```
* IVEware Analysis Examples Replication for ASDA 3rd Edition
* Berglund Winter 2025
* Chapter 9 ;

libname d "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code" ;

ods listing ;
ods graphics off ;
options nodate nonumber ls=125 ps=68 ;

*set options and location to call IVEware from SAS session ;
options set=srclib "E:\ive 11feb24\sas" sasautos=('!srclib' sasautos) mautosource ;

data c9_ncsr ;
 set d.ncsr ;
 * reverse coding for correct omitted group ;
 r_ag4cat=5-ag4cat ;
 r_mar3cat=4-mar3cat ;
 r_sex=3-sex ;
 r_ald=2-ald ;
 r_mde=2-mde ;
 r_ed4cat=5-ed4cat ;
 r_wkstat3c=4-wkstat3c ;
run ;

/* formats included here as reminder of categories for age, sex, education, marital status and yes/no variables:
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' ;
run ;
*/

ods rtf style=normalprinter bodytitle file="P:\ASDA3\Replication Iveware\Chapter 9\Analysis Example Replication
ASDA3 IVE C9 Code and Results.rtf" ;

ods text="Example 9.2.6 : IVEware does not offer weight bar charts or Wald tests for groups of variables so
these are omitted here" ;

* Check bivariate relationships using macro with PROC SURVEYLOGISTIC (note: Use of %regress would do the same
testing but SAS used here within macro environment.) ;

title "Bivariate Relationships of Work Status and Selected Predictors"  ;
%macro biv (pred,ref) ;
proc surveylogistic data=c9_ncsr ;
 strata sestrat ; cluster seclustr ; weight ncsrwtlg ;
 class wkstat3c (ref=first) &pred (ref=&ref) / param=ref ;
 model wkstat3c = &pred / link=glogit ;
run ;
%mend biv ;
%biv(ag4cat,first) ;
%biv(sex,last) ;
%biv(ald,first) ;
%biv(mde,first) ;
%biv(ed4cat,first) ;
%biv(mar3cat,first) ;

* Example 9.2.6 Table 9.3 Multinomial logistic regression using NCSR data ;
%regress (setup=new, name="Example 9.2.6", dir=P:\ASDA3\Replication Iveware\Chapter 9) ;
title Example 9.2.6  Multinomial logistic regression using NCSR data ;
 datain c9_ncsr ;
```

```
 stratum sestrat ; cluster seclustr ; weight ncsrwtlg ;
 class r_ag4cat sex r_ald r_mde r_ed4cat r_mar3cat r_wkstat3c ;
 dependent r_wkstat3c ;
 predictor sex r_ald r_mde r_ed4cat r_ag4cat r_mar3cat ;
 link logistic ;
run;

ods text="Figures 9.3 and 9.4, Margins Plot: Not Available in IVEware";
ods text="GOF test not available in IVEware" ;
ods text="Bayesian Data Production/Analysis Not Included Here" ;
ods text="Example 9.3.6: Ordinal Logistic Regression is not available in IVEware" ;
ods text="9.4.7 Example: Fitting Poisson and Negative Binomial Regression Models to Complex Sample Survey Data:
Only Poisson regression available in IVEware" ;

****;
data c9_hrs ;
 set d.hrs12 ;
 * prepare variables needed for models ;
 nage_c = nage - 74.5 ;
 bmi_c = r11bmi - 27.7 ;
 offset24 = 24 ;
 r_arthritis=2-arthritis ;
 r_diabetes=2-diabetes ;
run ;

* Stratum check ;
proc freq ;
 tables age65p*stratum* secu / list ;
run ;

* check weighted number of falls past 24 months ;
proc freq data=c9_hrs ;
 where age65p=1 ;
 tables numfalls24 ;
 weight nwgtr ;
run ;

* run Poisson regression ;
ods text="Note: Problem with Bad Strata: program aborts, PSU: Read data Only one cluster for stratum 27 Only one
cluster for stratum 53  Only one cluster for
 stratum 56. May consider stratum collapse but not shown here." ;

%regress (setup=new, name="Example 9.4.7", dir=P:\ASDA3\Replication Iveware\Chapter 9) ;
title Example 9.4.7 Poisson Regression Using HRS data, Table 9.10 Part 1  ;
 datain c9_hrs ;
 stratum stratum ; cluster secu ; weight nwgtr ;
 class gender ;
 dependent numfalls24 ;
 by age65p ;
 predictor gender nage_c arthritis diabetes bmi_c ;
 link log ;
run;

ods rtf close ;
```

