

NOMREG

```
contra (BASE='n' ORDER=ASCENDING) WITH age
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001) SINGULAR(0.00000001)
/MODEL
/STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT =INCLUDE
/PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI IC .
```

Nominal Regression

Notes

Output Created	22-MAR-2011 11:25:41	
Comments		
Input	Data	E:\MacEwan\Teaching\stat 371\Notes\contraceptive.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	freq
	Split File	<none>
	N of Rows in Working Data File	21
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax	NOMREG contra (BASE='n' ORDER=ASCENDING) WITH age /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001) /MODEL /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR) /INTERCEPT =INCLUDE /PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI IC .	
Resources	Elapsed Time	0:00:00.09
	Processor Time	0:00:00.06

[DataSet0] E:\MacEwan\Teaching\stat 371\Notes\contraceptive.sav

Case Processing Summary

		N	Marginal Percentage
contra	n	1671	52.8%
	o	489	15.5%
	s	1005	31.8%
Valid		3165	100.0%
Missing		0	
Total		3165	
Subpopulation		7	

Model Fitting Information

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	605.377	617.497	601.377			
Final	382.252	406.491	374.252	227.125	2	.000

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	268.169	10	.000
Deviance	293.978	10	.000

Pseudo R-Square

Cox and Snell	.069
Nagelkerke	.080
McFadden	.036

Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	605.921	618.041	601.921	227.669	2	.000
age	605.377	617.497	601.377	227.125	2	.000

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

Parameter Estimates

		B	Std. Error	Wald	df	Sig.	Exp(B)
contra ^a	Intercept	-.152	.190	.638	1	.424	
	age	-.037	.006	33.008	1	.000	.964
s	Intercept	-2.236	.159	198.226	1	.000	
	age	.053	.005	130.295	1	.000	1.055

Parameter Estimates

contra ^a		95% Confidence Interval for Exp(B)	
		Lower Bound	Upper Bound
o	Intercept age	.951	.976
s	Intercept age	1.045	1.065

a. The reference category is: n.

NOMREG

```
contra (BASE='n' ORDER=ASCENDING) WITH age a2
/CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0)
PCONVERGE(0.000001) SINGULAR(0.00000001)
/MODEL
/STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR)
REMOVALMETHOD(LR)
/INTERCEPT =INCLUDE
/PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI IC .
```

Nominal Regression

Notes

Output Created	22-MAR-2011 11:25:55	
Comments		
Input	Data	E:\MacEwan\Teaching\stat 371\Notes\contraceptive.sav
	Active Dataset	DataSet0
	Filter	<none>
	Weight	freq
	Split File	<none>
	N of Rows in Working Data File	21
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax	NOMREG contra (BASE='n' ORDER=ASCENDING) WITH age a2 /CRITERIA CIN(95) DELTA(0) MXITER(100) MXSTEP(5) CHKSEP(20) LCONVERGE(0) PCONVERGE(0.000001) SINGULAR(0.00000001) /MODEL /STEPWISE = PIN(.05) POUT(0.1) MINEFFECT(0) RULE(SINGLE) ENTRYMETHOD(LR) REMOVALMETHOD(LR) /INTERCEPT =INCLUDE /PRINT = CELLPROB CLASSTABLE FIT PARAMETER SUMMARY LRT CPS STEP MFI IC	
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	Processor Time	0:00:00.11

[DataSet0] E:\MacEwan\Teaching\stat 371\Notes\contraceptive.sav

Case Processing Summary

		N	Marginal Percentage
contra	n	1671	52.8%
	o	489	15.5%
	s	1005	31.8%
Valid		3165	100.0%
Missing		0	
Total		3165	
Subpopulation		7	

Model Fitting Information

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	605.377	617.497	601.377			
Final	112.749	149.108	100.749	500.628	4	.000

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	18.869	8	.016
Deviance	20.475	8	.009

Pseudo R-Square

Cox and Snell	.146
Nagelkerke	.170
McFadden	.080

Likelihood Ratio Tests

Effect	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	492.264	516.504	484.264	383.515	2	.000
age	419.670	443.910	411.670	310.922	2	.000
a2	382.252	406.491	374.252	273.503	2	.000

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

Parameter Estimates

contra ^a		B	Std. Error	Wald	df	Sig.	Exp(B)
o	Intercept	-4.550	.694	42.998	1	.000	
	age	.264	.047	31.472	1	.000	1.302
	a2	-.005	.001	39.233	1	.000	.995
s	Intercept	-12.618	.757	277.545	1	.000	
	age	.710	.046	243.225	1	.000	2.033
	a2	-.010	.001	218.250	1	.000	.990

Parameter Estimates

contra ^a		95% Confidence Interval for Exp(B)	
		Lower Bound	Upper Bound
o	Intercept		
	age	1.187	1.428
	a2	.994	.997
s	Intercept		
	age	1.860	2.223
	a2	.989	.992

a. The reference category is: n.

Classification

Observed	Predicted			
	n	o	s	Percent Correct
n	1280	0	391	76.6%
o	363	0	126	.0%
s	540	0	465	46.3%
Overall Percentage	69.0%	.0%	31.0%	55.1%

Observed and Predicted Frequencies

a2 age contra			Frequency			Percentage	
			Observed	Predicted	Pearson Residual	Observed	Predicted
306.25	17.50	n	232	229.139	.398	78.4%	77.4%
		o	61	57.320	.541	20.6%	19.4%
		s	3	9.541	-2.153	1.0%	3.2%
506.25	22.50	n	400	393.405	.552	64.8%	63.8%
		o	137	142.295	-.506	22.2%	23.1%
		s	80	81.300	-.155	13.0%	13.2%
756.25	27.50	n	301	317.221	-1.275	46.5%	49.0%
		o	131	130.779	.022	20.2%	20.2%
		s	216	200.000	1.361	33.3%	30.9%
1056.25	32.50	n	203	214.279	-.988	37.1%	39.2%
		o	76	79.371	-.409	13.9%	14.5%
		s	268	253.350	1.256	49.0%	46.3%
1406.25	37.50	n	188	165.698	2.202	43.2%	38.1%
		o	50	43.470	1.044	11.5%	10.0%
		s	197	225.832	-2.767	45.3%	51.9%
1806.25	42.50	n	164	160.023	.433	48.5%	47.3%
		o	24	23.438	.120	7.1%	6.9%
		s	150	154.539	-.496	44.4%	45.7%
2256.25	47.50	n	183	191.235	-1.042	64.4%	67.3%
		o	10	12.327	-.678	3.5%	4.3%
		s	91	80.438	1.391	32.0%	28.3%

The percentages are based on total observed frequencies in each subpopulation.