The LOGISTIC Procedure

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

Number of Observations Read	683
Number of Observations Used	683

Response Profile		
Ordered Value	**dia**	**Total Frequency**
1	1	444
2	0	239

Probability modeled is dia=1.

Stepwise Selection Procedure

Step 0. Intercept entered:

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

-2 Log L	=	884.350

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
613.7520	80	<.0001

Step 1. Effect F6_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	415.515
SC	890.877	424.568
-2 Log L	884.350	411.515

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	472.8349	1	<.0001
Score	419.7745	1	<.0001
Wald	233.7847	1	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
364.0598	79	<.0001

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

Step 2. Effect F2_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	261.087
SC	890.877	274.666
-2 Log L	884.350	255.087

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	629.2633	2	<.0001
Score	492.6166	2	<.0001
Wald	160.5861	2	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
192.3751	78	<.0001

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

Step 3. Effect F5_2 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	214.813
SC	890.877	232.919
-2 Log L	884.350	206.813

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	677.5377	3	<.0001
Score	512.1493	3	<.0001
Wald	125.6490	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
135.2679	77	<.0001

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

Step 4. Effect F3_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	200.136
SC	890.877	222.768
-2 Log L	884.350	190.136

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	694.2143	4	<.0001
Score	522.3696	4	<.0001
Wald	128.3854	4	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
133.0642	76	<.0001

Note: No effects for the model in Step 4 are removed.

Step 5. Effect F3_1 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	181.575
SC	890.877	208.734
-2 Log L	884.350	169.575

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	714.7756	5	<.0001
Score	546.7484	5	<.0001
Wald	121.3154	5	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
120.6107	75	0.0007

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

Step 6. Effect F9_1 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	171.134
SC	890.877	202.819
-2 Log L	884.350	157.134

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	727.2164	6	<.0001
Score	553.0894	6	<.0001
Wald	109.7584	6	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
110.2169	74	0.0040

Note: No effects for the model in Step 6 are removed.

Step 7. Effect F8_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	163.870
SC	890.877	200.081
-2 Log L	884.350	147.870

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	736.4807	7	<.0001
Score	555.5535	7	<.0001
Wald	102.8828	7	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
98.6449	73	0.0245

Note: No effects for the model in Step 7 are removed.

Step 8. Effect F7_8 entered:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	157.019
SC	890.877	197.757
-2 Log L	884.350	139.019

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	745.3313	8	<.0001
Score	557.9242	8	<.0001
Wald	98.3595	8	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
97.9740	72	0.0226

Step 9. Effect F7_8 is removed:

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

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	163.870
SC	890.877	200.081
-2 Log L	884.350	147.870

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	736.4807	7	<.0001
Score	555.5535	7	<.0001
Wald	102.8828	7	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
98.6449	73	0.0245

Note: No effects for the model in Step 9 are removed.

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

Summary of Stepwise Selection							
	Effect						
Step	Entered	Removed	DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq
1	F6_1		1	1	419.7745		<.0001
2	F2_1		1	2	201.5457		<.0001
3	F5_2		1	3	55.2801		<.0001
4	F3_2		1	4	15.6623		<.0001
5	F3_1		1	5	19.1660		<.0001
6	F9_1		1	6	11.2517		0.0008
7	F8_2		1	7	10.2725		0.0014
8	F7_8		1	8	5.7507		0.0165
9		F7_8	1	7		0.0015	0.9691

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-5.0574	0.6780	55.6389	<.0001
F2_1	1	2.0960	0.7746	7.3220	0.0068
F3_1	1	3.6186	0.9479	14.5741	0.0001
F3_2	1	3.2927	0.7031	21.9326	<.0001
F5_2	1	1.9020	0.4813	15.6190	<.0001
F6_1	1	2.9526	0.5003	34.8249	<.0001
F8_2	1	2.6589	0.8388	10.0469	0.0015
F9_1	1	2.0182	0.6434	9.8385	0.0017

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
F2_1	8.133	1.782	37.118
F3_1	37.284	5.817	238.967
F3_2	26.915	6.785	106.771
F5_2	6.699	2.608	17.207
F6_1	19.156	7.185	51.074
F8_2	14.280	2.759	73.918
F9_1	7.525	2.132	26.558

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	98.4	**Somers' D**	0.977
Percent Discordant	0.7	**Gamma**	0.985
Percent Tied	0.8	**Tau-a**	0.445
Pairs	106116	**c**	0.989

The LOGISTIC Procedure

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

Number of Observations Read	683
Number of Observations Used	683

Response Profile		
Ordered Value	**dia**	**Total Frequency**
1	1	444
2	0	239

Probability modeled is dia=1.

