The CONTENTS Procedure

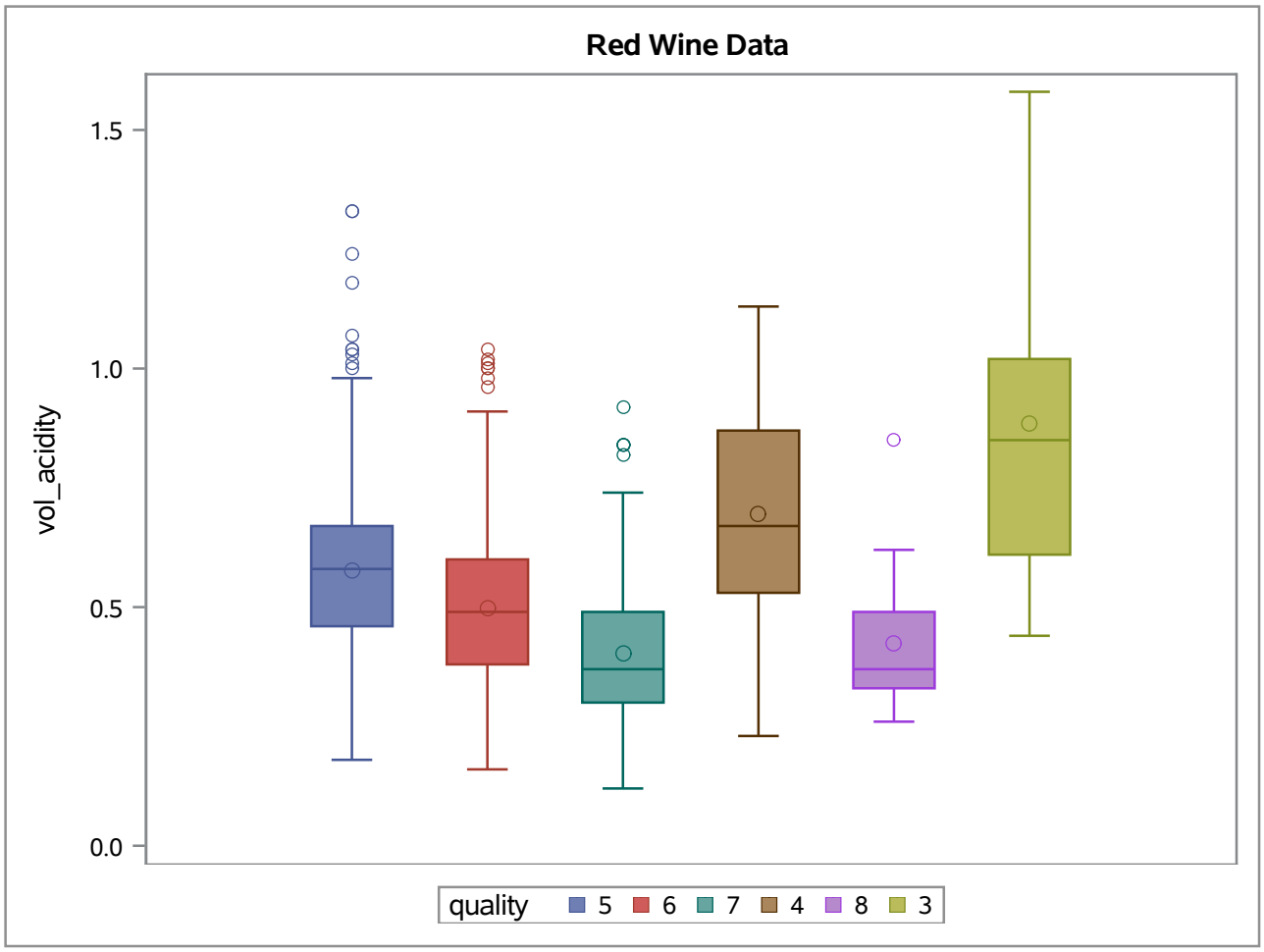
Alphabetic List of Variables for WORK.WINES_RED
alcohol chlorides citric_acid density fix_acidity free_sulfur id pH quality r_quality sugar sulphates total_sulfur vol_acidity

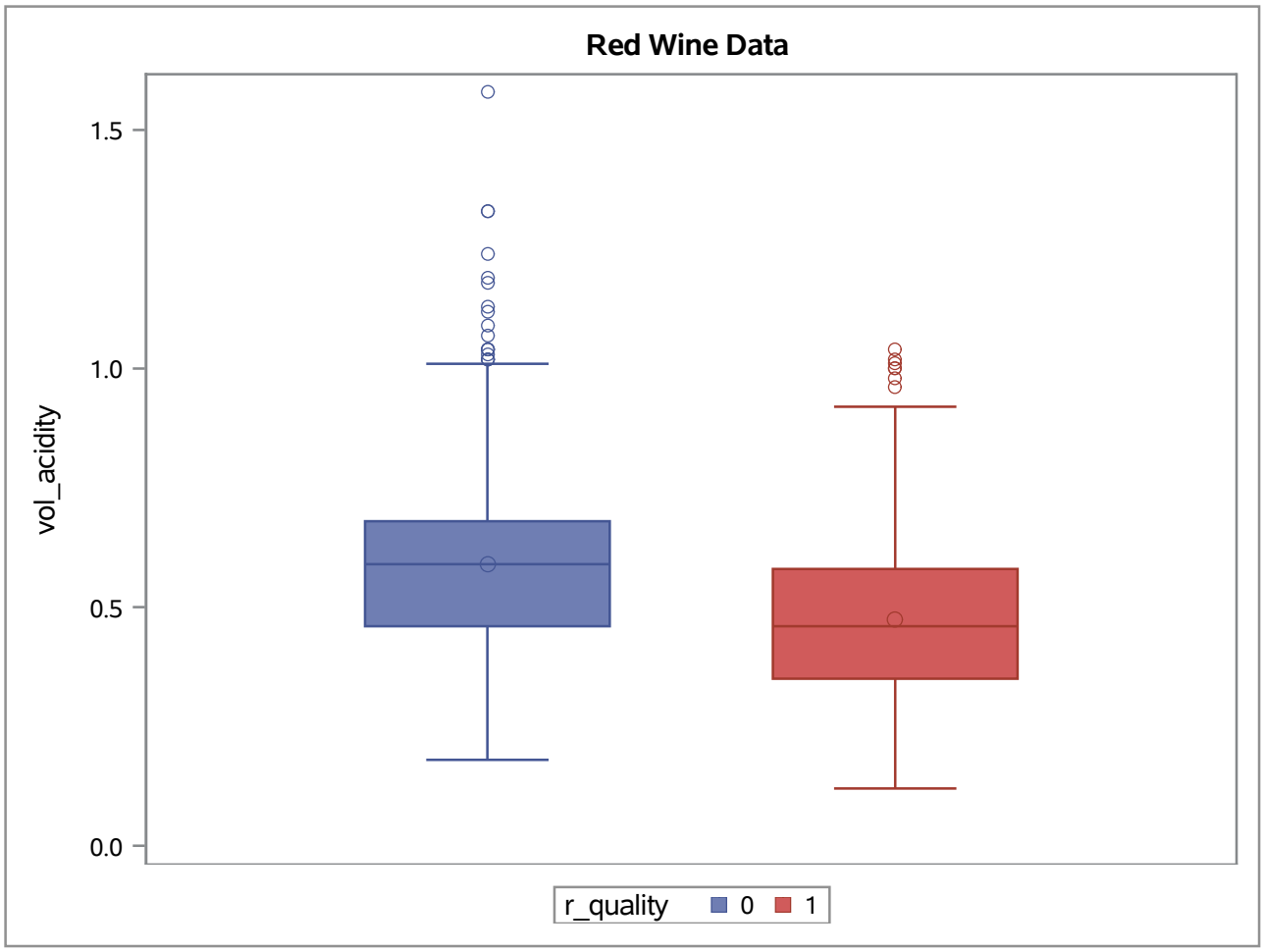
The MEANS Procedure

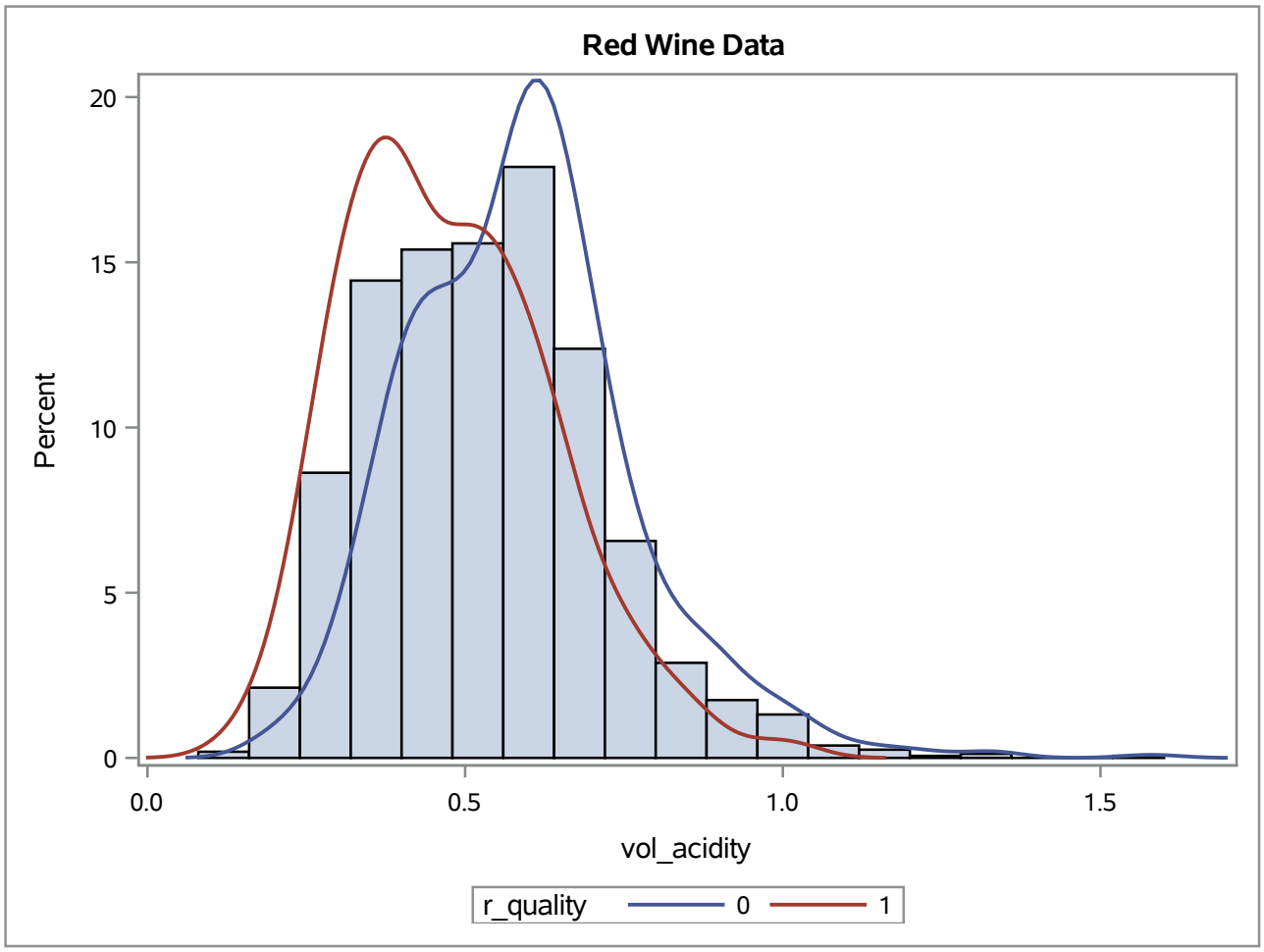
Variable	Lower Quartile	Median	Upper Quartile
quality	5.0000000	6.0000000	6.0000000
alcohol	9.5000000	10.2000000	11.1000000
chlorides	0.0700000	0.0800000	0.0900000
citric_acid	0.0900000	0.2600000	0.4200000
density	1.0000000	1.0000000	1.0000000
fix_acidity	7.1000000	7.9000000	9.2000000
free_sulfur	7.0000000	14.0000000	21.0000000
pH	3.2100000	3.3100000	3.4000000
sugar	1.9000000	2.2000000	2.6000000
sulphates	0.5500000	0.6200000	0.7300000
total_sulfur	22.0000000	38.0000000	62.0000000
vol_acidity	0.3900000	0.5200000	0.6400000

The FREQ Procedure

r_quality	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	744	46.53	744	46.53
1	855	53.47	1599	100.00


Red Wine Data
vol_acidity
1.5
1.0
0.5
0.0
quality
5
6
7
4
8
3


Red Wine Data
vol_acidity
1.5
1.0
0.5
0.0
r_quality
0
1


Red Wine Data
Percent
20
15
10
5
0
0.0
0.5
1.0
1.5
vol_acidity
r_quality
0
1

Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure

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

Number of Observations Read	1599
Number of Observations Used	1599

Response Profile		
Ordered Value	**r_quality**	**Total Frequency**
1	1	855
2	0	744

Probability modeled is r_quality=1.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	2210.973	2002.899
SC	2216.350	2019.030
-2 Log L	2208.973	1996.899