Example 9.2.6 : IVEware does not offer weight bar charts or Wald tests for groups of variables so these are omitted here

Bivariate Relationships of Work Status and Selected Predictors

The SURVEYLOGISTIC Procedure

Model Information		
Data Set	WORK.C9_NCSR	
Response Variable	WKSTAT3C	Work Status 3 categories
Number of Response Levels	3	
Stratum Variable	sestrat	SAMPLING ERROR STRATUM
Number of Strata	42	
Cluster Variable	seclustr	SAMPLING ERROR CLUSTER
Number of Clusters	84	
Weight Variable	ncsrwtlg	NCSR sample part 2 weight
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	9282
Number of Observations Used	5679
Sum of Weights Read	5692
Sum of Weights Used	5667.185

Response Profile			
Ordered Value	**WKSTAT3C**	**Total Frequency**	**Total Weight**
1	1	3766	3671.4725
2	2	283	289.8166
3	3	1630	1705.8959

Logits modeled use WKSTAT3C=1 as the reference category.

Note:	**2649 observations were deleted due to missing values for the response or explanatory variables.**

Note:	**954 observations having nonpositive frequencies or weights were excluded since they do not contribute to the analysis.**

Class Level Information				
Class	**Value**	**Design Variables**		
ag4cat	**1**	0	0	0
	2	1	0	0
	3	0	1	0
	4	0	0	1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	9011.140	7804.927
SC	9024.425	7858.067
-2 Log L	9007.140	7788.927

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	204.56	4.8088	201.97	<.0001
Score	47.97	6	37	<.0001
Wald	106.76	6	37	<.0001
NOTE: Second-order Rao-Scott design correction 0.2477 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
ag4cat	106.76	6	37	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter		WKSTAT3C	Estimate	Standard Error	t Value	Pr > |t|
Intercept		2	-3.1803	0.2121	-14.99	<.0001
Intercept		3	-0.9554	0.0865	-11.04	<.0001
ag4cat	2	2	-0.1362	0.2770	-0.49	0.6255
ag4cat	2	3	-0.6444	0.1020	-6.32	<.0001
ag4cat	3	2	-0.1243	0.2311	-0.54	0.5936
ag4cat	3	3	-0.3455	0.1342	-2.57	0.0136
ag4cat	4	2	2.6528	0.2483	10.68	<.0001
ag4cat	4	3	1.9902	0.1243	16.01	<.0001
NOTE: The degrees of freedom for the t tests is 42.						

Odds Ratio Estimates				
Effect	WKSTAT3C	Point Estimate	95% Confidence Limits	
ag4cat 2 vs 1	2	0.873	0.499	1.526
ag4cat 2 vs 1	3	0.525	0.427	0.645
ag4cat 3 vs 1	2	0.883	0.554	1.408
ag4cat 3 vs 1	3	0.708	0.540	0.928
ag4cat 4 vs 1	2	14.193	8.598	23.428
ag4cat 4 vs 1	3	7.317	5.693	9.403
NOTE: The degrees of freedom in computing the confidence limits is 42.				

Bivariate Relationships of Work Status and Selected Predictors

The SURVEYLOGISTIC Procedure

Model Information		
Data Set	WORK.C9_NCSR	
Response Variable	WKSTAT3C	Work Status 3 categories
Number of Response Levels	3	
Stratum Variable	sestrat	SAMPLING ERROR STRATUM
Number of Strata	42	
Cluster Variable	seclustr	SAMPLING ERROR CLUSTER
Number of Clusters	84	
Weight Variable	ncsrwtlg	NCSR sample part 2 weight
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	9282
Number of Observations Used	5679
Sum of Weights Read	5692
Sum of Weights Used	5667.185

Response Profile			
Ordered Value	**WKSTAT3C**	**Total Frequency**	**Total Weight**
1	1	3766	3671.4725
2	2	283	289.8166
3	3	1630	1705.8959

Logits modeled use WKSTAT3C=1 as the reference category.