Stepwise Selection Procedure

Step 0. Intercept entered:

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

-2 Log L	=	884.350

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
613.7520	80	<.0001

Step 1. Effect F6_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	415.515
SC	890.877	424.568
-2 Log L	884.350	411.515

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	472.8349	1	<.0001
Score	419.7745	1	<.0001
Wald	233.7847	1	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
364.0598	79	<.0001

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

Step 2. Effect F2_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	261.087
SC	890.877	274.666
-2 Log L	884.350	255.087

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	629.2633	2	<.0001
Score	492.6166	2	<.0001
Wald	160.5861	2	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
192.3751	78	<.0001

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

Step 3. Effect F5_2 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	214.813
SC	890.877	232.919
-2 Log L	884.350	206.813

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	677.5377	3	<.0001
Score	512.1493	3	<.0001
Wald	125.6490	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
135.2679	77	<.0001

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

Step 4. Effect F3_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	200.136
SC	890.877	222.768
-2 Log L	884.350	190.136

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	694.2143	4	<.0001
Score	522.3696	4	<.0001
Wald	128.3854	4	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
133.0642	76	<.0001

Note: No effects for the model in Step 4 are removed.

Step 5. Effect F3_1 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	181.575
SC	890.877	208.734
-2 Log L	884.350	169.575

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	714.7756	5	<.0001
Score	546.7484	5	<.0001
Wald	121.3154	5	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
120.6107	75	0.0007

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

Step 6. Effect F9_1 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	171.134
SC	890.877	202.819
-2 Log L	884.350	157.134

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	727.2164	6	<.0001
Score	553.0894	6	<.0001
Wald	109.7584	6	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
110.2169	74	0.0040

Note: No effects for the model in Step 6 are removed.

Step 7. Effect F8_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	163.870
SC	890.877	200.081
-2 Log L	884.350	147.870

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	736.4807	7	<.0001
Score	555.5535	7	<.0001
Wald	102.8828	7	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
98.6449	73	0.0245

Note: No effects for the model in Step 7 are removed.

Step 8. Effect F7_8 entered:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	157.019
SC	890.877	197.757
-2 Log L	884.350	139.019

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	745.3313	8	<.0001
Score	557.9242	8	<.0001
Wald	98.3595	8	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
97.9740	72	0.0226

Step 9. Effect F7_8 is removed:

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

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	163.870
SC	890.877	200.081
-2 Log L	884.350	147.870

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	736.4807	7	<.0001
Score	555.5535	7	<.0001
Wald	102.8828	7	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
98.6449	73	0.0245

Note: No effects for the model in Step 9 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	F6_1		1	1	419.7745		<.0001
2	F2_1		1	2	201.5457		<.0001
3	F5_2		1	3	55.2801		<.0001
4	F3_2		1	4	15.6623		<.0001
5	F3_1		1	5	19.1660		<.0001
6	F9_1		1	6	11.2517		0.0008
7	F8_2		1	7	10.2725		0.0014
8	F7_8		1	8	5.7507		0.0165
9		F7_8	1	7		0.0015	0.9691

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-5.0574	0.6780	55.6389	<.0001
F2_1	1	2.0960	0.7746	7.3220	0.0068
F3_1	1	3.6186	0.9479	14.5741	0.0001
F3_2	1	3.2927	0.7031	21.9326	<.0001
F5_2	1	1.9020	0.4813	15.6190	<.0001
F6_1	1	2.9526	0.5003	34.8249	<.0001
F8_2	1	2.6589	0.8388	10.0469	0.0015
F9_1	1	2.0182	0.6434	9.8385	0.0017

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
F2_1	8.133	1.782	37.118
F3_1	37.284	5.817	238.967
F3_2	26.915	6.785	106.771
F5_2	6.699	2.608	17.207
F6_1	19.156	7.185	51.074
F8_2	14.280	2.759	73.918
F9_1	7.525	2.132	26.558

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	98.4	**Somers' D**	0.977
Percent Discordant	0.7	**Gamma**	0.985
Percent Tied	0.8	**Tau-a**	0.445
Pairs	106116	**c**	0.989

The LOGISTIC Procedure

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

Number of Observations Read	683
Number of Observations Used	683

Response Profile		
Ordered Value	**dia**	**Total Frequency**
1	1	444
2	0	239

Probability modeled is dia=1.

Stepwise Selection Procedure

Step 0. Intercept entered:

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

-2 Log L	=	884.350

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
613.7520	80	<.0001

Step 1. Effect F6_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	415.515
SC	890.877	424.568
-2 Log L	884.350	411.515

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	472.8349	1	<.0001
Score	419.7745	1	<.0001
Wald	233.7847	1	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
364.0598	79	<.0001

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

Step 2. Effect F2_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	261.087
SC	890.877	274.666
-2 Log L	884.350	255.087

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	629.2633	2	<.0001
Score	492.6166	2	<.0001
Wald	160.5861	2	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
192.3751	78	<.0001

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

Step 3. Effect F5_2 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	214.813
SC	890.877	232.919
-2 Log L	884.350	206.813

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	677.5377	3	<.0001
Score	512.1493	3	<.0001
Wald	125.6490	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
135.2679	77	<.0001

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

Step 4. Effect F3_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	200.136
SC	890.877	222.768
-2 Log L	884.350	190.136

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	694.2143	4	<.0001
Score	522.3696	4	<.0001
Wald	128.3854	4	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
133.0642	76	<.0001

Note: No effects for the model in Step 4 are removed.

