUDAAN Analysis Examples Replication C9

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* Sudaan Analysis Examples Replication for ASDA 2nd Edition
* Berglund April 2017
* Chapter 9 ;

libname ncsr "P:\ASDA 2\Data sets\ncsr\" ;
data c9_ncsr ;
 set ncsr.ncsr_sub_5apr2017 ;
 wkstat3c_r = 4-wkstat3c ;
run ;
proc format ;
 value af 1='18-29' 2='30-44' 3='45-59' 4='60+' ;
 value sf 1='M' 2='F' ;
 value edf 1='0-11' 2='12' 3='13-15' 4='16+' ;
 value mf 1='Currently Married' 2='Previously Married' 3='Never Married' ;
 value yn 1='Yes' 0='No' ;
 value wkf 1='NLF' 2='Unemployed' 3='Employed' ;
run ;
proc sort ;
 by sestrat seclustr ;
run ;

title "Analysis Example 9.2: Multinomial Logistic Regression : NCSR" ;
proc multilog data=c9_ncsr filetype=sas deft1 ;
nest sestrat seclustr ; weight ncsrwtlg ;
class sex wkstat3c r ed4cat ag4cat mar3cat / nofreq ;
reflevel ag4cat=1 mar3cat=1 ed4cat=1 sex=2 ;
rformat ag4cat af. ; rformat sex sf. ; rformat ed4cat edf. ; rformat mar3cat mf. ; rformat mde yn. ; rformat
wkstat3c_r wkf. ; rformat ald yn. ;
model wkstat3c_r = sex ald mde ed4cat ag4cat mar3cat / genlogit ;
test adjwaldf ;
setenv decwidth=3 ;
print / style=nchs ;
run ;

* NOTE checking with Sudaan tech support on Margins Plots, No GOF test in Sudaan for Multinomial Logistic regression ;

libname d 'P:\asda 2\data sets\ess6 russia' ;
title " 9.3.6 Example: Fitting a Cumulative Logit Regression Model to Complex Sample Survey Data" ;
data c9_russia ;
 set d.ess6_russia_2aug2016 ;

if stflife =. then stflife2=. ;
else if stflife =0 or stflife =1 then stflife2=1 ;
else if stflife <=4 then stflife2=2 ;
else if stflife <=5 then stflife2=3 ;
else if stflife <=8 then stflife2=4 ;
else if stflife <=10 then stflife2=5 ;
* use reversed satisfaction with life for model in Sudaan ;
stflife2_r=6-stflife2 ;
* create a numeric stratify for use in Sudaan ;
if stratify eq 'Central FO' then nstrat=1 ;
if stratify eq 'Far East FO' then nstrat=2 ;
if stratify eq 'North Caucasian FO' then nstrat=3 ;
if stratify eq 'North-Western FO' then nstrat=4 ;
if stratify eq 'Siberian FO' then nstrat=5 ;
if stratify eq 'South FO' then nstrat=6 ;
if stratify eq 'Ural FO' then nstrat=7 ;
if stratify eq 'Volga FO' then nstrat=8 ;
run ;
proc sort ;
 by nstrat psu ;
run ;

data _null ;
 file print ;
 put "Note : Graphics Not Available in Sudaan : No Figure 9.6, Bar Chart of Satisfaction with Life, Weighted by
PSPWGHT" ;
run ;
```

```
title "Numbers for  Table 9.5 and 9.6" ;
proc multilog data=c9_russia filetype=sas deft1 ;
nest nstrat psu ;
weight pspwght ;
class agecat marcat stflife2 r gndr / nofreq include=nonmissing ;
reflevel agecat=1 marcat=1 gndr=2 ;
model stflife2_r = agecat marcat male  / cumlogit ;
setenv decwidth=3 ;
test adjwaldf ;
print / style=nchs ;
run ;

data _null_ ;
 file print ;
 put "No Design-Adjusted GOF test for Ordinal Logistic Regression in Sudaan" ;
run ;

