

Minitab: Test MLE for Sex using Pulse Dataset

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Welcome to Minitab, press F1 for help.

Binary Logistic Regression: Sex versus Height

Link Function: Logit

Response Information

Variable	Value	Count
Sex	1	57 (Event)
	0	35
Total		92

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds	95% CI	
					Ratio	Lower	Upper
Constant	-53.3227	11.4409	-4.66	0.000			
Height	0.790517	0.168691	4.69	0.000	2.20	1.58	3.07

Log-Likelihood = -30.549

Test that all slopes are zero: G = 61.129, DF = 1, P-Value = 0.000

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	8.00047	19	0.987
Deviance	9.36280	19	0.967
Hosmer-Lemeshow	1.89103	6	0.929

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

Value	Group								Total
	1	2	3	4	5	6	7	8	
1									
Obs	0	4	8	7	12	9	9	8	57
Exp	0.2	2.7	8.9	7.7	11.8	8.7	8.9	8.0	
0									
Obs	11	11	9	3	1	0	0	0	35
Exp	10.8	12.3	8.1	2.3	1.2	0.3	0.1	0.0	
Total	11	15	17	10	13	9	9	8	92

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures
Concordant	1801	90.3	Somers' D 0.84
Discordant	116	5.8	Goodman-Kruskal Gamma 0.88
Ties	78	3.9	Kendall's Tau-a 0.40
Total	1995	100.0	

Minitab: Test MLE for Sex using Pulse Dataset

Binary Logistic Regression: Sex versus Weight

Link Function: Logit

Response Information

Variable	Value	Count	
Sex	1	57	(Event)
	0	35	
	Total	92	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	95% CI Upper
Constant	-21.4818	4.48342	-4.79	0.000			
Weight	0.157702	0.0324812	4.86	0.000	1.17	1.10	1.25

Log-Likelihood = -26.126

Test that all slopes are zero: G = 69.974, DF = 1, P-Value = 0.000

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	18.5426	35	0.990
Deviance	17.2106	35	0.995
Hosmer-Lemeshow	3.2500	7	0.861

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

Value	Group									Total
	1	2	3	4	5	6	7	8	9	
1										
Obs	0	0	3	7	13	11	11	10	2	57
Exp	0.2	0.6	2.2	6.2	14.6	10.4	10.8	10.0	2.0	
0										
Obs	9	9	8	5	4	0	0	0	0	35
Exp	8.8	8.4	8.8	5.8	2.4	0.6	0.2	0.0	0.0	
Total	9	9	11	12	17	11	11	10	2	92

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures
Concordant	1869	93.7	Somers' D 0.89
Discordant	89	4.5	Goodman-Kruskal Gamma 0.91
Ties	37	1.9	Kendall's Tau-a 0.43
Total	1995	100.0	

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Minitab: Test MLE for Sex using Pulse Dataset

Binary Logistic Regression: Sex versus Weight, Height

Link Function: Logit

Response Information

Variable	Value	Count	
Sex	1	57	(Event)
	0	35	
	Total	92	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI	
						Lower	Upper
Constant	-41.3971	11.6260	-3.56	0.000			
Weight	0.114585	0.0364816	3.14	0.002	1.12	1.04	1.20
Height	0.381653	0.187085	2.04	0.041	1.46	1.02	2.11

Log-Likelihood = -23.450

Test that all slopes are zero: G = 75.326, DF = 2, P-Value = 0.000

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	33.8184	77	1.000
Deviance	33.7175	77	1.000
Hosmer-Lemeshow	3.0383	8	0.932

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

Value	Group										Total	
	1	2	3	4	5	6	7	8	9	10		
1												
Obs	0	0	2	4	7	7	9	9	9	10		57
Exp	0.1	0.5	1.4	3.4	7.3	8.0	8.5	8.9	9.0	10.0		
0												
Obs	9	9	7	5	3	2	0	0	0	0		35
Exp	8.9	8.5	7.6	5.6	2.7	1.0	0.5	0.1	0.0	0.0		
Total	9	9	9	9	10	9	9	9	9	10		92

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures
Concordant	1911	95.8	Somers' D 0.92
Discordant	78	3.9	Goodman-Kruskal Gamma 0.92
Ties	6	0.3	Kendall's Tau-a 0.44
Total	1995	100.0	