Step 5. Effect F3_1 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	181.575
SC	890.877	208.734
-2 Log L	884.350	169.575

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	714.7756	5	<.0001
Score	546.7484	5	<.0001
Wald	121.3154	5	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
120.6107	75	0.0007

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

Step 6. Effect F9_1 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	171.134
SC	890.877	202.819
-2 Log L	884.350	157.134

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	727.2164	6	<.0001
Score	553.0894	6	<.0001
Wald	109.7584	6	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
110.2169	74	0.0040

Note: No effects for the model in Step 6 are removed.

Step 7. Effect F8_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	163.870
SC	890.877	200.081
-2 Log L	884.350	147.870

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	736.4807	7	<.0001
Score	555.5535	7	<.0001
Wald	102.8828	7	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
98.6449	73	0.0245

Note: No effects for the model in Step 7 are removed.

Step 8. Effect F7_8 entered:

Model Convergence Status
Quasi-complete separation of data points detected.

Warning: The maximum likelihood estimate may not exist.

Warning: The LOGISTIC procedure continues in spite of the above warning. Results shown are based on the last maximum likelihood iteration. Validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	157.019
SC	890.877	197.757
-2 Log L	884.350	139.019

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	745.3313	8	<.0001
Score	557.9242	8	<.0001
Wald	98.3595	8	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
97.9740	72	0.0226

Step 9. Effect F7_8 is removed:

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

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	163.870
SC	890.877	200.081
-2 Log L	884.350	147.870

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	736.4807	7	<.0001
Score	555.5535	7	<.0001
Wald	102.8828	7	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
98.6449	73	0.0245

Note: No effects for the model in Step 9 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	F6_1		1	1	419.7745		<.0001
2	F2_1		1	2	201.5457		<.0001
3	F5_2		1	3	55.2801		<.0001
4	F3_2		1	4	15.6623		<.0001
5	F3_1		1	5	19.1660		<.0001
6	F9_1		1	6	11.2517		0.0008
7	F8_2		1	7	10.2725		0.0014
8	F7_8		1	8	5.7507		0.0165
9		F7_8	1	7		0.0015	0.9691

The LOGISTIC Procedure

Warning: The validity of the model fit is questionable.

Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	-5.0574	0.6780	55.6389	<.0001
F2_1	1	2.0960	0.7746	7.3220	0.0068
F3_1	1	3.6186	0.9479	14.5741	0.0001
F3_2	1	3.2927	0.7031	21.9326	<.0001
F5_2	1	1.9020	0.4813	15.6190	<.0001
F6_1	1	2.9526	0.5003	34.8249	<.0001
F8_2	1	2.6589	0.8388	10.0469	0.0015
F9_1	1	2.0182	0.6434	9.8385	0.0017

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
F2_1	8.133	1.782	37.118
F3_1	37.284	5.817	238.967
F3_2	26.915	6.785	106.771
F5_2	6.699	2.608	17.207
F6_1	19.156	7.185	51.074
F8_2	14.280	2.759	73.918
F9_1	7.525	2.132	26.558

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	98.4	**Somers' D**	0.977
Percent Discordant	0.7	**Gamma**	0.985
Percent Tied	0.8	**Tau-a**	0.445
Pairs	106116	**c**	0.989

The LOGISTIC Procedure

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

Number of Observations Read	683
Number of Observations Used	683

Response Profile		
Ordered Value	**dia**	**Total Frequency**
1	1	444
2	0	239

Probability modeled is dia=1.

Stepwise Selection Procedure

Step 0. Intercept entered:

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

-2 Log L	=	884.350

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
573.6550	18	<.0001

Step 1. Effect F6_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	415.515
SC	890.877	424.568
-2 Log L	884.350	411.515

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	472.8349	1	<.0001
Score	419.7745	1	<.0001
Wald	233.7847	1	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
277.1374	17	<.0001

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

Step 2. Effect F2_1 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	261.087
SC	890.877	274.666
-2 Log L	884.350	255.087

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	629.2633	2	<.0001
Score	492.6166	2	<.0001
Wald	160.5861	2	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
114.3454	16	<.0001

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

Step 3. Effect F2_2 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	233.124
SC	890.877	251.230
-2 Log L	884.350	225.124

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	659.2259	3	<.0001
Score	528.3888	3	<.0001
Wald	158.6077	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
78.6525	15	<.0001

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

Step 4. Effect F2_3 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	200.037
SC	890.877	222.669
-2 Log L	884.350	190.037

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	694.3135	4	<.0001
Score	555.1314	4	<.0001
Wald	148.9681	4	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
49.5260	14	<.0001

Note: No effects for the model in Step 4 are removed.