libname d2 'p:\asda 2\data sets\hrs 2012 ' ;
data c9_hrs ;
 set d2.hrs_sub_28sep2016 ;
 * center age for Poisson regression ;
 nage_c=nage-74.5 ;
 bmi_c=r11bmi-27.7 ;
 offset24=24 ;
run ;
proc sort ;
 by stratum secu ;
run ;

title " 9.4.7 Example: Fitting Poisson Model to Complex Sample Survey Data" ;
proc loglink data=c9_hrs filetype=sas ;
nest stratum secu ;
weight nwgtr ;
subpopn age65p=1 ;
class gender / nofreq ;
reflevel gender=2 ;
model numfalls24 = gender nage_c arthritis diabetes bmi_c / offset=offset24 ;
setenv decwidth=4 ;
print idr lowidr upidr / betas=all tests=all style=nchs ;
run ;
```

Output SUDAAN Analysis Examples Replication C9

Analysis Example 9.2: Multinomial Logistic Regression : NCSR

```
                              S U D A A N
           Software for the Statistical Analysis of Correlated Data
         Copyright       Research Triangle Institute       June 2013
                                Release 11.0.1


DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR)
Design
    Sample Weight: NCSRWTLG
    Stratification Variables(s): SESTRAT
    Primary Sampling Unit: SECLUSTR


Independence parameters have converged in 7 iterations.

Number of observations read       :   5692    Weighted count:     5692
Number of observations skipped    :   3590
(WEIGHT variable nonpositive)
Observations used in the analysis :   5679    Weighted count:     5667
Denominator degrees of freedom    :     42


Maximum number of estimable parameters for the model is 24

File C9_NCSR contains   84 Clusters
  84 clusters were used to fit the model
Maximum cluster size is 142 records
Minimum cluster size is  18 records


Sample and Population Counts for Response Variable WKSTAT3C_R
Based on observations used in the analysis
  NLF       :  Sample Count     1630    Population Count      1706
  Unemployed:  Sample Count      283    Population Count       290
  Employed  :  Sample Count     3766    Population Count      3671

-2 * Normalized Log-Likelihood with Intercepts Only :  9025.92
-2 * Normalized Log-Likelihood Full Model           :  7367.23
Approximate Chi-Square (-2 * Log-L Ratio)           :  1658.69
Degrees of Freedom                                  :       22

