

The LOGISTIC Procedure

Model Information	
Data Set	WORK.CAT
Response Variable	OUTCOME
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	15153
Number of Observations Used	15153

Response Profile		
Ordered Value	OUTCOME	Total Frequency
1	0	14751
2	1	402

Probability modeled is OUTCOME='0'.

Stepwise Selection Procedure

Step 0. Intercept entered:

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

-2 Log L	=	3711.359
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Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
167.1999	12	<.0001

Step 1. Effect Credit_score entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	3713.359	3613.387
SC	3720.985	3628.639
-2 Log L	3711.359	3609.387

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	101.9716	1	<.0001
Score	99.3280	1	<.0001
Wald	94.1327	1	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
68.3963	11	<.0001

Note: No effects for the model in Step 1 are removed.

Step 2. Effect Tot_mthly_debt_exp entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	3713.359	3562.127
SC	3720.985	3585.005
-2 Log L	3711.359	3556.127

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	155.2319	2	<.0001
Score	153.7396	2	<.0001
Wald	145.8541	2	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
14.7727	10	0.1406

Note: No effects for the model in Step 2 are removed.

Step 3. Effect First_home entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	3713.359	3557.623
SC	3720.985	3588.127
-2 Log L	3711.359	3549.623

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	161.7361	3	<.0001
Score	159.1847	3	<.0001
Wald	151.0764	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
8.3415	9	0.5001

Note: No effects for the model in Step 3 are removed.

The LOGISTIC Procedure**Step 4. Effect Tot_mthly_incm entered:**

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	3713.359	3557.798
SC	3720.985	3595.927
-2 Log L	3711.359	3547.798

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	163.5614	4	<.0001
Score	160.7535	4	<.0001
Wald	152.2278	4	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
6.4268	8	0.5995

Step 5. Effect Tot_mthly_incm is removed:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	3713.359	3557.623
SC	3720.985	3588.127
-2 Log L	3711.359	3549.623

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	161.7361	3	<.0001
Score	159.1847	3	<.0001
Wald	151.0764	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
8.3415	9	0.5001

Note: No effects for the model in Step 5 are removed.

Note: Model building terminates because the last effect entered is removed by the Wald statistic criterion.

Summary of Stepwise Selection							
Step	Effect		DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq
	Entered	Removed					
1	Credit_score		1	1	99.3280		<.0001
2	Tot_mthly_debt_exp		1	2	52.4367		<.0001
3	First_home		1	3	6.3314		0.0119
4	Tot_mthly_incm		1	4	1.8461		0.1742
5		Tot_mthly_incm	1	3		1.8449	0.1744

Summary of Stepwise Selection	
Step	Variable Label
1	Values of Credit_score Were Replaced by Ranks
2	Values of Tot_mthly_debt_exp Were Replaced by Ranks
3	
4	Values of Tot_mthly_incm Were Replaced by Ranks
5	Values of Tot_mthly_incm Were Replaced by Ranks

The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	2.2473	0.1136	391.3753	<.0001
First_home	1	0.2911	0.1160	6.2973	0.0121
Credit_score	1	0.1940	0.0197	97.3968	<.0001
Tot_mthly_debt_exp	1	0.1346	0.0184	53.6301	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
First_home	1.338	1.066	1.679
Credit_score	1.214	1.168	1.262
Tot_mthly_debt_exp	1.144	1.104	1.186

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	66.7	Somers' D	0.368
Percent Discordant	30.0	Gamma	0.380
Percent Tied	3.3	Tau-a	0.019
Pairs	5929902	c	0.684