Note: **2649 observations were deleted due to missing values for the response or explanatory variables.**

Note: **954 observations having nonpositive frequencies or weights were excluded since they do not contribute to the analysis.**

Class Level Information		
Class	**Value**	**Design Variables**
sex	**1**	1
	2	0

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	9011.140	8878.892
SC	9024.425	8905.462
-2 Log L	9007.140	8870.892

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	58.01	1.6457	69.1184	<.0001
Score	28.21	2	41	<.0001
Wald	21.22	2	41	<.0001
NOTE: Second-order Rao-Scott design correction 0.2153 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
sex	21.22	2	41	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter		WKSTAT3C	Estimate	Standard Error	t Value	Pr > |t|
Intercept		2	-2.0950	0.1106	-18.94	<.0001
Intercept		3	-0.5291	0.0677	-7.81	<.0001
sex	1	2	-1.1591	0.2060	-5.63	<.0001
sex	1	3	-0.5183	0.0998	-5.19	<.0001
NOTE: The degrees of freedom for the t tests is 42.						

Odds Ratio Estimates				
Effect	WKSTAT3C	Point Estimate	95% Confidence Limits	
sex 1 vs 2	2	0.314	0.207	0.475
sex 1 vs 2	3	0.596	0.487	0.728
NOTE: The degrees of freedom in computing the confidence limits is 42.				

Bivariate Relationships of Work Status and Selected Predictors

The SURVEYLOGISTIC Procedure

Model Information		
Data Set	WORK.C9_NCSR	
Response Variable	WKSTAT3C	Work Status 3 categories
Number of Response Levels	3	
Stratum Variable	sestrat	SAMPLING ERROR STRATUM
Number of Strata	42	
Cluster Variable	seclustr	SAMPLING ERROR CLUSTER
Number of Clusters	84	
Weight Variable	ncsrwtlg	NCSR sample part 2 weight
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	9282
Number of Observations Used	5679
Sum of Weights Read	5692
Sum of Weights Used	5667.185

Response Profile			
Ordered Value	**WKSTAT3C**	**Total Frequency**	**Total Weight**
1	1	3766	3671.4725
2	2	283	289.8166
3	3	1630	1705.8959

Logits modeled use WKSTAT3C=1 as the reference category.

Note: **2649 observations were deleted due to missing values for the response or explanatory variables.**

Note: **954 observations having nonpositive frequencies or weights were excluded since they do not contribute to the analysis.**

Class Level Information		
Class	**Value**	**Design Variables**
ald	**0**	0
	1	1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	9011.140	9008.606
SC	9024.425	9035.176
-2 Log L	9007.140	9000.606

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	3.76	1.5260	64.0913	0.0394
Score	8.89	2	41	0.0006
Wald	3.23	2	41	0.0496
NOTE: Second-order Rao-Scott design correction 0.3106 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
ald	3.23	2	41	0.0496

Analysis of Maximum Likelihood Estimates						
Parameter		WKSTAT3C	Estimate	Standard Error	t Value	Pr > |t|
Intercept		2	-2.5058	0.1087	-23.04	<.0001
Intercept		3	-0.7640	0.0459	-16.66	<.0001
ald	1	2	-0.8629	0.3578	-2.41	0.0203
ald	1	3	-0.0459	0.1230	-0.37	0.7112
NOTE: The degrees of freedom for the t tests is 42.						

Odds Ratio Estimates				
Effect	WKSTAT3C	Point Estimate	95% Confidence Limits	
ald 1 vs 0	2	0.422	0.205	0.869
ald 1 vs 0	3	0.955	0.745	1.224
NOTE: The degrees of freedom in computing the confidence limits is 42.				

Bivariate Relationships of Work Status and Selected Predictors

The SURVEYLOGISTIC Procedure

Model Information		
Data Set	WORK.C9_NCSR	
Response Variable	WKSTAT3C	Work Status 3 categories
Number of Response Levels	3	
Stratum Variable	sestrat	SAMPLING ERROR STRATUM
Number of Strata	42	
Cluster Variable	seclustr	SAMPLING ERROR CLUSTER
Number of Clusters	84	
Weight Variable	ncsrwtlg	NCSR sample part 2 weight
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	9282
Number of Observations Used	5679
Sum of Weights Read	5692
Sum of Weights Used	5667.185

Response Profile			
Ordered Value	**WKSTAT3C**	**Total Frequency**	**Total Weight**
1	1	3766	3671.4725
2	2	283	289.8166
3	3	1630	1705.8959

Logits modeled use WKSTAT3C=1 as the reference category.