Note: The approximate Chi-Square is not adjusted for clustering.
      Refer to hypothesis test table for adjusted test.
```

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Generalized Logit
Response variable WKSTAT3C_R: WKSTAT3C_R
by: WKSTAT3C_R (log-odds), Independent Variables and Effects.

WKSTAT3C_R (log-odds)

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
NLF vs Employed							
Intercept	-0.379	1.803	0.173	-0.728	-0.031	-2.194	0.034
Sex 1=Male 2=Female							
M	-0.640	2.449	0.110	-0.862	-0.418	-5.818	0.000
F	0.000	.	0.000	0.000	0.000	.	.
Alcohol Dependence							
1=Yes 0=No	0.333	0.768	0.130	0.070	0.596	2.559	0.014
Major Depressive Episode 1=Yes							
0=No	0.099	0.999	0.088	-0.079	0.276	1.120	0.269
Education 1=0-11 2=12 3=13-15 4=16+ Yrs							
0-11	0.000	.	0.000	0.000	0.000	.	.
12	-0.651	2.078	0.141	-0.936	-0.367	-4.619	0.000
13-15	-0.917	2.005	0.146	-1.213	-0.621	-6.259	0.000
16+	-1.230	2.095	0.160	-1.552	-0.907	-7.704	0.000
Age 1=17-29 2=30-44 3=45-59 4=60+							
18-29	0.000	.	0.000	0.000	0.000	.	.
30-44	-0.316	1.488	0.129	-0.576	-0.057	-2.457	0.018
45-59	0.065	2.428	0.171	-0.280	0.410	0.380	0.706
60+	2.381	1.984	0.173	2.031	2.731	13.729	0.000
Marital Status 1=Married 2=Previously Married 3=Never Married							
Currently Married	0.000	.	0.000	0.000	0.000	.	.
Previously Married	-0.052	1.350	0.105	-0.264	0.160	-0.498	0.621
Never Married	0.553	1.831	0.132	0.286	0.820	4.176	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Generalized Logit
Response variable WKSTAT3C_R: WKSTAT3C_R
by: WKSTAT3C_R (log-odds), Independent Variables and Effects.

WKSTAT3C_R (log-odds)

Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
Unemployed vs Employed							
Intercept	-0.644	1.578	0.296	-1.241	-0.046	-2.174	0.035
Sex 1=Male 2=Female							
M	-1.393	1.780	0.198	-1.792	-0.994	-7.049	0.000
F	0.000	.	0.000	0.000	0.000	.	.
Alcohol Dependence							
1=Yes 0=No	-0.164	0.783	0.357	-0.884	0.557	-0.459	0.649
Major Depressive Episode 1=Yes							
0=No	-0.140	0.701	0.157	-0.457	0.178	-0.889	0.379
Education 1=0-11 2=12 3=13-15 4=16+ Yrs							
0-11	0.000	.	0.000	0.000	0.000	.	.
12	-0.847	1.939	0.235	-1.322	-0.372	-3.598	0.001
13-15	-1.365	1.691	0.258	-1.885	-0.846	-5.302	0.000
16+	-1.731	1.943	0.310	-2.358	-1.104	-5.575	0.000
Age 1=17-29 2=30-44 3=45-59 4=60+							
18-29	0.000	.	0.000	0.000	0.000	.	.
30-44	-0.852	1.612	0.295	-1.447	-0.258	-2.894	0.006
45-59	-0.838	1.160	0.258	-1.359	-0.317	-3.246	0.002
60+	1.828	1.866	0.295	1.234	2.423	6.204	0.000
Marital Status 1=Married 2=Previously Married 3=Never Married							
Currently Married	0.000	.	0.000	0.000	0.000	.	.
Previously Married	-0.590	2.008	0.225	-1.044	-0.135	-2.619	0.012
Never Married	-2.785	0.667	0.380	-3.552	-2.017	-7.323	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Generalized Logit
Response variable WKSTAT3C_R: WKSTAT3C_R
by: Contrast.

Contrast	Degrees of Freedom	Adj Wald F	P-value Adj Wald F
OVERALL MODEL	24.000	82.357	0.000
MODEL MINUS INTERCEPT	22.000	73.913	0.000
INTERCEPT	.	.	.
SEX	2.000	35.755	0.000
ALD	2.000	5.048	0.011
MDE	2.000	1.139	0.330
ED4CAT	6.000	13.681	0.000
AG4CAT	6.000	83.591	0.000
MAR3CAT	4.000	24.813	0.000

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Generalized Logit
Response variable WKSTAT3C_R: WKSTAT3C_R
by: WKSTAT3C_R (log-odds), Independent Variables and Effects.

WKSTAT3C_R (log-odds) Independent Variables and Effects	Odds Ratio	Lower 95% Limit OR	Upper 95% Limit OR
NLF vs Employed			
Intercept	0.684	0.483	0.970
Sex 1=Male 2=Female			
M	0.527	0.422	0.658
F	1.000	1.000	1.000
Alcohol Dependence 1=Yes 0=No	1.395	1.073	1.815
Major Depressive Episode 1=Yes 0=No	1.104	0.924	1.318
Education 1=0-11 2=12 3=13-15 4=16+ Yrs			
0-11	1.000	1.000	1.000
12	0.521	0.392	0.693
13-15	0.400	0.297	0.537
16+	0.292	0.212	0.404
Age 1=17-29 2=30-44 3=45-59 4=60+			
18-29	1.000	1.000	1.000
30-44	0.729	0.562	0.945
45-59	1.067	0.756	1.507
60+	10.811	7.619	15.341
Marital Status 1=Married 2=Previously Married 3=Never Married			
Currently Married	1.000	1.000	1.000
Previously Married	0.949	0.768	1.173
Never Married	1.738	1.331	2.270

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Generalized Logit
Response variable WKSTAT3C_R: WKSTAT3C_R
by: WKSTAT3C_R (log-odds), Independent Variables and Effects.

WKSTAT3C_R (log-odds) Independent Variables and Effects	Odds Ratio	Lower 95% Limit OR	Upper 95% Limit OR
Unemployed vs Employed			
Intercept	0.525	0.289	0.955
Sex 1=Male 2=Female			
M	0.248	0.167	0.370
F	1.000	1.000	1.000
Alcohol Dependence			
1=Yes 0=No	0.849	0.413	1.745
Major Depressive Episode 1=Yes			
0=No	0.870	0.633	1.194
Education 1=0-11 2=12 3=13-15 4=16+ Yrs			
0-11	1.000	1.000	1.000
12	0.429	0.267	0.689
13-15	0.255	0.152	0.429
16+	0.177	0.095	0.331
Age 1=17-29 2=30-44 3=45-59 4=60+			
18-29	1.000	1.000	1.000
30-44	0.426	0.235	0.773
45-59	0.433	0.257	0.728
60+	6.224	3.434	11.281
Marital Status 1=Married 2=Previously Married 3=Never Married			
Currently Married	1.000	1.000	1.000
Previously Married	0.554	0.352	0.873
Never Married	0.062	0.029	0.133

* NOTE checking with Sudaan tech support on Margins Plots, No GOF test in Sudaan for Multinomial Logistic regression ;

Note : Graphics Not Available in Sudaan : No Figure 9.6, Bar Chart of Satisfaction with Life, Weighted by PSPWGHT

Numbers for Table 9.5 and 9.6

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR)
Design
    Sample Weight: PSPWGHT
    Stratification Variables(s): NSTRAT
    Primary Sampling Unit: PSU


Independence parameters have converged in 4 iterations.

Number of observations read       :   2484    Weighted count:     2484
Observations used in the analysis :   2415    Weighted count:     2422
Denominator degrees of freedom    :    176


Maximum number of estimable parameters for the model is 10

File C9_RUSSIA contains  184 Clusters
 184 clusters were used to fit the model
Maximum cluster size is  23 records
Minimum cluster size is   3 records


Sample and Population Counts for Response Variable STFLIFE2_R
Based on observations used in the analysis
  1:  Sample Count      283    Population Count       295
  2:  Sample Count     1036    Population Count      1035
  3:  Sample Count      492    Population Count       503
  4:  Sample Count      497    Population Count       478
  5:  Sample Count      107    Population Count       111

-2 * Normalized Log-Likelihood with Intercepts Only :  6798.97
-2 * Normalized Log-Likelihood Full Model          :  6726.38
Approximate Chi-Square (-2 * Log-L Ratio)          :    72.59
Degrees of Freedom                                 :        6

Note: The approximate Chi-Square is not adjusted for clustering.
      Refer to hypothesis test table for adjusted test.
```