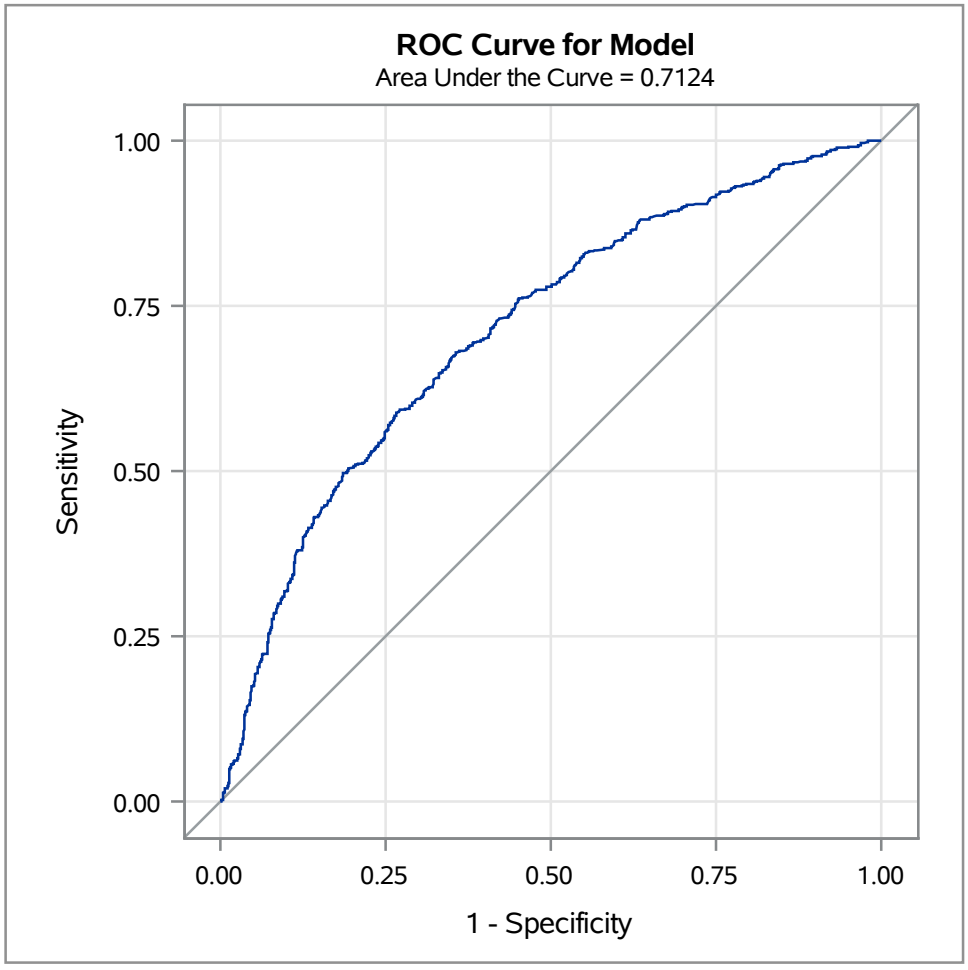
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	212.0743	2	<.0001
Score	196.1429	2	<.0001
Wald	172.1472	2	<.0001

Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure

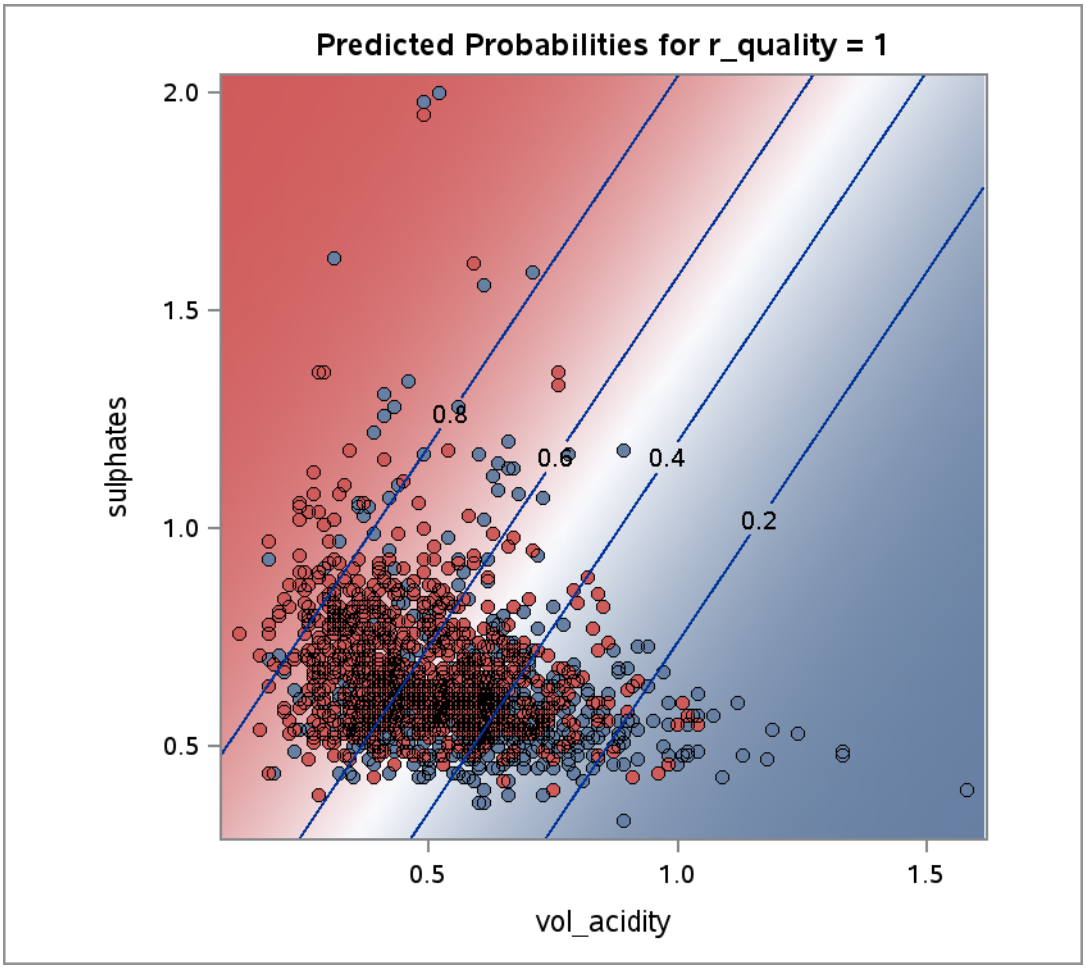
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	0.6661	0.3337	3.9850	0.0459
vol_acidity	1	-3.6235	0.3431	111.5671	<.0001
sulphates	1	2.1310	0.3762	32.0837	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
vol_acidity	0.027	0.014	0.052
sulphates	8.423	4.029	17.608



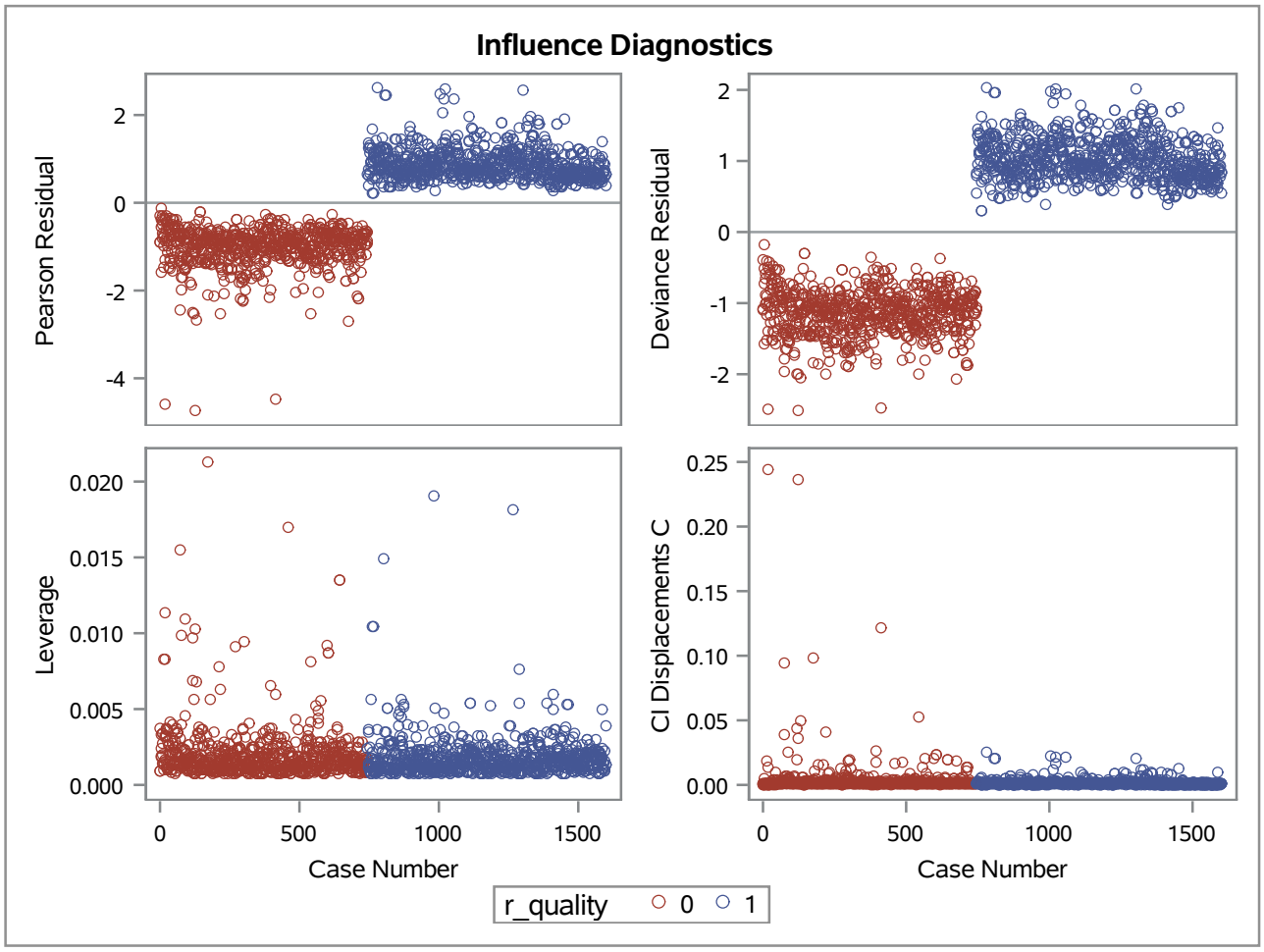
Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure



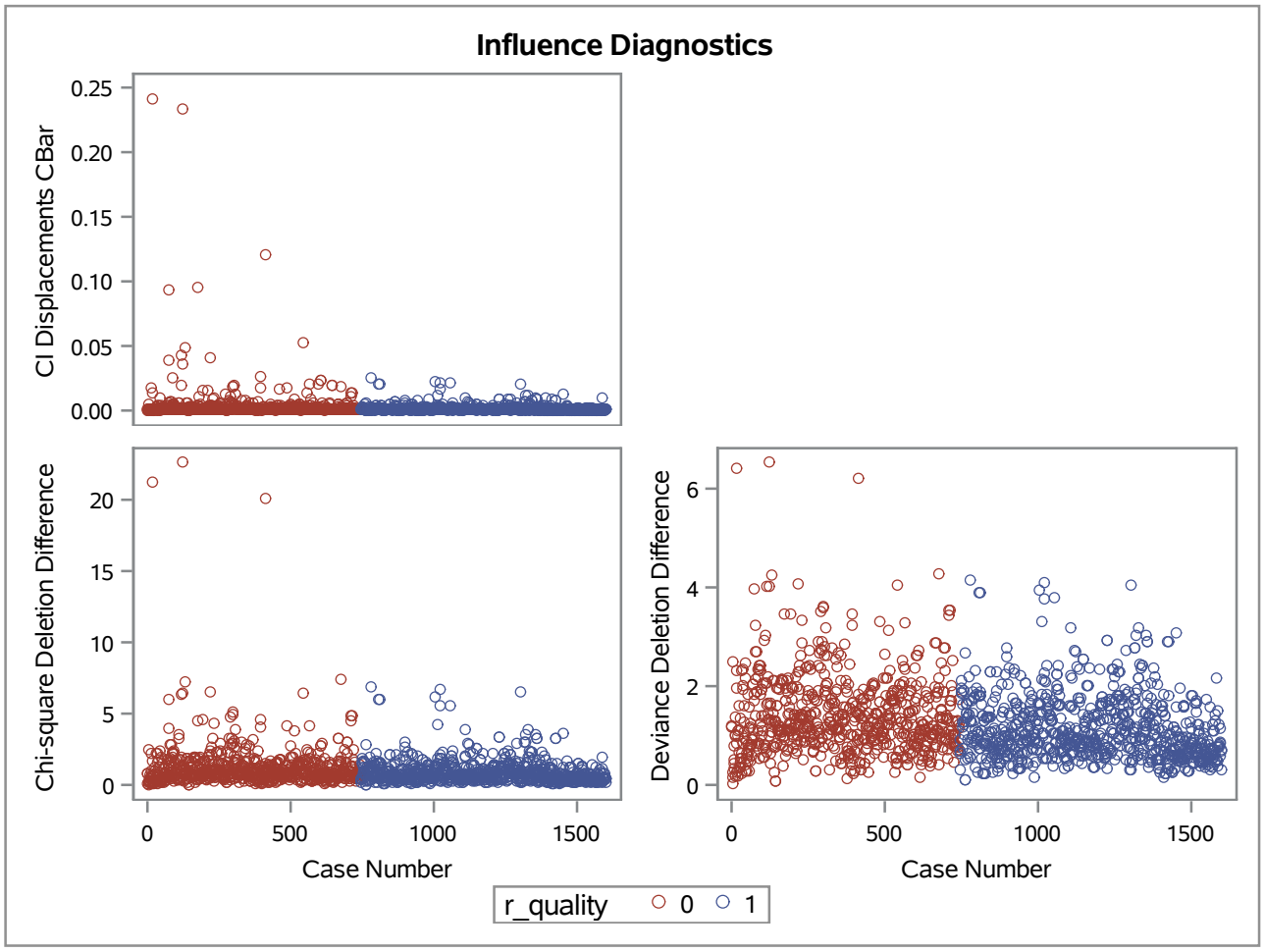
Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure



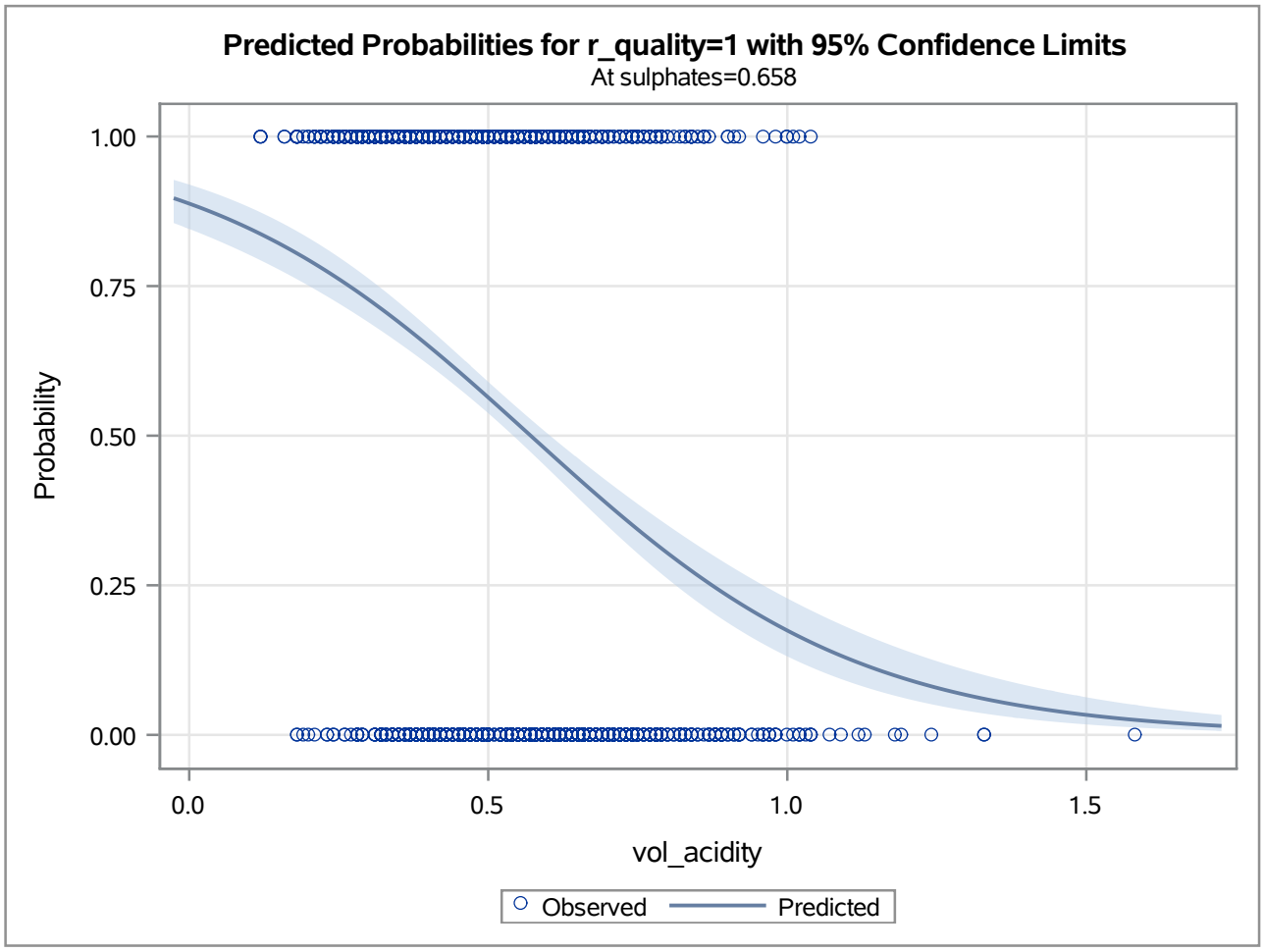
Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure



Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure



ROC Model: ROC1

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	2210.973	2002.899
SC	2216.350	2019.030
-2 Log L	2208.973	1996.899

Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure

ROC Model: ROC1

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	212.0743	2	<.0001
Score	196.1429	2	<.0001
Wald	172.1472	2	<.0001

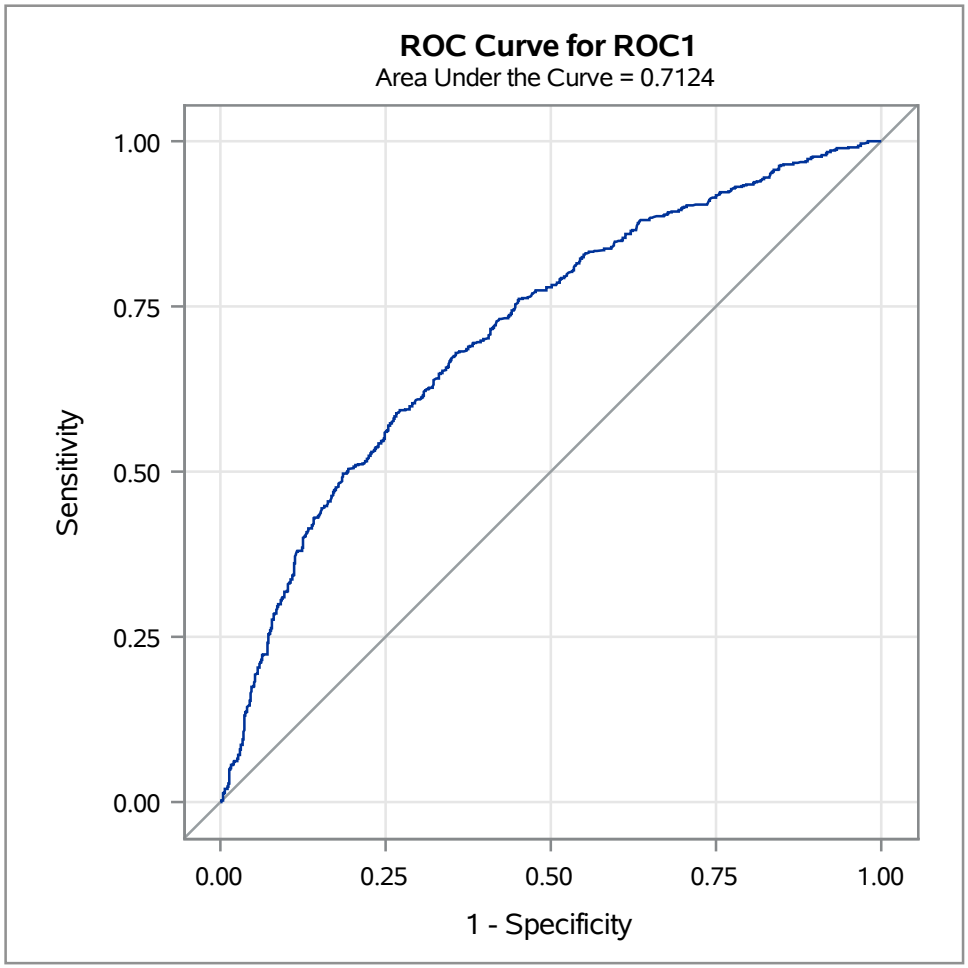
Analysis of Maximum Likelihood Estimates					
Parameter	**DF**	**Estimate**	**Standard Error**	**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	0.6661	0.3337	3.9850	0.0459
vol_acidity	1	-3.6235	0.3431	111.5671	<.0001
sulphates	1	2.1310	0.3762	32.0837	<.0001

Odds Ratio Estimates			
Effect	**Point Estimate**	**95% Wald Confidence Limits**	
vol_acidity	0.027	0.014	0.052
sulphates	8.423	4.029	17.608

Red Wine Data
Using Proc Logistic
Reduced Model

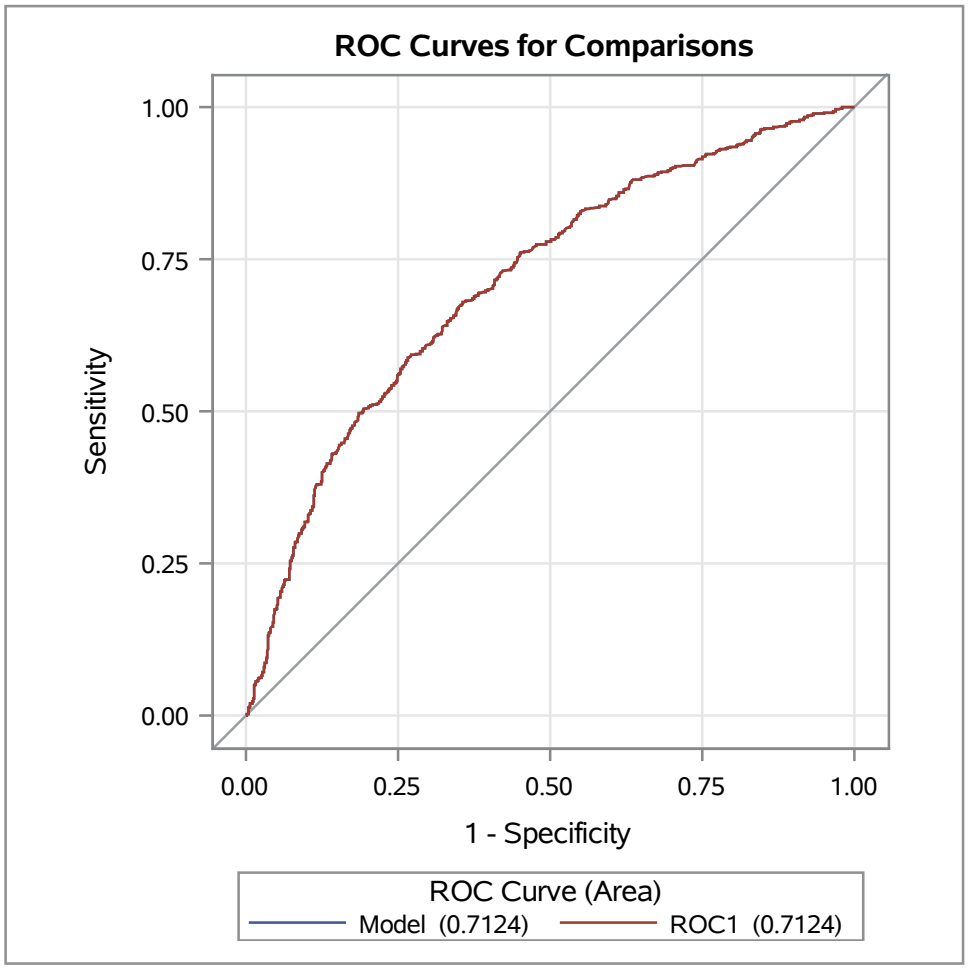
The LOGISTIC Procedure

ROC Model: ROC1



Red Wine Data
Using Proc Logistic
Reduced Model

The LOGISTIC Procedure



ROC Association Statistics							
	Mann-Whitney						
ROC Model	Area	Standard Error	95% Wald Confidence Limits		Somers' D	Gamma	Tau-a
Model	0.7124	0.0128	0.6873	0.7375	0.4248	0.4249	0.2115
ROC1	0.7124	0.0128	0.6873	0.7375	0.4248	0.4249	0.2115

Red Wine Data
Using Proc Genmod
Full Model

The GENMOD Procedure

Model Information	
Data Set	WORK.WINES_RED
Distribution	Binomial
Link Function	Logit
Dependent Variable	r_quality

Number of Observations Read	1599
Number of Observations Used	1599
Number of Events	855
Number of Trials	1599

Response Profile		
Ordered Value	**r_quality**	**Total Frequency**
1	1	855
2	0	744

PROC GENMOD is modeling the probability that r_quality='1'.

Criteria For Assessing Goodness Of Fit			
Criterion	**DF**	**Value**	**Value/DF**
Log Likelihood		-998.4494	
Full Log Likelihood		-998.4494	
AIC (smaller is better)		2002.8987	
AICC (smaller is better)		2002.9138	
BIC (smaller is better)		2019.0301	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	**DF**	**Estimate**	**Standard Error**	**Likelihood Ratio 95% Confidence Limits**		**Wald Chi-Square**	**Pr > ChiSq**
Intercept	1	0.6661	0.3337	0.0073	1.3161	3.98	0.0459
vol_acidity	1	-3.6235	0.3431	-4.3050	-2.9596	111.57	<.0001
sulphates	1	2.1311	0.3762	1.4098	2.8849	32.09	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

Note: The scale parameter was held fixed.