Step 5. Effect F2_4 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	186.527
SC	890.877	213.686
-2 Log L	884.350	174.527

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	709.8232	5	<.0001
Score	559.3557	5	<.0001
Wald	130.4806	5	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
49.6723	13	<.0001

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

Step 6. Effect F2_9 entered:

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

The LOGISTIC Procedure

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	183.817
SC	890.877	215.502
-2 Log L	884.350	169.817

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	714.5334	6	<.0001
Score	560.1065	6	<.0001
Wald	122.8182	6	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
33.2333	12	0.0009

Note: No effects for the model in Step 6 are removed.

Step 7. Effect F6_2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	175.044
SC	890.877	211.256
-2 Log L	884.350	159.044

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	725.3060	7	<.0001
Score	567.0027	7	<.0001
Wald	123.9874	7	<.0001

The LOGISTIC Procedure

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
23.7415	11	0.0139

Note: No effects for the model in Step 7 are removed.

Step 8. Effect F6_3 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	886.350	170.495
SC	890.877	211.234
-2 Log L	884.350	152.495

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	731.8547	8	<.0001
Score	570.0110	8	<.0001
Wald	120.0147	8	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
18.1965	10	0.0517

Note: No effects for the model in Step 8 are removed.

Note: No (additional) effects met the 0.05 significance level for entry into the model.

Summary of Stepwise Selection							
Step	Effect		DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq
	Entered	Removed					
1	F6_1		1	1	419.7745		<.0001
2	F2_1		1	2	201.5457		<.0001
3	F2_2		1	3	31.9461		<.0001
4	F2_3		1	4	39.8666		<.0001
5	F2_4		1	5	18.5234		<.0001

The LOGISTIC Procedure

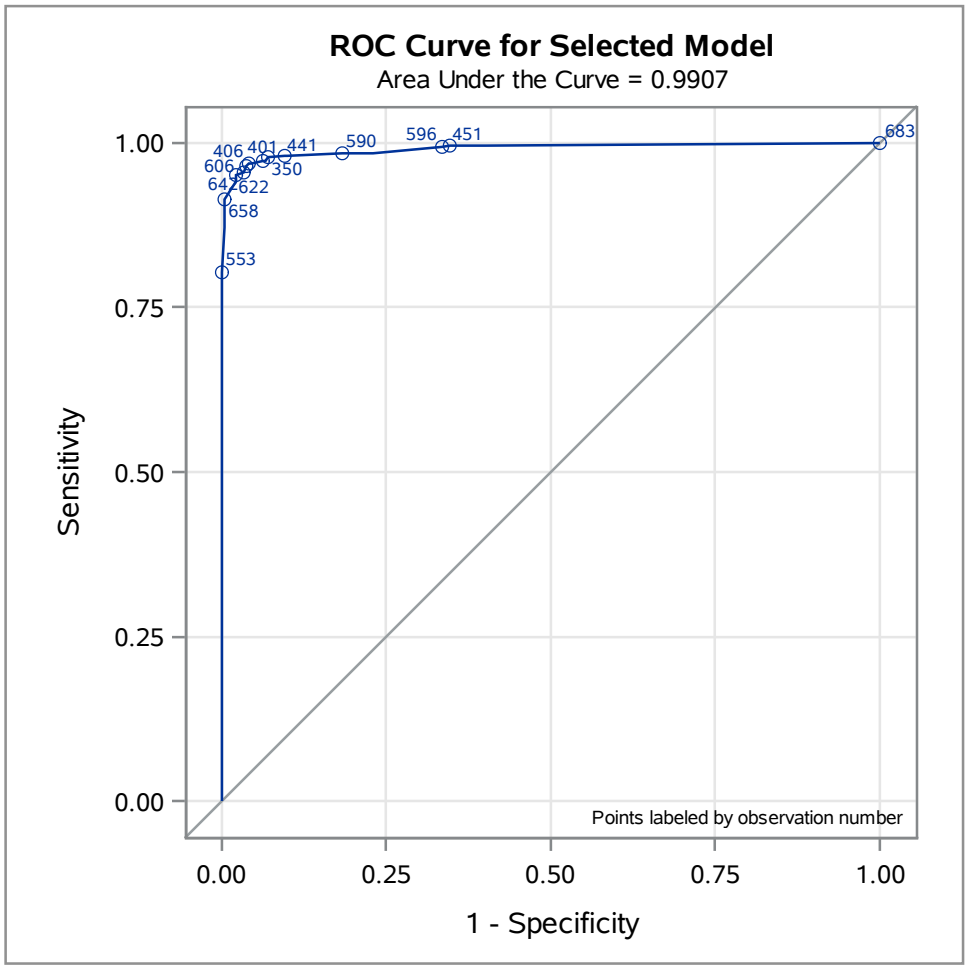
Summary of Stepwise Selection							
Step	Effect		DF	Number In	Score Chi-Square	Wald Chi-Square	Pr > ChiSq
	Entered	Removed					
6	F2_9		1	6	18.8249		<.0001
7	F6_2		1	7	10.5946		0.0011
8	F6_3		1	8	6.8909		0.0087