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Cumulative Logit
Response variable STFLIFE2_R: STFLIFE2_R
by: STFLIFE2_R (cum-logit), Independent Variables and Effects.

STFLIFE2_R (cum-logit), Independent Variables and Effects	Beta Coeff.	DEFF Beta #1	SE Beta	Lower 95% Limit Beta	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
STFLIFE2_R (cum-logit)							
Intercept 1	-1.384	1.527	0.154	-1.687	-1.081	-9.009	0.000
Intercept 2	0.835	1.675	0.159	0.521	1.149	5.243	0.000
Intercept 3	1.793	1.740	0.167	1.464	2.122	10.747	0.000
Intercept 4	3.711	2.062	0.214	3.288	4.134	17.307	0.000
Age in Categories: 1=15-29 2=30-44 3=45-59 4=60+							
1	0.000	.	0.000	0.000	0.000	.	.
2	-0.529	1.285	0.136	-0.798	-0.261	-3.888	0.000
3	-0.746	1.235	0.143	-1.028	-0.463	-5.202	0.000
4	-0.808	1.396	0.166	-1.135	-0.481	-4.879	0.000
Marital Status: 1=Currently Married 2=Previously Married 3=Never Married							
1	0.000	.	0.000	0.000	0.000	.	.
2	-0.209	1.132	0.105	-0.417	-0.001	-1.981	0.049
3	-0.137	1.306	0.132	-0.398	0.123	-1.039	0.300
Male Indicator: 1=Male 0=Non-Male	-0.110	1.523	0.095	-0.298	0.078	-1.151	0.251

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Cumulative Logit
Response variable STFLIFE2_R: STFLIFE2_R
by: Contrast.