Red Wine Data
Using Proc Genmod
Full Model

The GENMOD Procedure

LR Statistics For Type 3 Analysis			
Source	**DF**	**Chi-Square**	**Pr > ChiSq**
vol_acidity	1	125.94	<.0001
sulphates	1	36.53	<.0001

The HPSPLIT Procedure

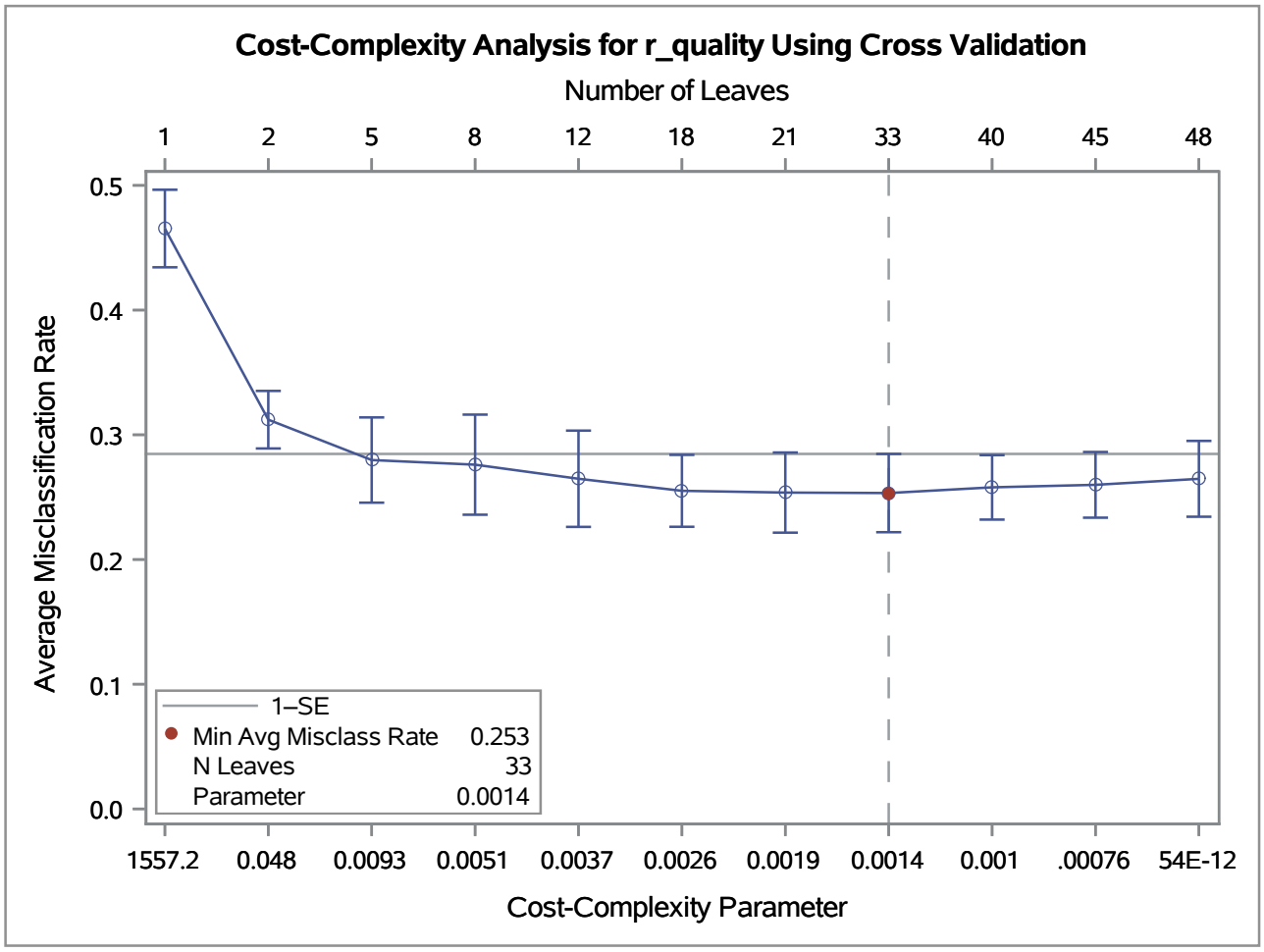
Performance Information	
Execution Mode	Single-Machine
Number of Threads	2

Data Access Information			
Data	**Engine**	**Role**	**Path**
WORK.WINES_RED	V9	Input	On Client

Model Information	
Split Criterion Used	Entropy
Pruning Method	Cost-Complexity
Subtree Evaluation Criterion	Cost-Complexity
Number of Branches	2
Maximum Tree Depth Requested	10
Maximum Tree Depth Achieved	10
Tree Depth	10
Number of Leaves Before Pruning	89
Number of Leaves After Pruning	29
Model Event Level	1

Number of Observations Read	1599
Number of Observations Used	1599

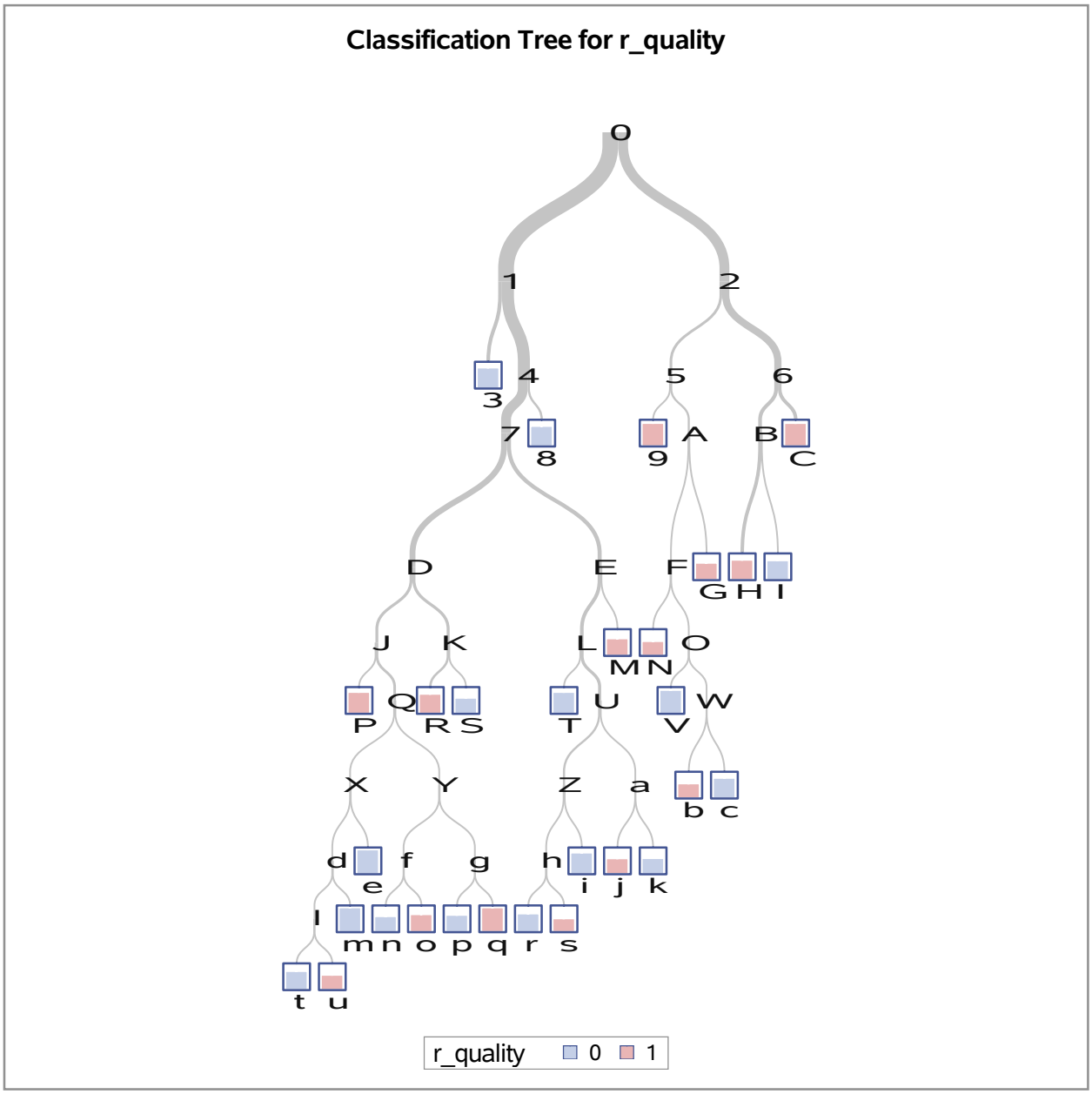
The HPSPLIT Procedure



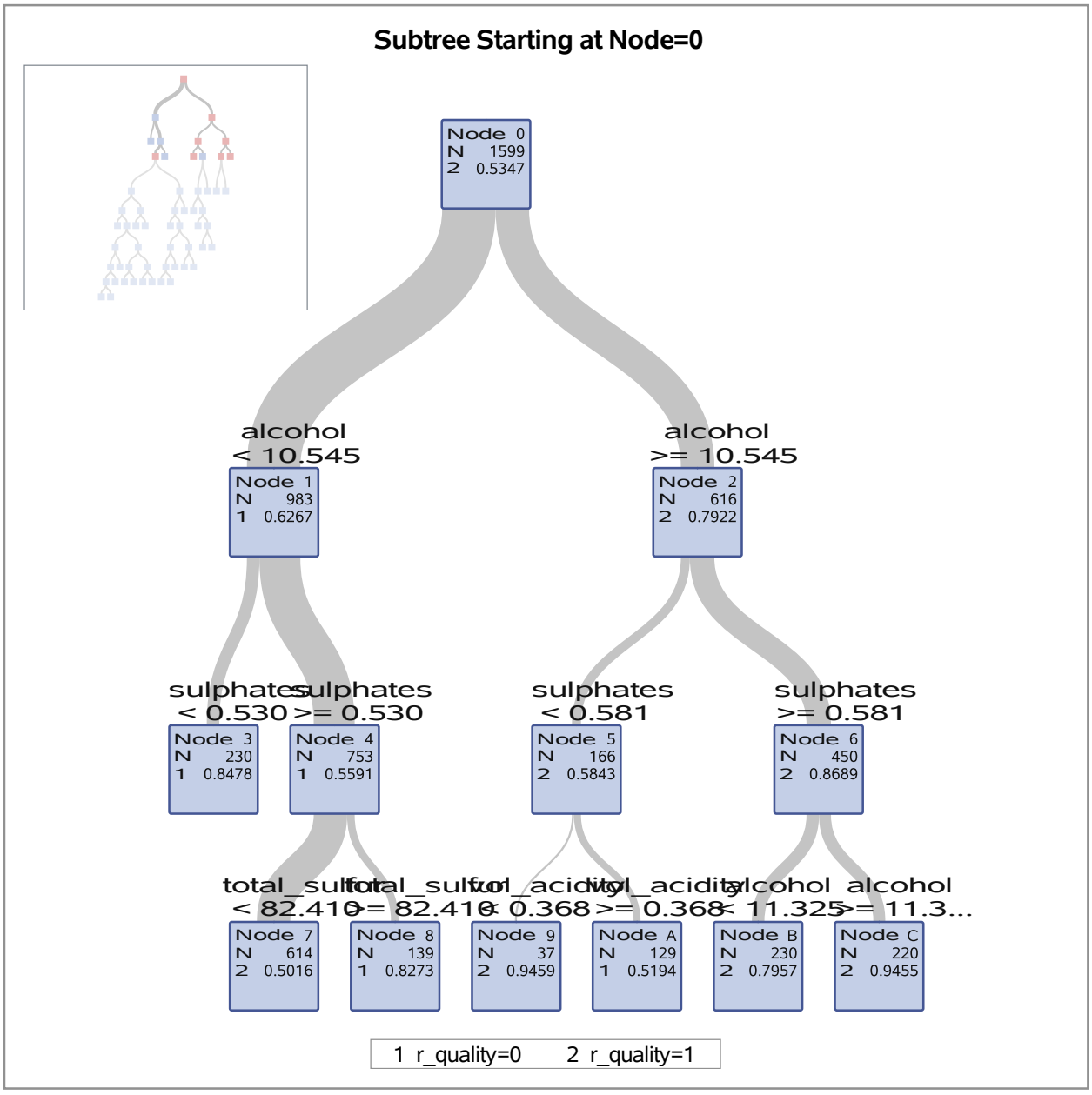
10-Fold Cross Validation Assessment of Model											
	Average Square Error				Number of Leaves			Misclassification Rate			
N Leaves	Min	Avg	Standard Error	Max	Min	Median	Max	Min	Avg	Standard Error	Max
36	0.1460	0.1842	0.0214	0.2233	24	36.5	45	0.1972	0.2553	0.0377	0.3235

10-Fold Cross Validation Confusion Matrix			
	Predicted		
Actual	0	1	Error Rate
0	537	207	0.2782
1	202	653	0.2363

