

Topics in Social Statistics, fall 2010
SAS example for OCH Survey data set
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```
libname a "E:\Root\USB\HY\Social Statistics Course 2010\Data";

proc surveylogistic data=a.ohc;
title "OHC data / SURVEYLOGISTIC";
title2 "Design-based logistic ANCOVA";
strata stratum;
cluster PSU;
class sex / param=ref;
model psych2(event=last)=sex age phys chron sex*age
  / link=logit clodds rsquare ; run;
```

The SURVEYLOGISTIC Procedure

Model Information

Data Set	A.OHC	
Response Variable	PSYCH2	Psychic strain - dichotomy
Number of Response Levels	2	
Stratum Variable	STRATUM	Stratum identifier
Number of Strata	5	
Cluster Variable	PSU	
Number of Clusters	250	
Model	Binary Logit	
Optimization Technique	Fisher's Scoring	
Variance Adjustment	Degrees of Freedom (DF)	

Variance Estimation

Method	Taylor Series
Variance Adjustment	Degrees of Freedom (DF)

Number of Observations Read	7841
Number of Observations Used	7841

Response Profile

Ordered Value	PSYCH2	Total Frequency
1	0	3925
2	1	3916

Probability modeled is PSYCH2=1.

Class Level Information

Class	Value	Design Variables
SEX	1	1
	2	0

R-Square 0.0326 Max-rescaled R-Square 0.0434

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	259.7153	5	<.0001
Score	256.4213	5	<.0001
Wald	203.3968	5	<.0001

Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
SEX	1	23.8111	<.0001
AGE	1	1.2611	0.2614
PHYS	1	21.5044	<.0001
CHRON	1	96.2804	<.0001
AGE*SEX	1	6.5458	0.0105

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	0.1964	0.1573	1.5600	0.2117
SEX	1	-0.9925	0.2034	23.8111	<.0001
AGE	1	-0.00456	0.00406	1.2611	0.2614
PHYS	1	0.2764	0.0596	21.5044	<.0001
CHRON	1	0.5641	0.0575	96.2804	<.0001
AGE*SEX	1	0.0131	0.00511	6.5458	0.0105

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
PHYS	1.318	1.173	1.482
CHRON	1.758	1.571	1.967

Association of Predicted Probabilities and Observed Responses

Percent Concordant	60.0	Somers' D	0.209
Percent Discordant	39.2	Gamma	0.210
Percent Tied	0.8	Tau-a	0.104
Pairs	15370300	c	0.604

Wald Confidence Interval for Odds Ratios

Effect	Unit	Estimate	95% Confidence Limits	
PHYS	1.0000	1.318	1.173	1.482
CHRON	1.0000	1.758	1.571	1.967