Contrast	Degrees of Freedom	Adj Wald F	P-value Adj Wald F
OVERALL MODEL	10.000	105.648	0.000
MODEL MINUS			
INTERCEPT	6.000	7.652	0.000
AGECAT	3.000	10.271	0.000
MARCAT	2.000	2.190	0.115
MALE	1.000	1.325	0.251

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Cumulative Logit
Response variable STFLIFE2_R: STFLIFE2_R
by: STFLIFE2_R (cum-logit), Independent Variables and Effects.

STFLIFE2_R (cum-logit), Independent Variables and Effects	Odds Ratio	Lower 95% Limit OR	Upper 95% Limit OR
STFLIFE2_R (cum-logit)			
Intercept 1	0.251	0.185	0.339
Intercept 2	2.304	1.683	3.155
Intercept 3	6.006	4.321	8.348
Intercept 4	40.901	26.788	62.448
Age in Categories: 1=15-29 2=30-44 3=45-59 4=60+			
1	1.000	1.000	1.000
2	0.589	0.450	0.771
3	0.474	0.358	0.630
4	0.446	0.321	0.618
Marital Status: 1=Currently Married 2=Previously Married 3=Never Married			
1	1.000	1.000	1.000
2	0.811	0.659	0.999
3	0.872	0.672	1.131
Male Indicator: 1=Male 0=Non-Male	0.896	0.743	1.081

No Design-Adjusted GOF test for Ordinal Logistic Regression in Sudaan

9.4.7 Example: Fitting Poisson Model to Complex Sample Survey Data

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DESIGN SUMMARY: Variances will be computed using the Taylor Linearization Method, Assuming a With Replacement (WR)
Design
    Sample Weight: NWGTR
    Stratification Variables(s): STRATUM
    Primary Sampling Unit: SECU


Independence parameters have converged in 7 iterations.

Number of observations read       :  18851    Weighted count: 90698760
Number of observations skipped    :   1703
(WEIGHT variable nonpositive)
Observations in subpopulation     :  10283    Weighted count: 42355584
Observations used in the analysis :  10026    Weighted count: 41293288
Denominator degrees of freedom    :     56


Maximum number of estimable parameters for the model is  6

File C9_HRS contains  112 Clusters
 108 clusters were used to fit the model
Maximum cluster size is 271 records
Minimum cluster size is   1 records

Weighted mean response is 1.125102


-2 * Normalized Log-Likelihood with Intercepts Only : -467095.27
-2 * Normalized Log-Likelihood Full Model           : -18418.12
Approximate Chi-Square (-2 * Log-L Ratio)           : 448677.15
Degrees of Freedom                                  :        5

Note: The approximate Chi-Square is not adjusted for clustering.
      Refer to hypothesis test table for adjusted test.



Date: 05-18-2017                                        SUDAAN                                                  Page:  1
Time: 12:47:44                                                                                                  Table: 1

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Log
Response variable NUMFALLS24: Number of Falls Past 2 Years
Offset variable OFFSET24: OFFSET24
For Subpopulation: AGE65P = 1
by: Independent Variables and Effects.