Note: **2649 observations were deleted due to missing values for the response or explanatory variables.**

Note: **954 observations having nonpositive frequencies or weights were excluded since they do not contribute to the analysis.**

Class Level Information		
Class	**Value**	**Design Variables**
mde	**0**	0
	1	1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	9011.140	9007.284
SC	9024.425	9033.854
-2 Log L	9007.140	8999.284

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	4.96	1.6203	68.0532	0.0147
Score	7.17	2	41	0.0021
Wald	6.72	2	41	0.0030
NOTE: Second-order Rao-Scott design correction 0.2343 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
mde	6.72	2	41	0.0030

Analysis of Maximum Likelihood Estimates						
Parameter		WKSTAT3C	Estimate	Standard Error	t Value	Pr > |t|
Intercept		2	-2.4692	0.1125	-21.94	<.0001
Intercept		3	-0.7426	0.0527	-14.10	<.0001
mde	1	2	-0.4082	0.1217	-3.35	0.0017
mde	1	3	-0.1246	0.0782	-1.59	0.1188
NOTE: The degrees of freedom for the t tests is 42.						

Odds Ratio Estimates				
Effect	WKSTAT3C	Point Estimate	95% Confidence Limits	
mde 1 vs 0	2	0.665	0.520	0.850
mde 1 vs 0	3	0.883	0.754	1.034
NOTE: The degrees of freedom in computing the confidence limits is 42.				

Bivariate Relationships of Work Status and Selected Predictors

The SURVEYLOGISTIC Procedure

Model Information		
Data Set	WORK.C9_NCSR	
Response Variable	WKSTAT3C	Work Status 3 categories
Number of Response Levels	3	
Stratum Variable	sestrat	SAMPLING ERROR STRATUM
Number of Strata	42	
Cluster Variable	seclustr	SAMPLING ERROR CLUSTER
Number of Clusters	84	
Weight Variable	ncsrwtlg	NCSR sample part 2 weight
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	9282
Number of Observations Used	5679
Sum of Weights Read	5692
Sum of Weights Used	5667.185

Response Profile			
Ordered Value	**WKSTAT3C**	**Total Frequency**	**Total Weight**
1	1	3766	3671.4725
2	2	283	289.8166
3	3	1630	1705.8959

Logits modeled use WKSTAT3C=1 as the reference category.

Note: **2649 observations were deleted due to missing values for the response or explanatory variables.**

Note: **954 observations having nonpositive frequencies or weights were excluded since they do not contribute to the analysis.**

Class Level Information				
Class	**Value**	**Design Variables**		
ED4CAT	**1**	0	0	0
	2	1	0	0
	3	0	1	0
	4	0	0	1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	9011.140	8698.885
SC	9024.425	8752.024
-2 Log L	9007.140	8682.885

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	51.12	5.0579	212.43	<.0001
Score	23.71	6	37	<.0001
Wald	29.98	6	37	<.0001
NOTE: Second-order Rao-Scott design correction 0.1863 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
ED4CAT	29.98	6	37	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter		WKSTAT3C	Estimate	Standard Error	t Value	Pr > |t|
Intercept		2	-1.5019	0.2195	-6.84	<.0001
Intercept		3	0.1078	0.0960	1.12	0.2675
ED4CAT	2	2	-0.8458	0.2229	-3.79	0.0005
ED4CAT	2	3	-0.7553	0.1284	-5.88	<.0001
ED4CAT	3	2	-1.4620	0.2456	-5.95	<.0001
ED4CAT	3	3	-1.1379	0.1302	-8.74	<.0001
ED4CAT	4	2	-1.8935	0.2701	-7.01	<.0001
ED4CAT	4	3	-1.4515	0.1508	-9.62	<.0001
NOTE: The degrees of freedom for the t tests is 42.						