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-5.9361	0.8337	50.7011	<.0001
F2_1	1	7.6647	0.9251	68.6407	<.0001
F2_2	1	5.0282	0.9052	30.8530	<.0001
F2_3	1	4.2279	0.8540	24.5123	<.0001
F2_4	1	3.5246	0.9289	14.3966	0.0001
F2_9	1	3.2541	1.4595	4.9708	0.0258
F6_1	1	3.9398	0.5423	52.7722	<.0001
F6_2	1	2.6050	0.7406	12.3717	0.0004
F6_3	1	1.6517	0.6479	6.4992	0.0108

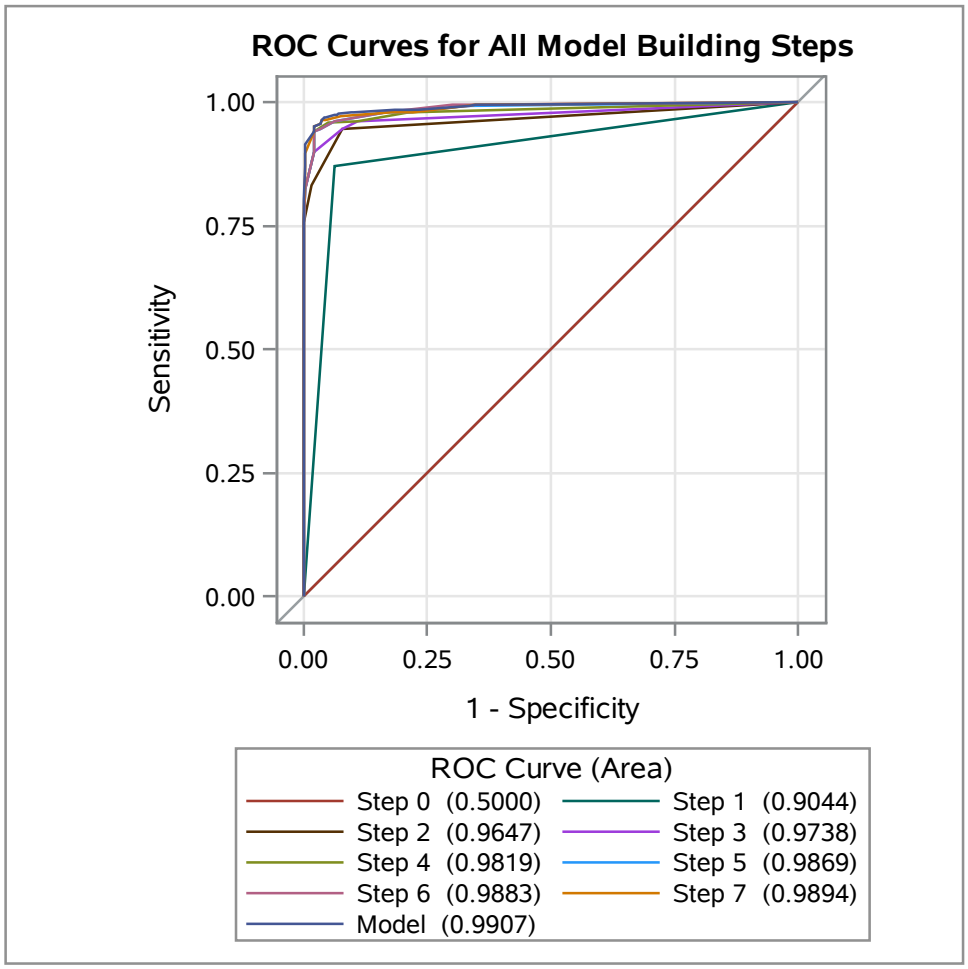
Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
F2_1	>999.999	347.755	>999.999
F2_2	152.652	25.892	899.988
F2_3	68.574	12.861	365.635
F2_4	33.940	5.496	209.613
F2_9	25.896	1.482	452.475
F6_1	51.408	17.758	148.822
F6_2	13.532	3.169	57.778
F6_3	5.216	1.465	18.571

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	98.8	Somers' D	0.981
Percent Discordant	0.7	Gamma	0.986
Percent Tied	0.5	Tau-a	0.447
Pairs	106116	c	0.991