The HPSPLIT Procedure



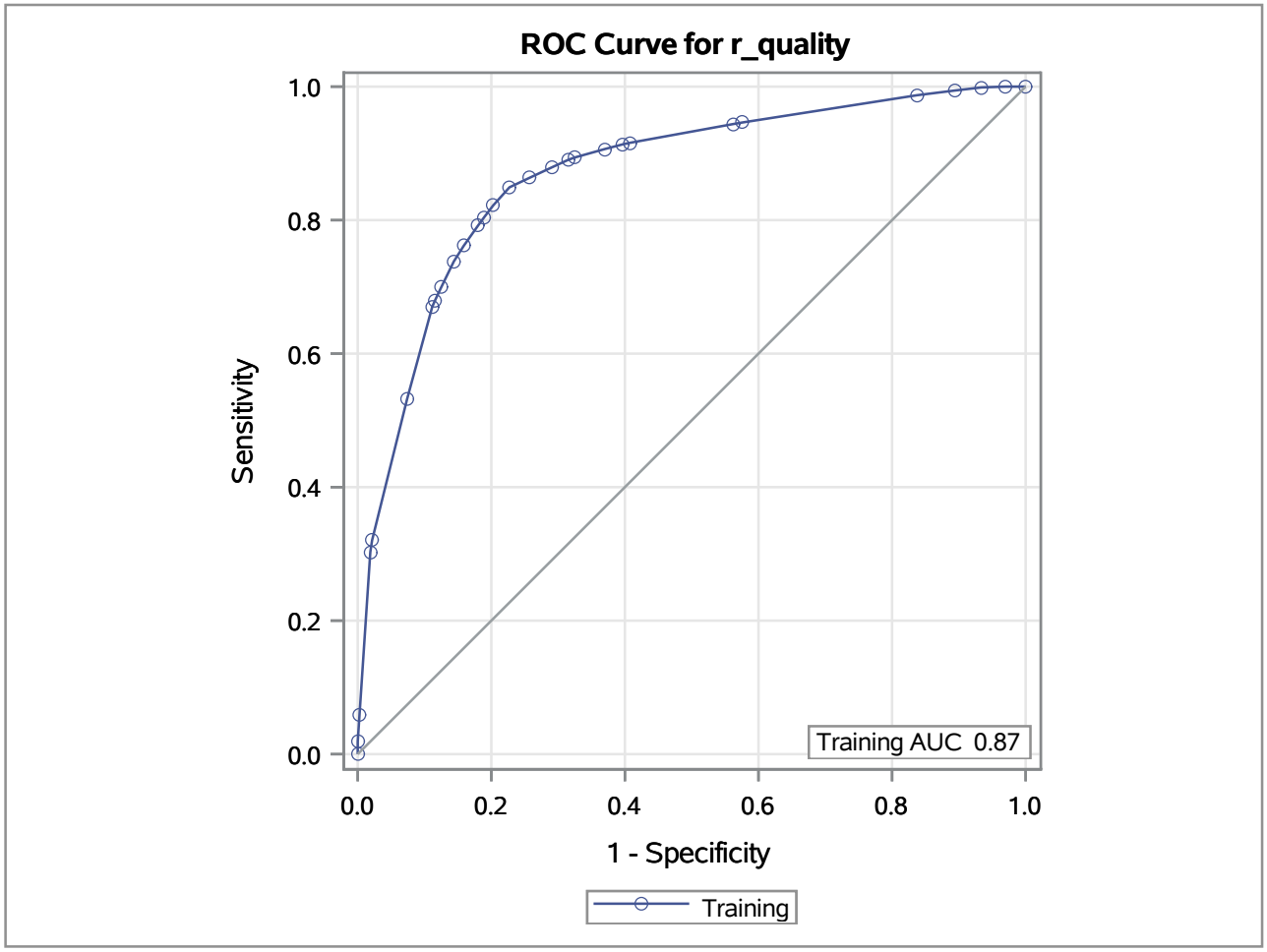
The HPSPLIT Procedure



The HPSPLIT Procedure

Confusion Matrices				
		Predicted		
	Actual	0	1	Error Rate
Model Based	**0**	575	169	0.2272
	1	129	726	0.1509
Cross Validation	**0**	537	207	0.2782
	1	202	653	0.2363

Fit Statistics for Selected Tree									
	N Leaves	ASE	Mis-class	Sensitivity	Specificity	Entropy	Gini	RSS	AUC
Model Based	29	0.1403	0.1864	0.8491	0.7728	0.6373	0.2807	448.8	0.8695
Cross Validation	36	0.1842	0.2553	0.7637	0.7218				



The HPSPLIT Procedure

Variable Importance			
	Training		
Variable	Relative	Importance	Count
alcohol	1.0000	13.0980	9
sulphates	0.6263	8.2038	5
vol_acidity	0.4643	6.0819	5
total_sulfur	0.4470	5.8548	3
chlorides	0.2772	3.6311	1
fix_acidity	0.2348	3.0751	2
citric_acid	0.1881	2.4634	1
pH	0.1583	2.0734	1
sugar	0.1479	1.9367	1

The HPFOREST Procedure

Performance Information	
Execution Mode	Single-Machine
Number of Threads	2

Data Access Information			
Data	**Engine**	**Role**	**Path**
WORK.WINES_RED	V9	Input	On Client
LDATA.SCORE	V9	Output	On Client

Model Information		
Parameter	**Value**	
Variables to Try	3	(Default)
Maximum Trees	30	
Actual Trees	30	
Inbag Fraction	0.5	
Prune Fraction	0	(Default)
Prune Threshold	0.1	(Default)
Leaf Fraction	0.00001	(Default)
Leaf Size Setting	1	(Default)
Leaf Size Used	1	
Category Bins	30	(Default)
Interval Bins	100	
Minimum Category Size	5	(Default)
Node Size	100000	(Default)
Maximum Depth	20	(Default)
Alpha	1	(Default)
Exhaustive	5000	(Default)
Rows of Sequence to Skip	5	(Default)
Split Criterion	.	Gini
Preselection Method	.	BinnedSearch
Missing Value Handling	.	Valid value

Number of Observations	
Type	**N**
Number of Observations Read	1599
Number of Observations Used	1599

The HPFOREST Procedure

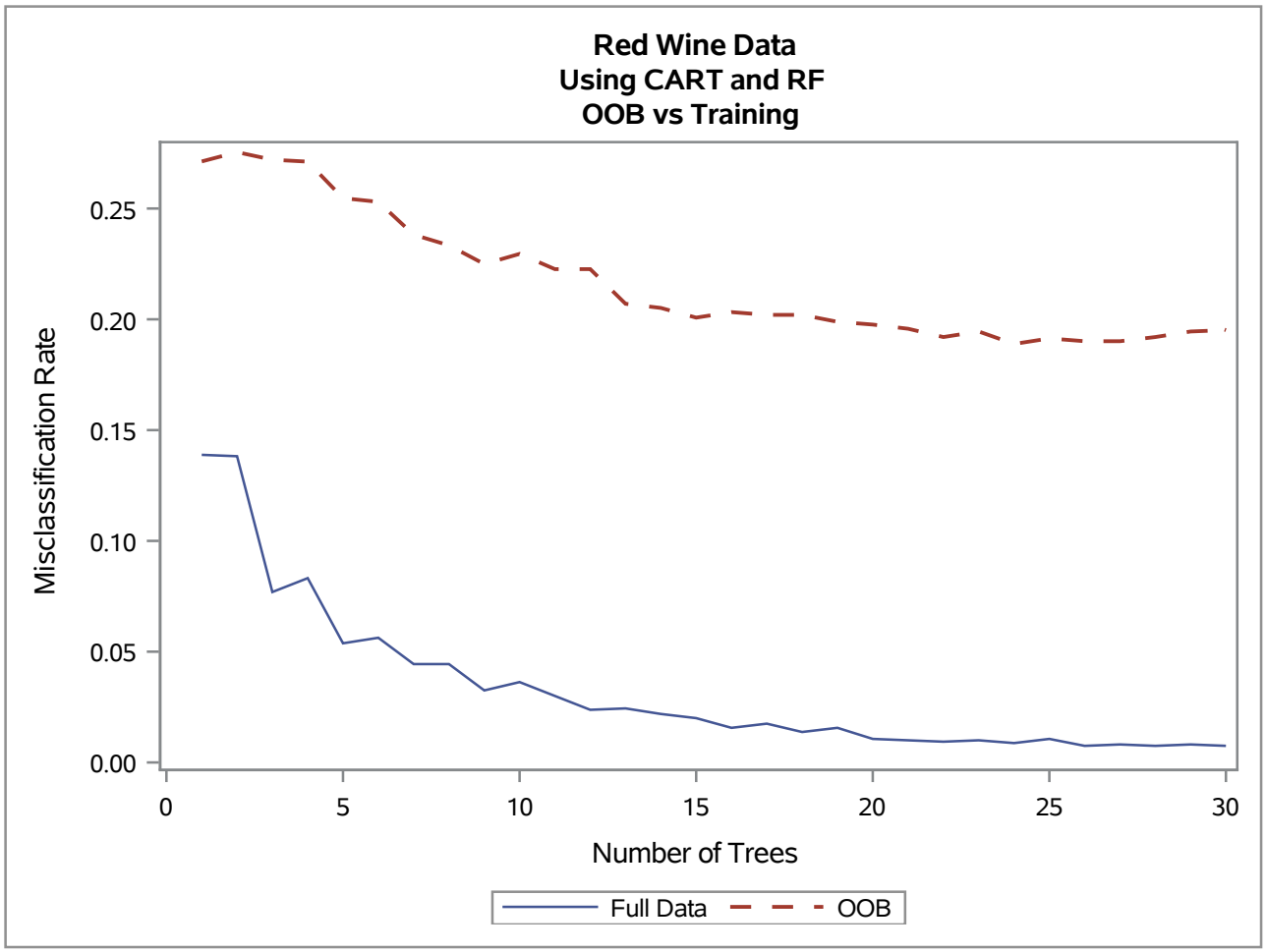
Baseline Fit Statistics	
Statistic	Value
Average Square Error	0.249
Misclassification Rate	0.465
Log Loss	0.691

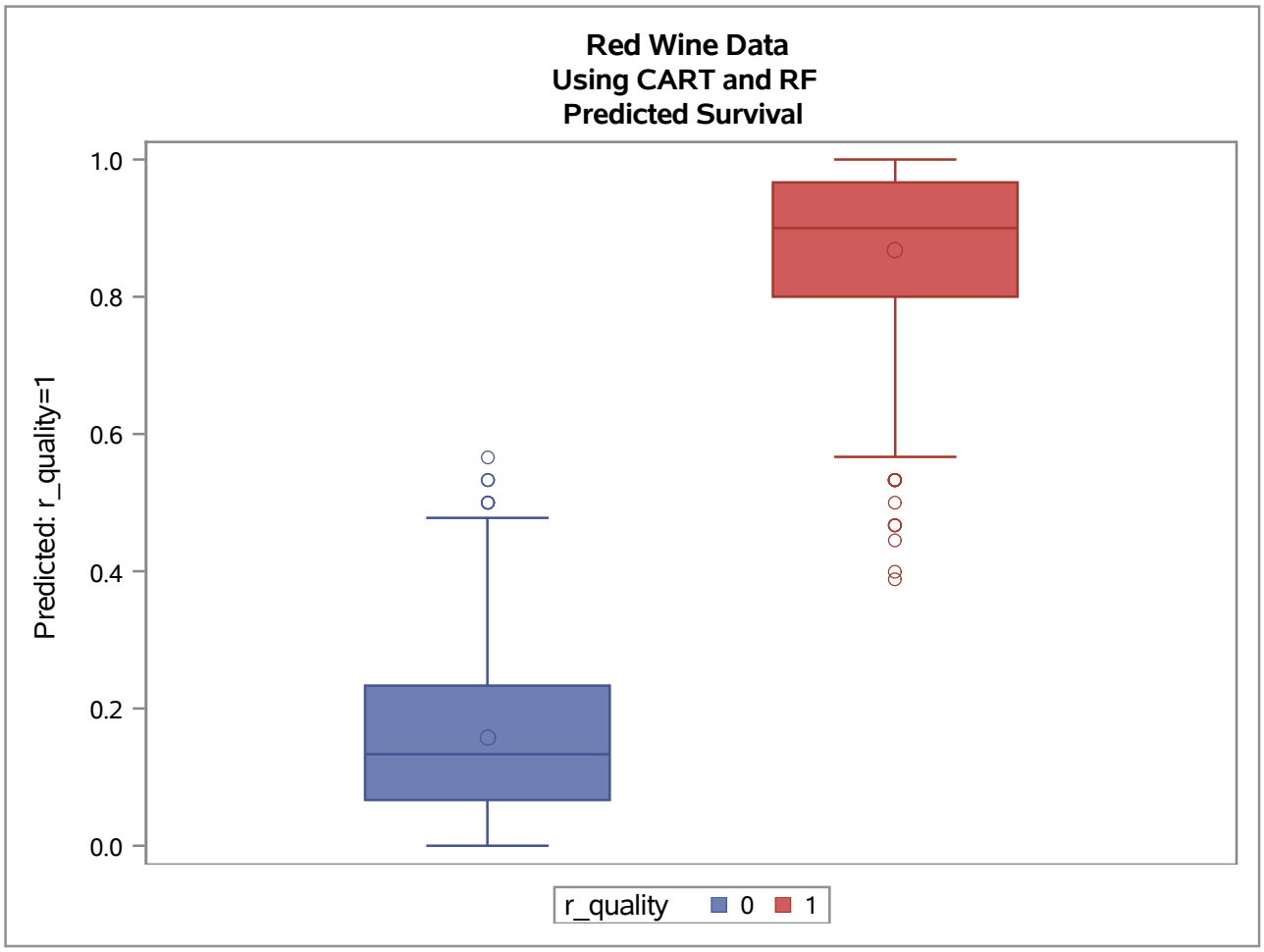
Fit Statistics							
Number of Trees	Number of Leaves	Average Square Error (Train)	Average Square Error (OOB)	Misclassification Rate (Train)	Misclassification Rate (OOB)	Log Loss (Train)	Log Loss (OOB)
1	207	0.1357	0.267	0.13884	0.271	3.036	6.056
2	383	0.0852	0.255	0.13821	0.275	0.820	5.313
3	578	0.0690	0.232	0.07692	0.272	0.423	4.430
4	762	0.0608	0.220	0.08318	0.271	0.259	3.744
5	950	0.0529	0.200	0.05378	0.255	0.183	2.937
6	1121	0.0510	0.191	0.05629	0.253	0.182	2.469
7	1292	0.0487	0.179	0.04440	0.238	0.180	2.026
8	1470	0.0461	0.172	0.04440	0.233	0.176	1.723
9	1676	0.0440	0.163	0.03252	0.225	0.174	1.384
10	1859	0.0435	0.161	0.03627	0.230	0.174	1.239
11	2037	0.0421	0.157	0.03002	0.223	0.173	1.078
12	2219	0.0413	0.155	0.02376	0.223	0.172	1.023
13	2397	0.0401	0.151	0.02439	0.207	0.169	0.928
14	2586	0.0393	0.149	0.02189	0.205	0.168	0.886
15	2776	0.0384	0.148	0.02001	0.201	0.167	0.846
16	2967	0.0381	0.147	0.01563	0.203	0.167	0.795
17	3149	0.0377	0.146	0.01751	0.202	0.166	0.740
18	3323	0.0372	0.145	0.01376	0.202	0.166	0.701
19	3515	0.0369	0.145	0.01563	0.199	0.166	0.688
20	3701	0.0364	0.143	0.01063	0.198	0.165	0.685
21	3879	0.0362	0.143	0.01001	0.196	0.165	0.660
22	4065	0.0359	0.141	0.00938	0.192	0.164	0.655
23	4250	0.0361	0.141	0.01001	0.194	0.166	0.644
24	4436	0.0359	0.140	0.00876	0.189	0.166	0.630
25	4626	0.0359	0.140	0.01063	0.191	0.166	0.581
26	4829	0.0356	0.140	0.00750	0.190	0.166	0.556
27	5021	0.0356	0.139	0.00813	0.190	0.166	0.543