Odds Ratio Estimates				
Effect	WKSTAT3C	Point Estimate	95% Confidence Limits	
ED4CAT 2 vs 1	2	0.429	0.274	0.673
ED4CAT 2 vs 1	3	0.470	0.363	0.609
ED4CAT 3 vs 1	2	0.232	0.141	0.380
ED4CAT 3 vs 1	3	0.320	0.246	0.417
ED4CAT 4 vs 1	2	0.151	0.087	0.260
ED4CAT 4 vs 1	3	0.234	0.173	0.318
NOTE: The degrees of freedom in computing the confidence limits is 42.				

Bivariate Relationships of Work Status and Selected Predictors

The SURVEYLOGISTIC Procedure

Model Information		
Data Set	WORK.C9_NCSR	
Response Variable	WKSTAT3C	Work Status 3 categories
Number of Response Levels	3	
Stratum Variable	sestrat	SAMPLING ERROR STRATUM
Number of Strata	42	
Cluster Variable	seclustr	SAMPLING ERROR CLUSTER
Number of Clusters	84	
Weight Variable	ncsrwtlg	NCSR sample part 2 weight
Model	Generalized Logit	
Optimization Technique	Newton-Raphson	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation	
Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	9282
Number of Observations Used	5679
Sum of Weights Read	5692
Sum of Weights Used	5667.185

Response Profile			
Ordered Value	**WKSTAT3C**	**Total Frequency**	**Total Weight**
1	1	3766	3671.4725
2	2	283	289.8166
3	3	1630	1705.8959

Logits modeled use WKSTAT3C=1 as the reference category.

Note: **2649 observations were deleted due to missing values for the response or explanatory variables.**

Note: **954 observations having nonpositive frequencies or weights were excluded since they do not contribute to the analysis.**

Class Level Information			
Class	**Value**	**Design Variables**	
MAR3CAT	**1**	0	0
	2	1	0
	3	0	1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	9011.140	8833.583
SC	9024.425	8873.437
-2 Log L	9007.140	8821.583

Testing Global Null Hypothesis: BETA=0				
Test	F Value	Num DF	Den DF	Pr > F
Likelihood Ratio	51.19	3.3356	140.10	<.0001
Score	43.38	4	39	<.0001
Wald	36.72	4	39	<.0001
NOTE: Second-order Rao-Scott design correction 0.1992 applied to the Likelihood Ratio test.				

Type 3 Analysis of Effects				
Effect	F Value	Num DF	Den DF	Pr > F
MAR3CAT	36.72	4	39	<.0001

Analysis of Maximum Likelihood Estimates						
Parameter		WKSTAT3C	Estimate	Standard Error	t Value	Pr > |t|
Intercept		2	-2.3396	0.1274	-18.36	<.0001
Intercept		3	-0.9195	0.0561	-16.38	<.0001
MAR3CAT	2	2	0.2656	0.1905	1.39	0.1706
MAR3CAT	2	3	0.6045	0.0997	6.06	<.0001
MAR3CAT	3	2	-2.8180	0.3434	-8.21	<.0001
MAR3CAT	3	3	0.0843	0.1069	0.79	0.4345
NOTE: The degrees of freedom for the t tests is 42.						