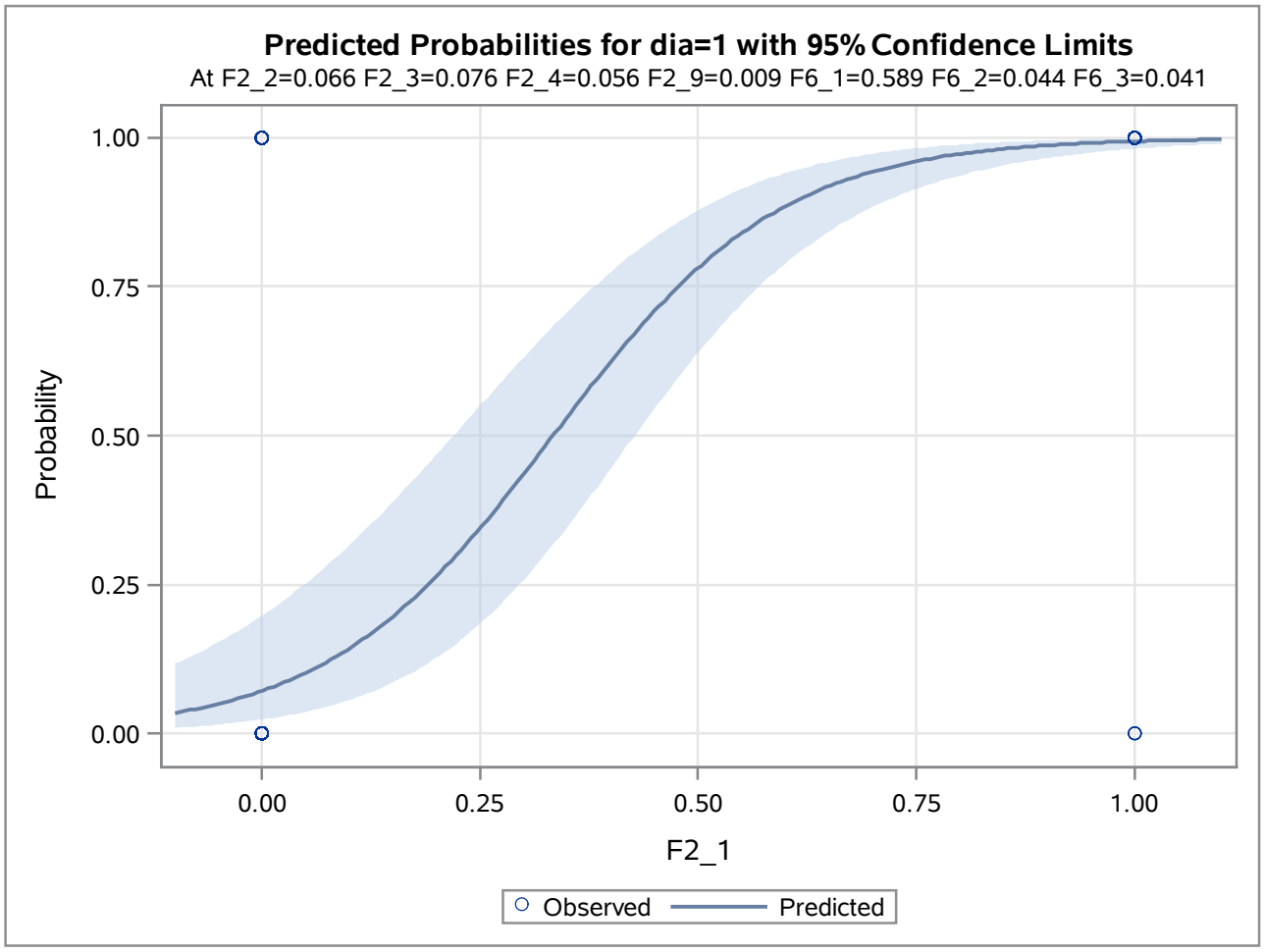
The LOGISTIC Procedure



The LOGISTIC Procedure



The LOGISTIC Procedure



The LOGISTIC Procedure

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

Number of Observations Read	683
Number of Observations Used	683

Response Profile		
Ordered Value	**dia**	**Total Frequency**
1	1	444
2	0	239

Probability modeled is dia=1.

Stepwise Selection Procedure

Step 0. Intercept entered:

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

-2 Log L	=	884.350

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
545.2633	2	<.0001

Step 1. Effect F6 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	344.628
SC	890.877	353.681
-2 Log L	884.350	340.628

The LOGISTIC Procedure

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	543.7224	1	<.0001
Score	462.2739	1	<.0001
Wald	146.8161	1	<.0001

Residual Chi-Square Test		
Chi-Square	**DF**	**Pr > ChiSq**
180.3313	1	<.0001

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

Step 2. Effect F2 entered:

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	886.350	172.312
SC	890.877	185.891
-2 Log L	884.350	166.312

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	718.0382	2	<.0001
Score	545.2633	2	<.0001
Wald	129.5343	2	<.0001

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

Note: All effects have been entered into the model.