The HPFOREST Procedure

Fit Statistics							
Number of Trees	Number of Leaves	Average Square Error (Train)	Average Square Error (OOB)	Misclassification Rate (Train)	Misclassification Rate (OOB)	Log Loss (Train)	Log Loss (OOB)
28	**5197**	0.0356	0.139	0.00750	0.192	0.166	0.541
29	**5387**	0.0357	0.139	0.00813	0.194	0.167	0.530
30	**5548**	0.0357	0.139	0.00750	0.195	0.167	0.517

Loss Reduction Variable Importance					
Variable	Number of Rules	Gini	OOB Gini	Margin	OOB Margin
alcohol	427	0.085390	0.04662	0.170779	0.129619
sulphates	545	0.066601	0.01075	0.133202	0.075587
density	43	0.012281	0.00946	0.024563	0.022321
chlorides	301	0.020481	-0.00978	0.040961	0.010430
vol_acidity	815	0.070639	-0.01231	0.141279	0.057248
total_sulfur	745	0.059610	-0.01415	0.119220	0.045752
free_sulfur	546	0.034170	-0.01882	0.068339	0.016806
fix_acidity	521	0.038477	-0.01885	0.076954	0.020022
sugar	529	0.033688	-0.01939	0.067376	0.015707
citric_acid	467	0.034030	-0.02389	0.068059	0.012525
pH	579	0.040988	-0.02393	0.081975	0.016020


Red Wine Data
Using CART and RF
OOB vs Training
Misclassification Rate
0.25
0.20
0.15
0.10
0.05
0.00
0
5
10
15
20
25
30
Number of Trees
Full Data
OOB


Red Wine Data
Using CART and RF
Predicted Survival
Predicted: r_quality=1
1.0
0.8
0.6
0.4
0.2
0.0
r_quality 0 1

Red Wine Data
Using CART and RF
Predicted Survival

The FREQ Procedure

Frequency Col Pct	Table of r_quality by pred		
	pred		
r_quality	0	1	Total
0	740 98.93	4 0.47	744
1	8 1.07	847 99.53	855
Total	748	851	1599

Statistics for Table of r_quality by pred

Odds Ratio and Relative Risks			
Statistic	Value	95% Confidence Limits	
Odds Ratio	19586.8750	5874.2985	65309.1895
Relative Risk (Column 1)	106.3004	53.3325	211.8740
Relative Risk (Column 2)	0.0054	0.0020	0.0144

Sample Size = 1599

Red Wine Data
Using CART and RF
Predicted Survival

The LOGISTIC Procedure

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

Number of Observations Read	1599
Number of Observations Used	1599

Response Profile		
Ordered Value	**r_quality**	**Total Frequency**
1	0	744
2	1	855

Probability modeled is r_quality=1.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	2210.973	2002.899
SC	2216.350	2019.030
-2 Log L	2208.973	1996.899

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	212.0743	2	<.0001
Score	196.1429	2	<.0001
Wald	172.1472	2	<.0001

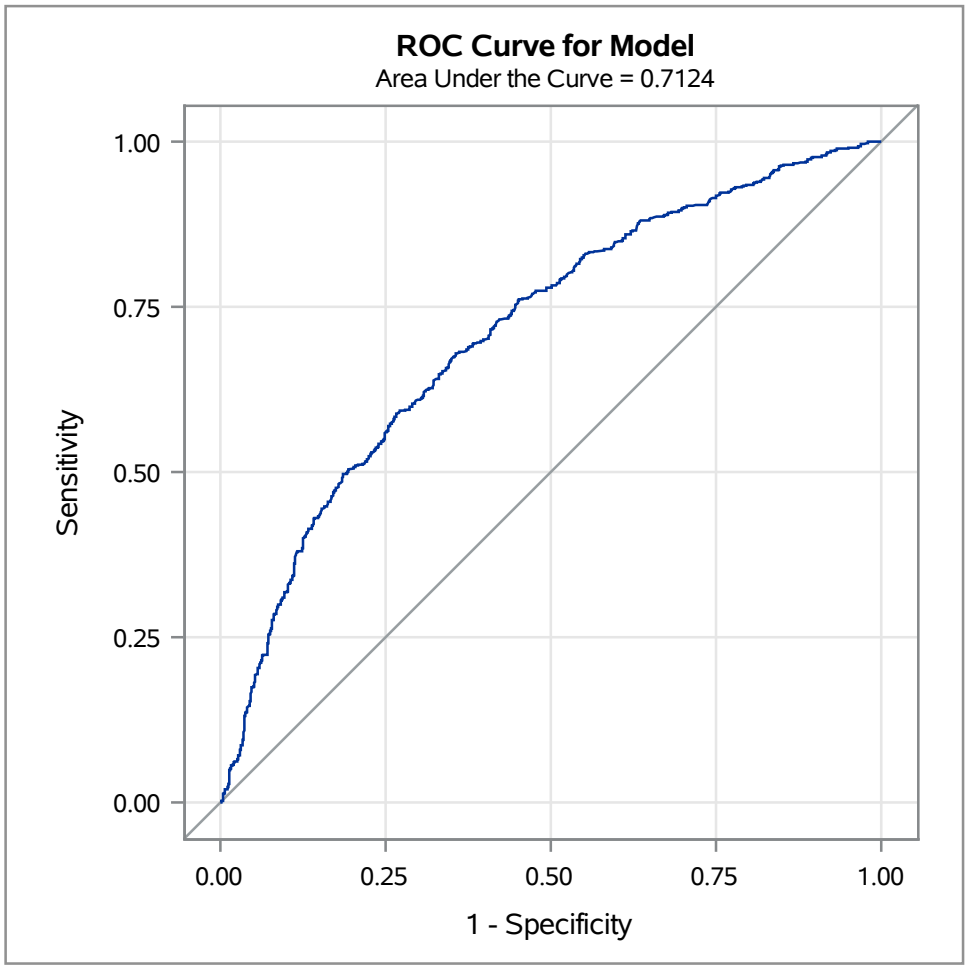
The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates						
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Exp(Est)
Intercept	1	0.6661	0.3337	3.9850	0.0459	1.947
vol_acidity	1	-3.6235	0.3431	111.5671	<.0001	0.027
sulphates	1	2.1310	0.3762	32.0837	<.0001	8.423

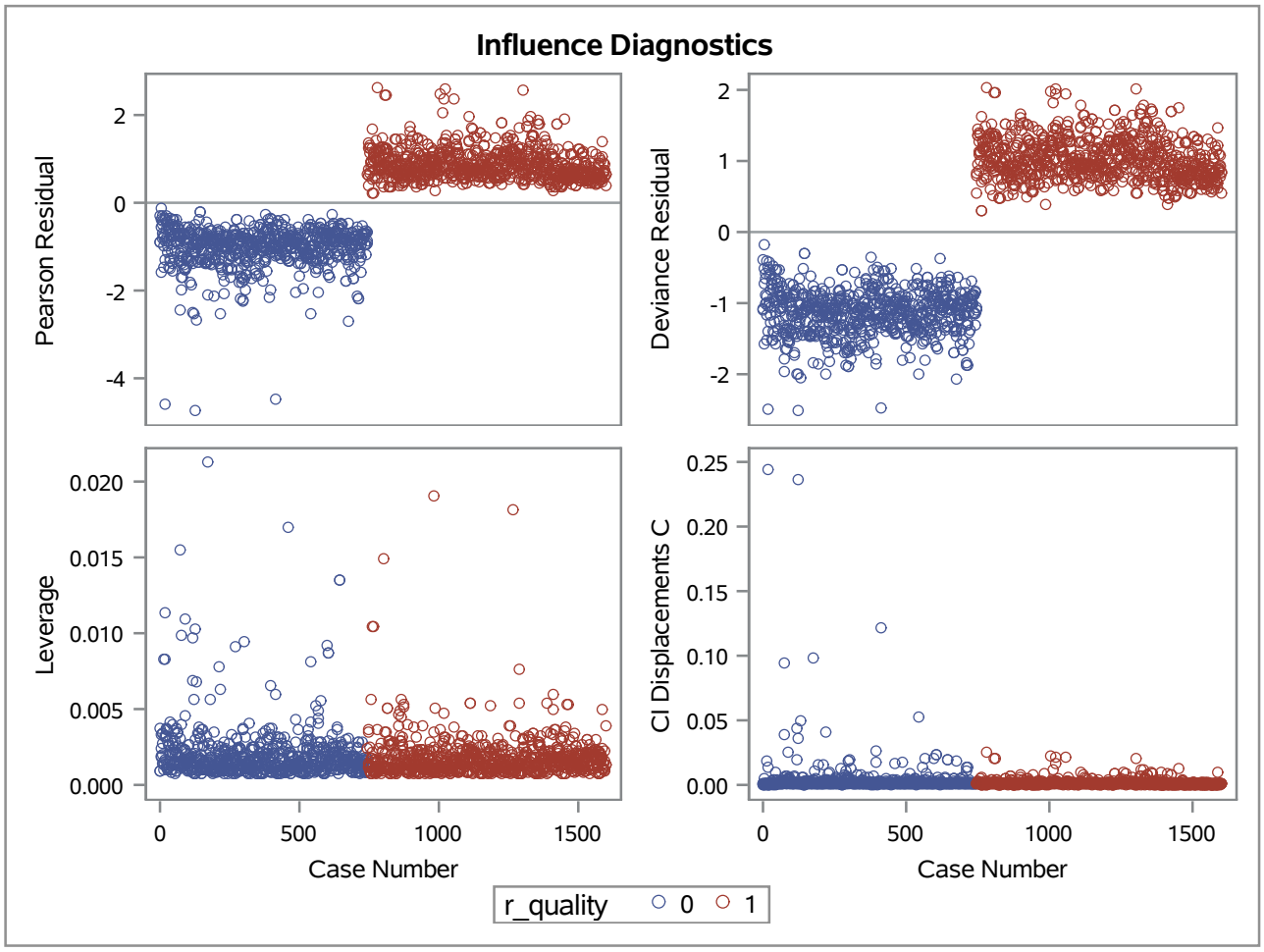
Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
vol_acidity	0.027	0.014	0.052
sulphates	8.423	4.029	17.608

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	71.2	Somers' D	0.425
Percent Discordant	28.7	Gamma	0.425
Percent Tied	0.0	Tau-a	0.212
Pairs	636120	c	0.712