Odds Ratio Estimates				
Effect	WKSTAT3C	Point Estimate	95% Confidence Limits	
MAR3CAT 2 vs 1	2	1.304	0.888	1.916
MAR3CAT 2 vs 1	3	1.830	1.497	2.238
MAR3CAT 3 vs 1	2	0.060	0.030	0.119
MAR3CAT 3 vs 1	3	1.088	0.877	1.350
NOTE: The degrees of freedom in computing the confidence limits is 42.				

```
IVEware Setup Checker, Fri Feb 28 16:15:15 2025                                  1

Setup listing:

title Example 9.2.6  Multinomial logistic regression using NCSR data ;
 datain c9_ncsr ;
 stratum sestrat ; cluster seclustr ; weight ncsrwtlg ;
 class r_ag4cat sex r_ald r_mde r_ed4cat r_mar3cat r_wkstat3c ;
 dependent r_wkstat3c ;
 predictor sex r_ald r_mde r_ed4cat r_ag4cat r_mar3cat ;
 link logistic ;
run;
```

```
IVEware Jackknife Regression Procedure, Fri Feb 28 16:15:16 2025                 1

Example 9.2.6 Multinomial logistic regression using NCSR data

Regression type:         Polytomous
Dependent variable:      r_wkstat3c
Predictors:              sex  Sex 1=Male 2=Female
                         r_ald
                         r_mde
                         r_ed4cat
                         r_ag4cat
                         r_mar3cat
Cat. var. ref. codes:    sex  2
                         r_ag4cat  4
                         r_mar3cat  3
                         r_ald  2
                         r_mde  2
                         r_ed4cat  4
                         r_wkstat3c  3
Stratum variable:        sestrat  SAMPLING ERROR STRATUM
Cluster variable:        seclustr  SAMPLING ERROR CLUSTER
Weight variable:         ncsrwtlg  NCSR sample part 2 weight

Valid cases                 5679
Sum weights           5667.184998
Replicates                    42

Degr freedom                  42

-2 LogLike            7351.903365

Variable                 Estimate         Std Error            T Test        Prob > |T|
r_wkstat3c.1
Intercept              -0.3794741         0.1721162          -2.20476            0.03300
sex                    -0.6402555         0.1103050          -5.80441            0.00000
r_ald                   0.3332477         0.1305425           2.55279            0.01441
r_mde                   0.0985220         0.0875571           1.12523            0.26688
r_ed4cat.1             -1.2295007         0.1606919          -7.65129            0.00000
r_ed4cat.2             -0.9169420         0.1471796          -6.23009            0.00000
r_ed4cat.3             -0.6514012         0.1403631          -4.64083            0.00003
r_ag4cat.1              2.3806067         0.1733245          13.73497            0.00000
r_ag4cat.2              0.0649931         0.1732136           0.37522            0.70939
r_ag4cat.3             -0.3164450         0.1288982          -2.45500            0.01831
r_mar3cat.1             0.5527891         0.1325248           4.17121            0.00015
r_mar3cat.2            -0.0522634         0.1049048          -0.49820            0.62094
r_wkstat3c.2
Intercept              -0.6438012         0.2965853          -2.17071            0.03565
sex                    -1.3931969         0.1960786          -7.10530            0.00000
r_ald                  -0.1637813         0.3517969          -0.46556            0.64394
r_mde                  -0.1397560         0.1572275          -0.88888            0.37913
r_ed4cat.1             -1.7309570         0.3083845          -5.61298            0.00000
r_ed4cat.2             -1.3653017         0.2593296          -5.26474            0.00000
r_ed4cat.3             -0.8470398         0.2364028          -3.58304            0.00088
r_ag4cat.1              1.8283949         0.2860155           6.39264            0.00000
r_ag4cat.2             -0.8377006         0.2553588          -3.28048            0.00209
```

Example 9.2.6 Multinomial logistic regression using NCSR data

Variable	Estimate	Std Error	T Test	Prob > |T|
r_ag4cat.3	-0.8523907	0.2968191	-2.87175	0.00637
r_mar3cat.1	-2.7845661	0.3801235	-7.32542	0.00000
r_mar3cat.2	-0.5899026	0.2237106	-2.63690	0.01168

Variable	Odds Ratio	95% Confidence Interval Lower	Upper
r_wkstat3c.1			
Intercept			
sex	0.5271577	0.4219537	0.6585918
r_ald	1.3954930	1.0722966	1.8161025
r_mde	1.1035387	0.9248024	1.3168193
r_ed4cat.1	0.2924386	0.2114452	0.4044562
r_ed4cat.2	0.3997396	0.2970181	0.5379864
r_ed4cat.3	0.5213148	0.3927174	0.6920220
r_ag4cat.1	10.8114598	7.6203645	15.3388545
r_ag4cat.2	1.0671516	0.7523410	1.5136920
r_ag4cat.3	0.7287351	0.5618211	0.9452383
r_mar3cat.1	1.7380940	1.3302190	2.2710325
r_mar3cat.2	0.9490789	0.7679969	1.1728571
r_wkstat3c.2			
Intercept			
sex	0.2482803	0.1671441	0.3688022
r_ald	0.8489276	0.4173896	1.7266316
r_mde	0.8695704	0.6331465	1.1942775
r_ed4cat.1	0.1771148	0.0950549	0.3300164
r_ed4cat.2	0.2553036	0.1512760	0.4308677
r_ed4cat.3	0.4286821	0.2660372	0.6907617
r_ag4cat.1	6.2238889	3.4945100	11.0850428
r_ag4cat.2	0.4327044	0.2584547	0.7244327
r_ag4cat.3	0.4263943	0.2342433	0.7761678
r_mar3cat.1	0.0617559	0.0286763	0.1329946
r_mar3cat.2	0.5543813	0.3529715	0.8707180