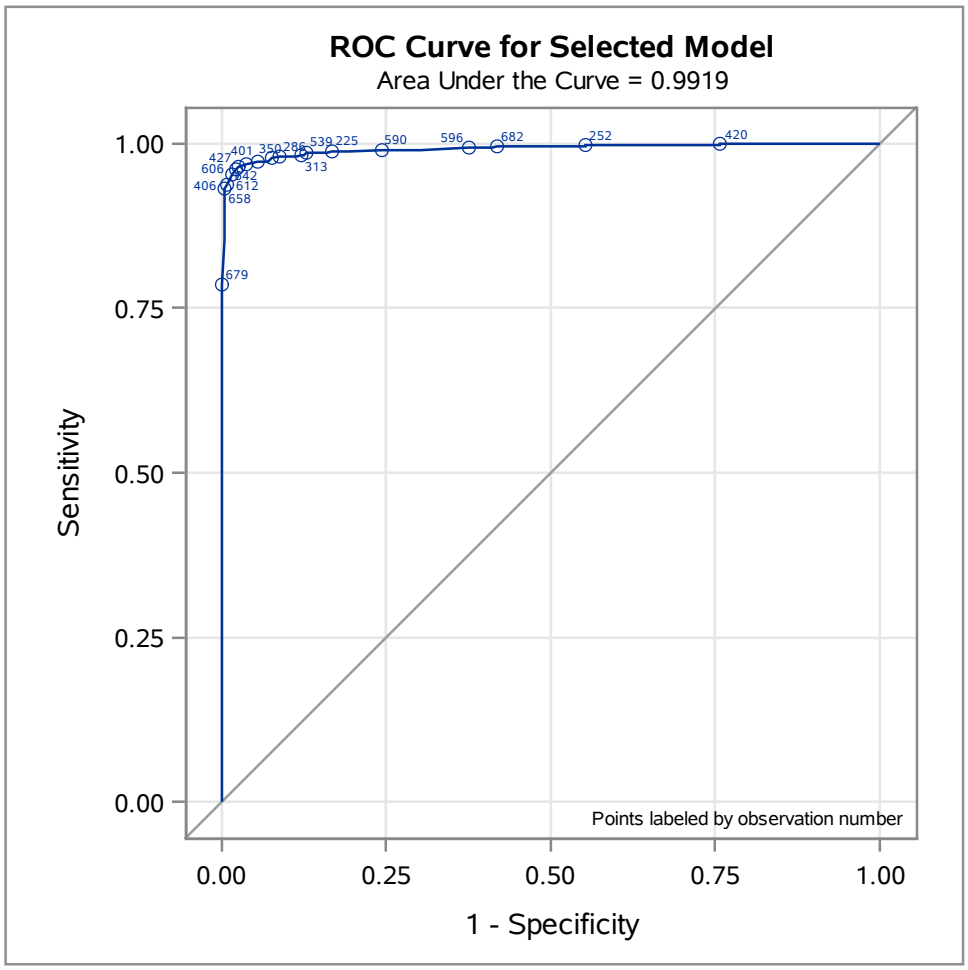
Summary of Stepwise Selection							
	Effect						
Step	**Entered**	**Removed**	**DF**	**Number In**	**Score Chi-Square**	**Wald Chi-Square**	**Pr > ChiSq**
1	**F6**		1	1	462.2739		<.0001
2	**F2**		1	2	180.3313		<.0001