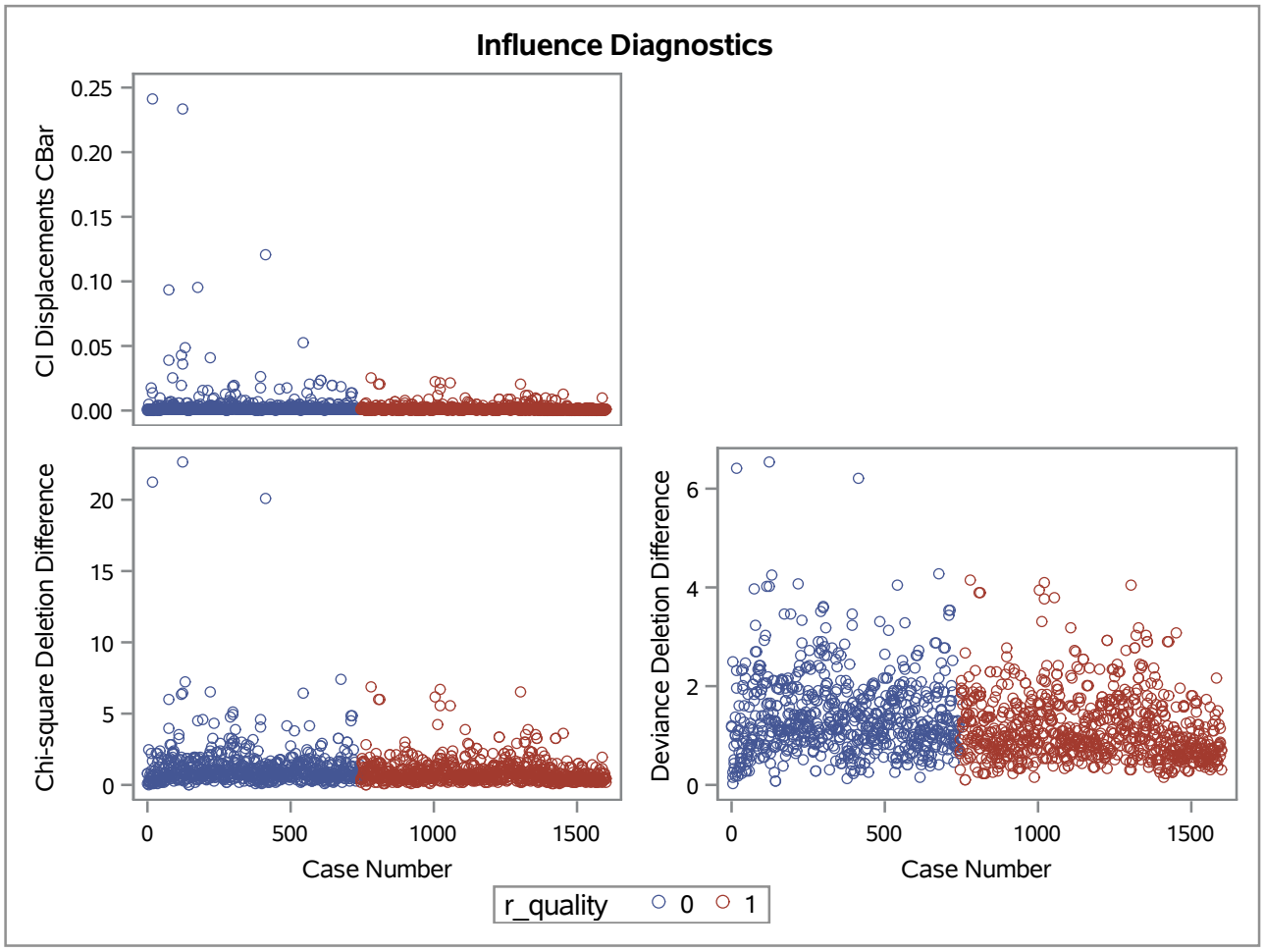
The LOGISTIC Procedure



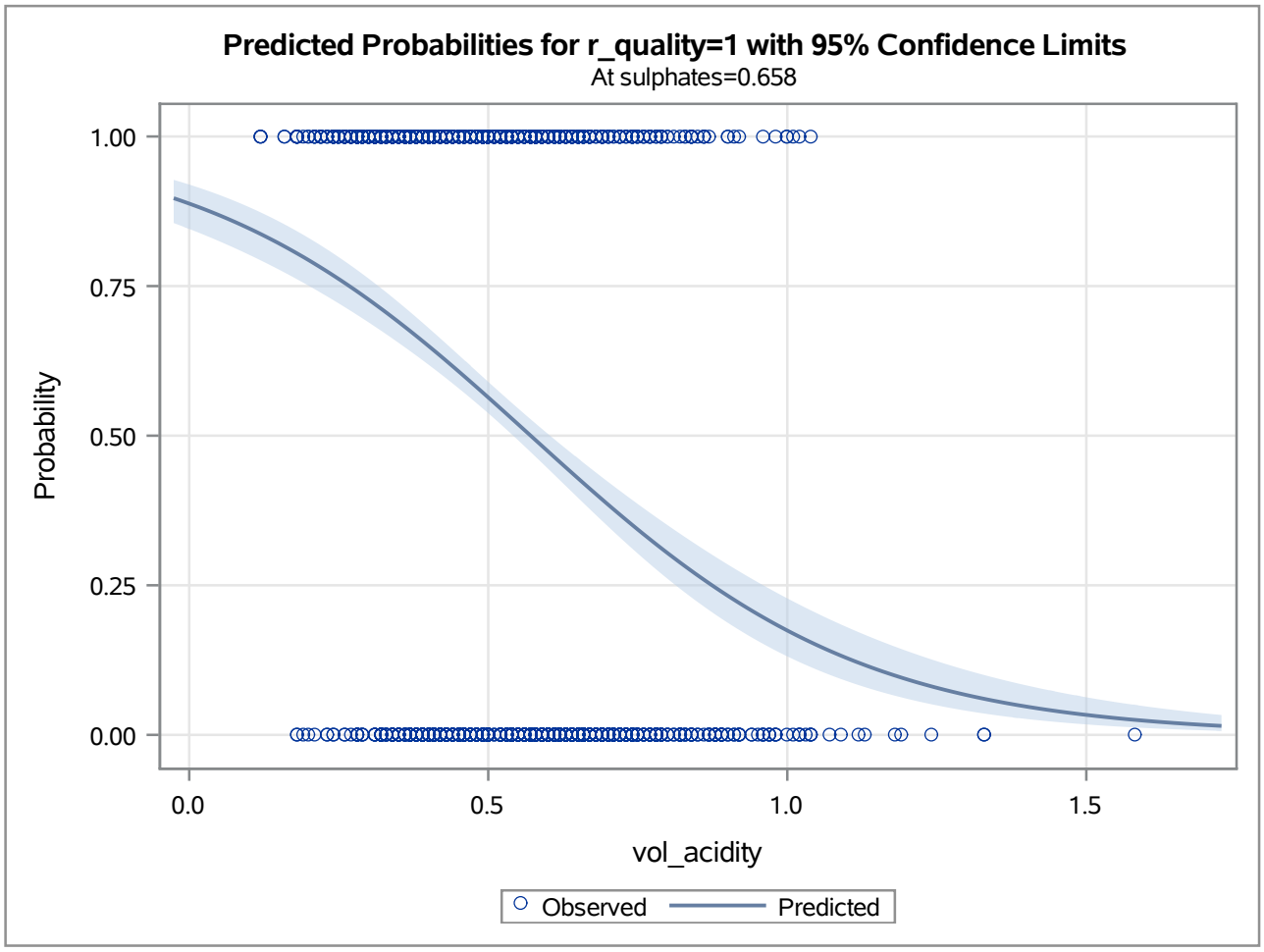
The LOGISTIC Procedure



The LOGISTIC Procedure



The LOGISTIC Procedure



Red Wine Data
Using CART and RF
Predicted Survival

The FREQ Procedure

Frequency Col Pct	Table of r_quality by pred		
	pred(Estimated Probability)		
r_quality	0	1	Total
0	442 63.78	302 33.33	744
1	251 36.22	604 66.67	855
Total	693	906	1599

Statistics for Table of r_quality by pred

Odds Ratio and Relative Risks			
Statistic	Value	95% Confidence Limits	
Odds Ratio	3.5219	2.8618	4.3343
Relative Risk (Column 1)	2.0237	1.7953	2.2811
Relative Risk (Column 2)	0.5746	0.5214	0.6332

Sample Size = 1599

The PRINCOMP Procedure

Observations	1599
Variables	11

Simple Statistics							
	alcohol	**chlorides**	**citric_acid**	**density**	**fix_acidity**	**free_sulfur**	**pH**
Mean	10.42298311	0.0878674171	0.2709756098	0.9985053158	8.319637273	15.87492183	3.311113196
StD	1.06567719	0.0471159987	0.1948011374	0.0035666113	1.741096318	10.46015697	0.154386465

Simple Statistics				
	sugar	**sulphates**	**total_sulfur**	**vol_acidity**
Mean	2.538805503	0.6581488430	46.46779237	0.5284177611
StD	1.409928060	0.1695069796	32.89532448	0.1796622769

Correlation Matrix											
	alcohol	**chlorides**	**citric_acid**	**density**	**fix_acidity**	**free_sulfur**	**pH**	**sugar**	**sulphates**	**total_sulfur**	**vol_acidity**
alcohol	1.0000	-.2202	0.1099	-.5203	-.0617	-.0694	0.2056	0.0421	0.0936	-.2056	-.2023
chlorides	-.2202	1.0000	0.2004	0.1709	0.0935	0.0028	-.2633	0.0522	0.3684	0.0450	0.0628
citric_acid	0.1099	0.2004	1.0000	0.1324	0.6717	-.0610	-.5419	0.1436	0.3128	0.0355	-.5523
density	-.5203	0.1709	0.1324	1.0000	0.3426	-.0085	-.2318	0.1303	0.0783	0.0747	0.0712
fix_acidity	-.0617	0.0935	0.6717	0.3426	1.0000	-.1538	-.6830	0.1148	0.1830	-.1132	-.2557
free_sulfur	-.0694	0.0028	-.0610	-.0085	-.1538	1.0000	0.0704	0.1870	0.0517	0.6677	-.0110
pH	0.2056	-.2633	-.5419	-.2318	-.6830	0.0704	1.0000	-.0857	-.1966	-.0665	0.2345
sugar	0.0421	0.0522	0.1436	0.1303	0.1148	0.1870	-.0857	1.0000	0.0055	0.2030	0.0022
sulphates	0.0936	0.3684	0.3128	0.0783	0.1830	0.0517	-.1966	0.0055	1.0000	0.0429	-.2608
total_sulfur	-.2056	0.0450	0.0355	0.0747	-.1132	0.6677	-.0665	0.2030	0.0429	1.0000	0.0761
vol_acidity	-.2023	0.0628	-.5523	0.0712	-.2557	-.0110	0.2345	0.0022	-.2608	0.0761	1.0000

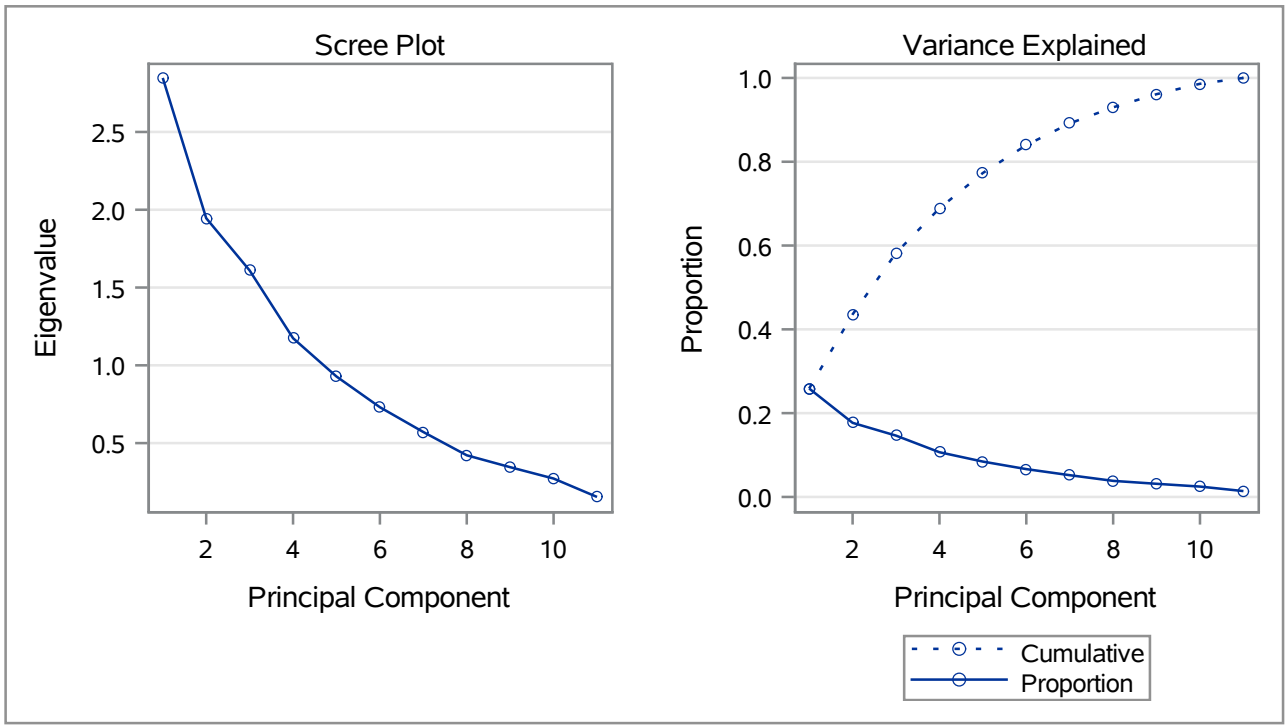
Eigenvalues of the Correlation Matrix				
	Eigenvalue	**Difference**	**Proportion**	**Cumulative**
1	2.84712115	0.90140790	0.2588	0.2588
2	1.94571325	0.33589809	0.1769	0.4357
3	1.60981516	0.43554495	0.1463	0.5821
4	1.17427021	0.24610408	0.1068	0.6888
5	0.92816612	0.19756335	0.0844	0.7732
6	0.73060277	0.15939185	0.0664	0.8396
7	0.57121092	0.14950509	0.0519	0.8915
8	0.42170583	0.07646242	0.0383	0.9299
9	0.34524342	0.07302515	0.0314	0.9613