-------------------------------------------------------------------------------------------------------------
Independent                                                                                          P-value
  Variables and       Beta        DEFF                   Lower 95%   Upper 95%                     T-Test
  Effects             Coeff.      Beta #4      SE Beta   Limit Beta  Limit Beta   T-Test B=0       B=0
-------------------------------------------------------------------------------------------------------------
Intercept              -3.8136     8.2269      0.0744     -3.9626     -3.6647      -51.2791       0.0000
Gender 1=Male
  2=Female
  1                     0.2572    17.7007      0.0805      0.0959      0.4184        3.1954       0.0023
  2                     0.0000       .         0.0000      0.0000      0.0000         .            .
NAGE_C                  0.0147    12.2153      0.0044      0.0058      0.0235        3.3145       0.0016
Arthritis 1=Yes 0=No    0.7362     9.5305      0.0774      0.5812      0.8912        9.5135       0.0000
1=Yes Diabetes 0=No
  Diabetes              0.2475    10.9864      0.0702      0.1069      0.3881        3.5265       0.0008
BMI_C                   0.0041    22.7059      0.0084     -0.0127      0.0210        0.4911       0.6253
-------------------------------------------------------------------------------------------------------------
```

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Log
Response variable NUMFALLS24: Number of Falls Past 2 Years
Offset variable OFFSET24: OFFSET24
For Subpopulation: AGE65P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Var Beta
Intercept	0.0055
Gender 1=Male 2=Female	
1	0.0065
2	0.0000
NAGE_C	0.0000
Arthritis 1=Yes 0=No	0.0060
1=Yes Diabetes 0=No	
Diabetes	0.0049
BMI_C	0.0001

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Log
Response variable NUMFALLS24: Number of Falls Past 2 Years
Offset variable OFFSET24: OFFSET24
For Subpopulation: AGE65P = 1
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F	S_waite Adj ChiSq	P-value S_waite ChiSq	Wald F	P-value Wald F
OVERALL MODEL	6.0000	4.1734	1162.5781	0.0000	4851.9297	0.0000	1984.8793	0.0000
MODEL MINUS INTERCEPT	5.0000	3.6420	18.1398	0.0000	66.0661	0.0000	32.9040	0.0000
INTERCEPT	.	.	.	.	.	.	.	.
GENDER	1.0000	1.0000	10.2104	0.0023	10.2104	0.0014	10.2104	0.0023
NAGE_C	1.0000	1.0000	10.9860	0.0016	10.9860	0.0009	10.9860	0.0016
ARTHRITIS	1.0000	1.0000	90.5069	0.0000	90.5069	0.0000	90.5069	0.0000
DIABETES	1.0000	1.0000	12.4360	0.0008	12.4360	0.0004	12.4360	0.0008
BMI_C	1.0000	1.0000	0.2412	0.6253	0.2412	0.6234	0.2412	0.6253

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Log
Response variable NUMFALLS24: Number of Falls Past 2 Years
Offset variable OFFSET24: OFFSET24
For Subpopulation: AGE65P = 1
by: Contrast.

Contrast	Adj Wald F	P-value Adj Wald F	Wald ChiSq	P-value Wald ChiSq
OVERALL MODEL	1807.6580	0.0000	11909.2760	0.0000
MODEL MINUS INTERCEPT	30.5537	0.0000	164.5199	0.0000
INTERCEPT	.	.	.	.
GENDER	10.2104	0.0023	10.2104	0.0014
NAGE_C	10.9860	0.0016	10.9860	0.0009
ARTHRITIS	90.5069	0.0000	90.5069	0.0000
DIABETES	12.4360	0.0008	12.4360	0.0004
BMI_C	0.2412	0.6253	0.2412	0.6234

Variance Estimation Method: Taylor Series (WR)
SE Method: Robust (Binder, 1983)
Working Correlations: Independent
Link Function: Log
Response variable NUMFALLS24: Number of Falls Past 2 Years
Offset variable OFFSET24: OFFSET24
For Subpopulation: AGE65P = 1
by: Independent Variables and Effects.

Independent Variables and Effects	Incidence Density Ratio	Lower 95% Limit IDR	Upper 95% Limit IDR
Intercept	0.0221	0.0190	0.0256
Gender 1=Male 2=Female			
1	1.2933	1.1007	1.5195
2	1.0000	1.0000	1.0000
NAGE_C	1.0148	1.0058	1.0238
Arthritis 1=Yes 0=No	2.0879	1.7881	2.4380
1=Yes Diabetes 0=No Diabetes	1.2809	1.1128	1.4742
BMI_C	1.0041	0.9874	1.0212