The LOGISTIC Procedure

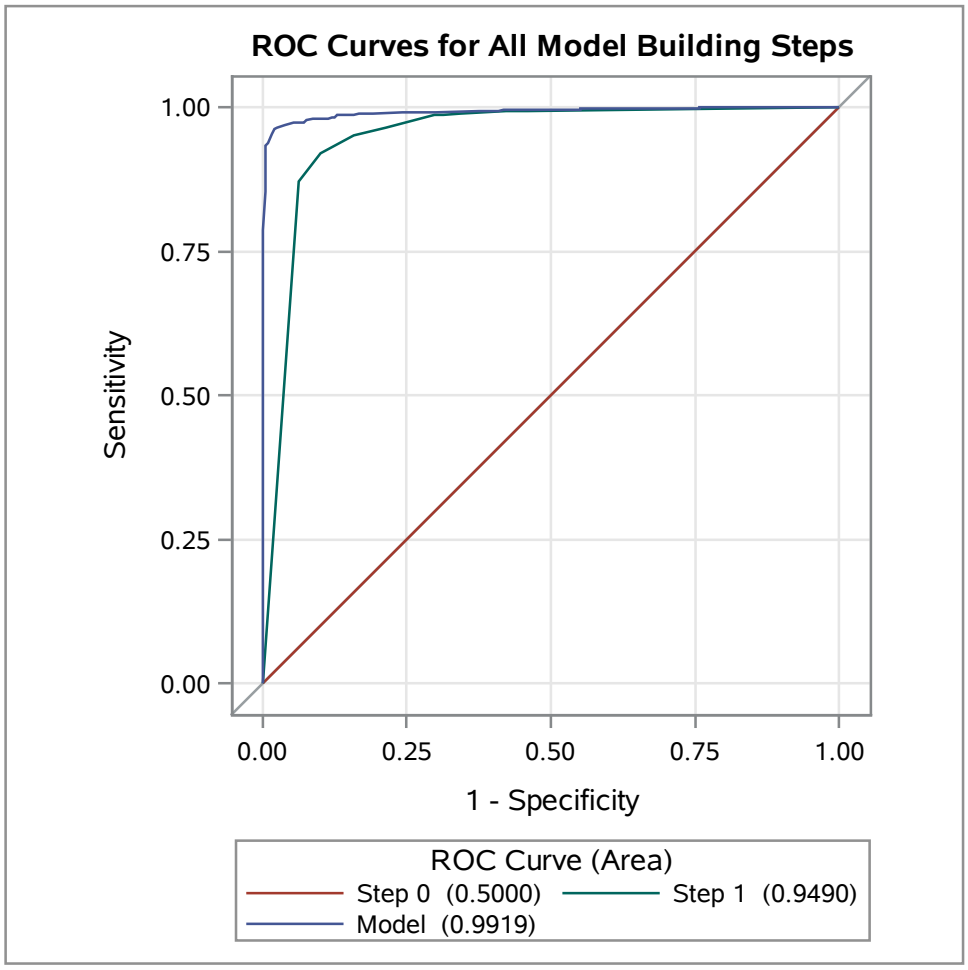
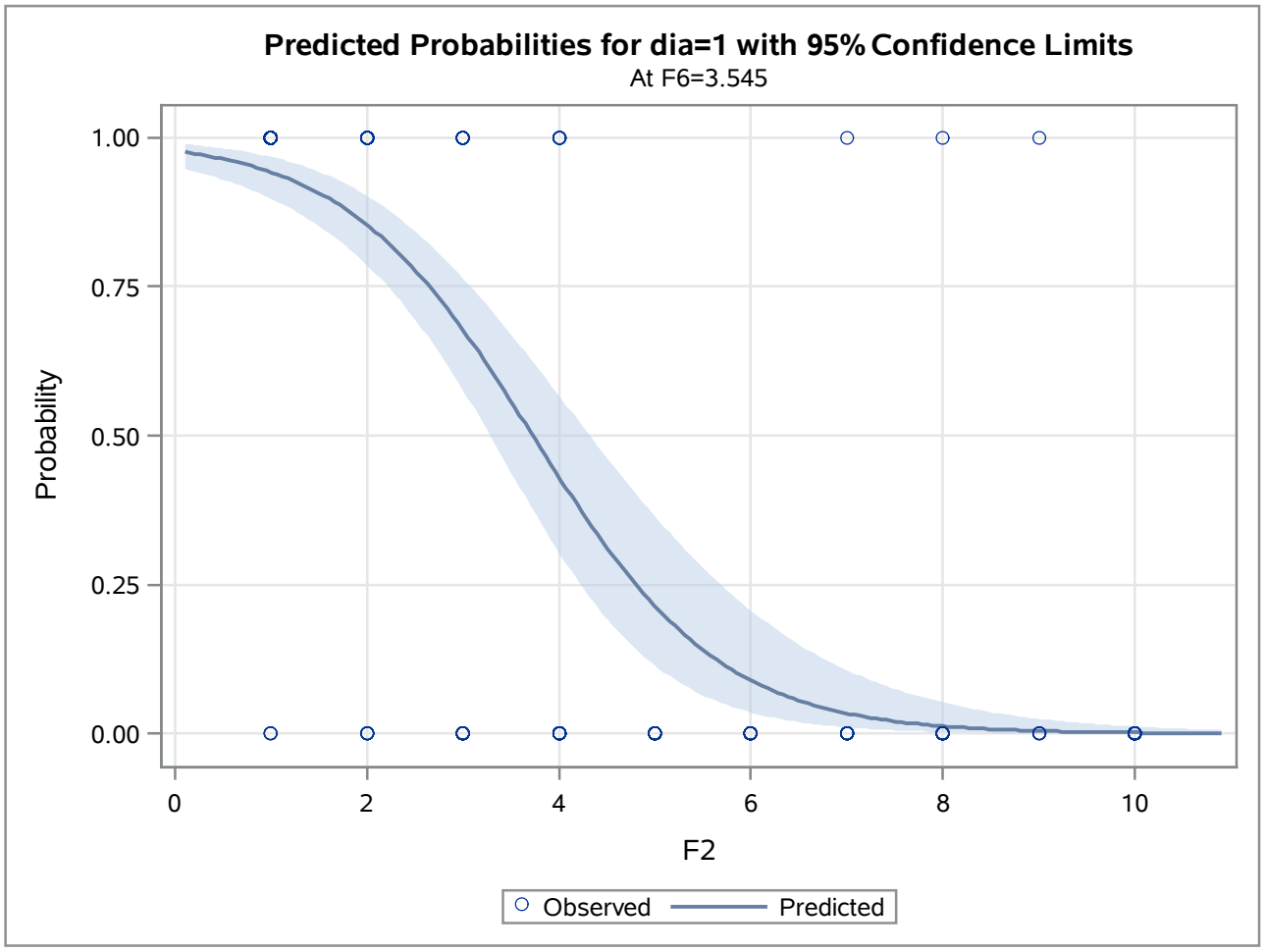
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	5.8720	0.4711	155.3566	<.0001
F2	1	-1.0227	0.1351	57.3081	<.0001
F6	1	-0.5814	0.0767	57.3983	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
F2	0.360	0.276	0.469
F6	0.559	0.481	0.650

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	99.1	Somers' D	0.984
Percent Discordant	0.8	Gamma	0.985
Percent Tied	0.1	Tau-a	0.448
Pairs	106116	c	0.992



The LOGISTIC Procedure



The LOGISTIC Procedure