Variable	Design Effect	SRS Estimate	% Diff SRS v Est
r_wkstat3c.1			
Intercept	2.07678	-0.3686795	-2.84461
sex	2.49941	-0.4438028	-30.68349
r_ald	1.19542	0.2821847	-15.32285
r_mde	1.47541	0.0795390	-19.26784
r_ed4cat.1	2.17003	-1.4038339	14.17919
r_ed4cat.2	2.15313	-1.0199367	11.23241
r_ed4cat.3	2.03152	-0.7373261	13.19077
r_ag4cat.1	2.11489	2.2639728	-4.89934
r_ag4cat.2	2.77945	0.1692781	160.45562
r_ag4cat.3	1.69636	-0.2191842	-30.73545
r_mar3cat.1	2.04157	0.4474283	-19.05986
r_mar3cat.2	1.47002	0.0577880	-210.57067
r_wkstat3c.2			
Intercept	1.99630	-0.8881030	37.94679

Bivariate Relationships of Work Status and Selected Predictors

IVEware Jackknife Regression Procedure, Fri Feb 28 16:15:26 2025 3

Example 9.2.6 Multinomial logistic regression using NCSR data

Variable	Design Effect	SRS Estimate	% Diff SRS v Est
sex	1.37287	-1.5207141	9.15285
r_ald	1.17249	-0.2156997	31.69982
r_mde	1.15013	-0.1527761	9.31631
r_ed4cat.1	2.23333	-1.2714246	-26.54788
r_ed4cat.2	1.83966	-1.0604353	-22.32959
r_ed4cat.3	1.68134	-0.7941425	-6.24496
r_ag4cat.1	2.02538	1.8149489	-0.73540
r_ag4cat.2	1.36185	-0.6921360	-17.37668
r_ag4cat.3	2.20823	-0.5414749	-36.47574
r_mar3cat.1	1.24676	-2.0139938	-27.67298
r_mar3cat.2	1.86898	-0.5842458	-0.95894

Figures 9.3 and 9.4, Margins Plot: Not Available in IVEware

GOF test not available in IVEware

Bayesian Data Production/Analysis Not Included Here

Example 9.3.6: Ordinal Logistic Regression is not available in IVEware

9.4.7 Example: Fitting Poisson and Negative Binomial Regression Models to Complex Sample Survey Data: Only Poisson regression available in IVEware

The FREQ Procedure

Number of Falls Past 2 Years				
numfalls24	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	27268099	65.22	27268099	65.22
1	5789028	13.85	33057127	79.06
2	3446787	8.24	36503914	87.31
3	2048115	4.90	38552029	92.20
4	990355	2.37	39542384	94.57
5	674539	1.61	40216923	96.19
6	471722	1.13	40688645	97.31
7	67152	0.16	40755797	97.48
8	149761	0.36	40905558	97.83
9	16081	0.04	40921639	97.87
10	248432	0.59	41170071	98.47
11	4260	0.01	41174331	98.48
12	235131	0.56	41409462	99.04
13	5095	0.01	41414557	99.05
15	71103	0.17	41485660	99.22
18	7744	0.02	41493404	99.24
19	3164	0.01	41496568	99.25
20	135477	0.32	41632045	99.57
24	5324	0.01	41637369	99.58
25	31386	0.08	41668755	99.66
30	63476	0.15	41732231	99.81
35	2052	0.00	41734283	99.82
40	16918	0.04	41751201	99.86
45	2763	0.01	41753964	99.86
50	57493	0.14	41811457	100.00
Frequency Missing = 544127				

Note: Problem with Bad Strata: program aborts, PSU: Read data Only one cluster for stratum 27 Only one cluster for stratum 53 Only one cluster for stratum 56. May consider stratum collapse but not shown here.