Red Wine Data
Finding PC

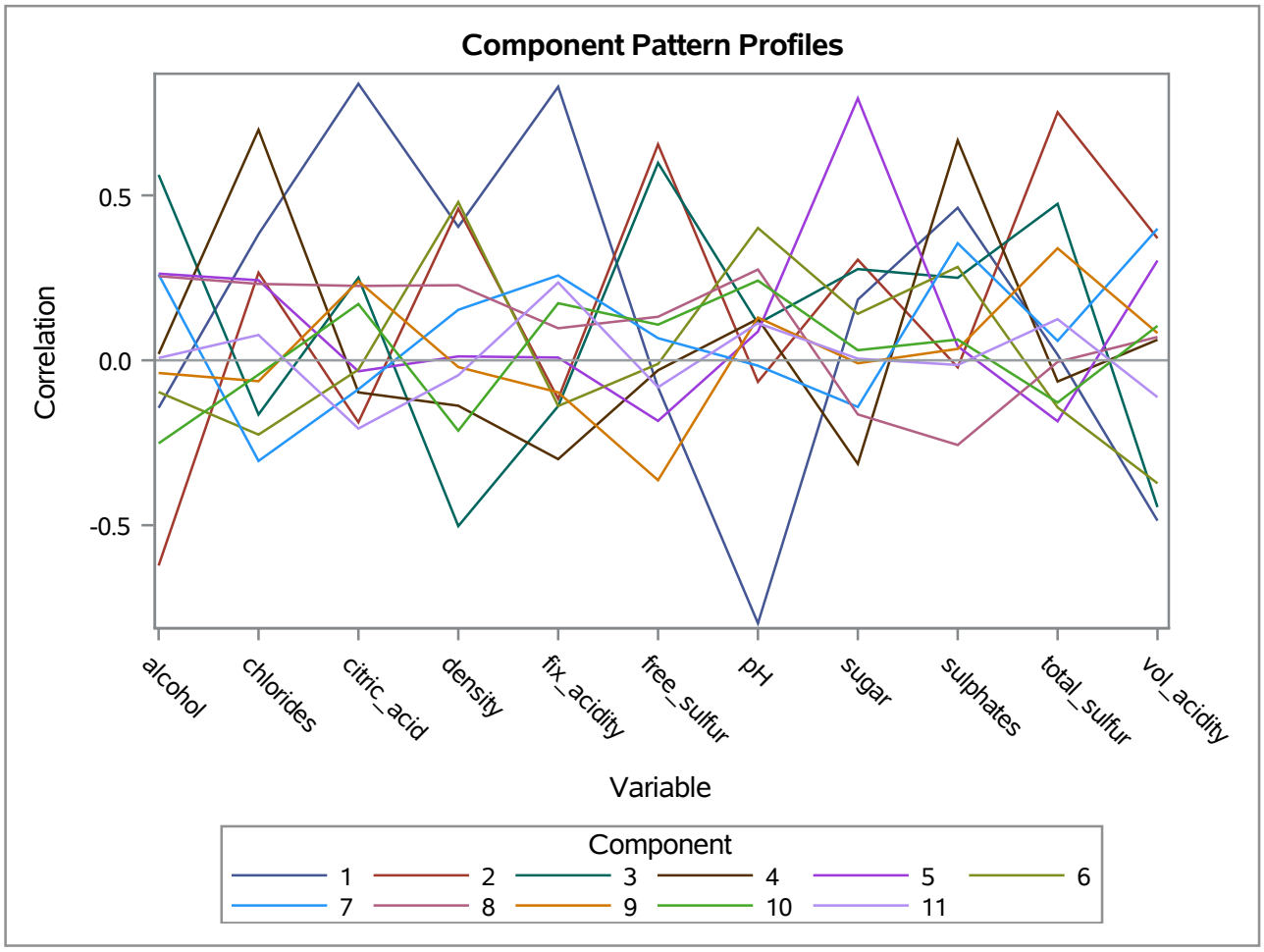
The PRINCOMP Procedure

Eigenvalues of the Correlation Matrix				
	Eigenvalue	Difference	Proportion	Cumulative
10	0.27221826	0.11828538	0.0247	0.9860
11	0.15393288		0.0140	1.0000

Eigenvectors											
	Prin1	Prin2	Prin3	Prin4	Prin5	Prin6	Prin7	Prin8	Prin9	Prin10	Prin11
alcohol	-.085385	-.446071	0.442953	0.017712	0.272622	-.112630	0.344097	0.392642	-.065548	-.482711	0.018009
chlorides	0.226584	0.190306	-.129497	0.644781	0.251792	-.263558	-.403784	0.356719	-.107891	-.083142	0.195517
citric_acid	0.496782	-.134763	0.197210	-.089747	-.034681	-.033320	-.116249	0.347182	0.408338	0.326932	-.527365
density	0.239892	0.329324	-.396176	-.127134	0.012229	0.561175	0.202465	0.350477	-.034934	-.409161	-.115553
fix_acidity	0.491388	-.083629	-.109492	-.276509	0.008650	-.162093	0.340261	0.149657	-.165505	0.331630	0.601003
free_sulfur	-.048806	0.469045	0.471605	-.027910	-.190649	-.012888	0.088804	0.203092	-.618625	0.207010	-.207916
pH	-.472359	-.046864	0.087859	0.115889	0.090299	0.469302	-.021680	0.423714	0.220647	0.463149	0.286247
sugar	0.109064	0.218692	0.217912	-.289706	0.824056	0.164892	-.187051	-.252563	-.015328	0.058653	0.012488
sulphates	0.274000	-.015508	0.197062	0.615054	0.044129	0.331157	0.469378	-.395384	0.058721	0.120573	-.036276
total_sulfur	0.010023	0.539041	0.373775	-.059380	-.191865	-.167135	0.077847	-.007515	0.577845	-.245682	0.317764
vol_acidity	-.288081	0.265264	-.350757	0.057564	0.313883	-.436293	0.527781	0.108921	0.140500	0.200260	-.284895



The PRINCOMP Procedure



The LOGISTIC Procedure

Model Information		
Data Set	WORK.PCMEASURES	Standardized Principal Component Scores
Response Variable	r_quality	
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	1599
Number of Observations Used	1599

Response Profile		
Ordered Value	**r_quality**	**Total Frequency**
1	1	855
2	0	744

Probability modeled is r_quality=1.

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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	2210.973	1728.062
SC	2216.350	1771.079
-2 Log L	2208.973	1712.062

Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	496.9107	7	<.0001
Score	432.6231	7	<.0001
Wald	334.6354	7	<.0001

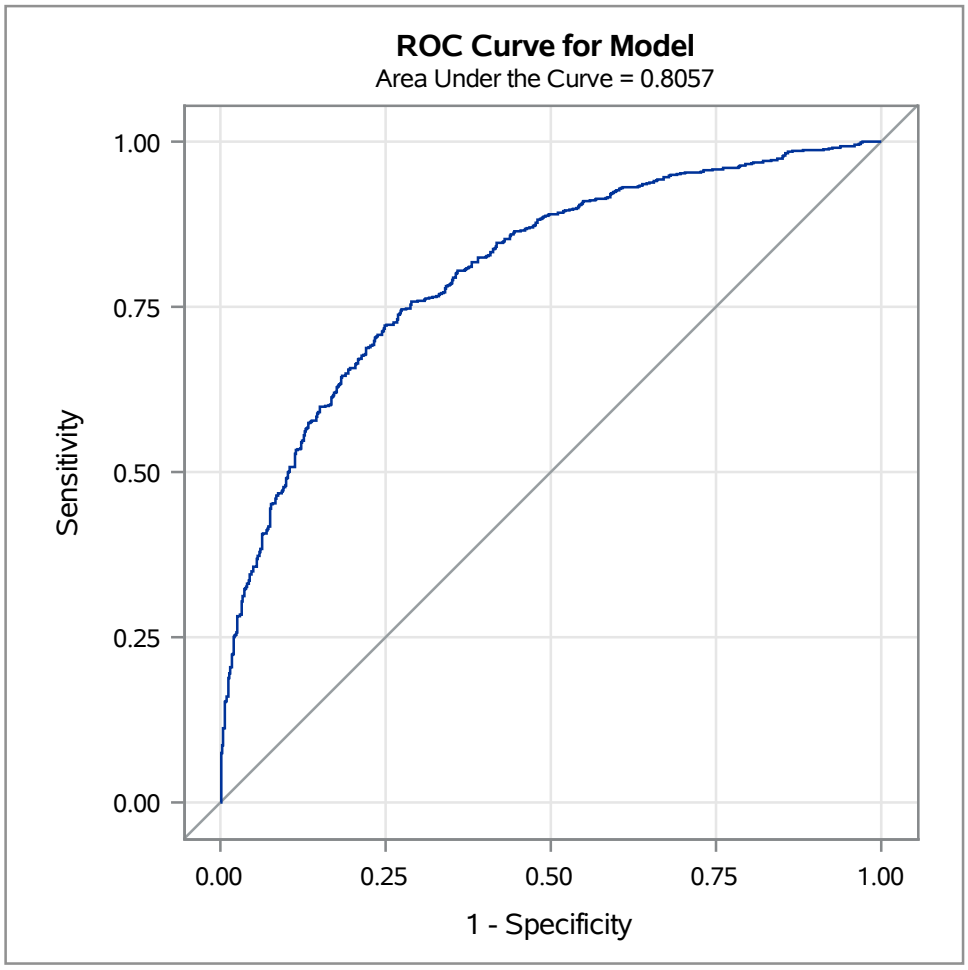
The LOGISTIC Procedure

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	0.2461	0.0606	16.4750	<.0001
Prin1	1	0.2411	0.0609	15.6857	<.0001
Prin2	1	-1.0663	0.0709	226.4131	<.0001
Prin3	1	0.7405	0.0654	128.1705	<.0001
Prin4	1	0.1421	0.0593	5.7489	0.0165
Prin5	1	0.1330	0.0599	4.9260	0.0265
Prin6	1	0.2877	0.0619	21.6231	<.0001
Prin7	1	0.2743	0.0612	20.0818	<.0001

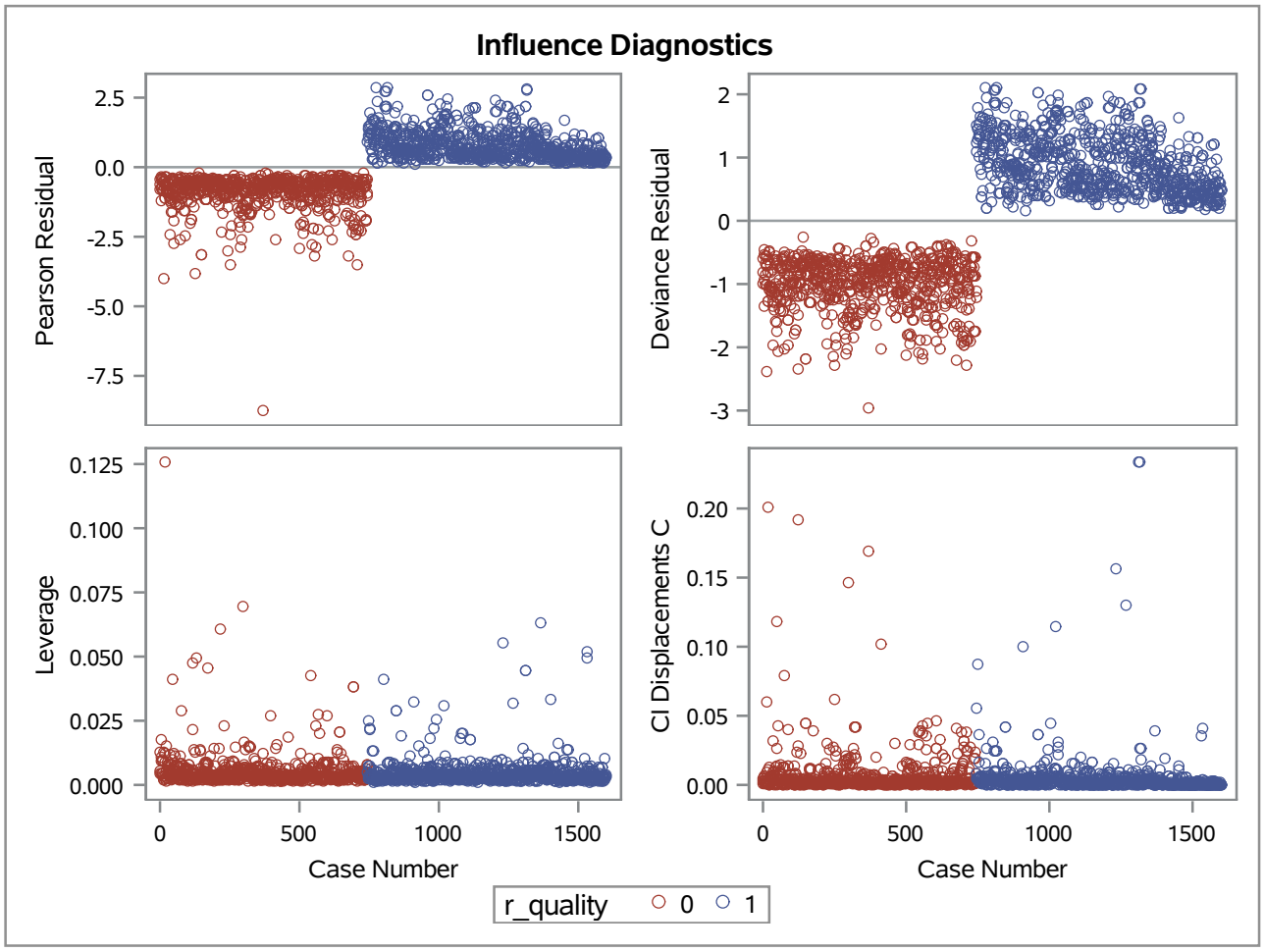
Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
Prin1	1.273	1.129	1.434
Prin2	0.344	0.300	0.396
Prin3	2.097	1.845	2.384
Prin4	1.153	1.026	1.295
Prin5	1.142	1.016	1.285
Prin6	1.333	1.181	1.505
Prin7	1.316	1.167	1.483

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	80.6	Somers' D	0.611
Percent Discordant	19.4	Gamma	0.611
Percent Tied	0.0	Tau-a	0.304
Pairs	636120	c	0.806

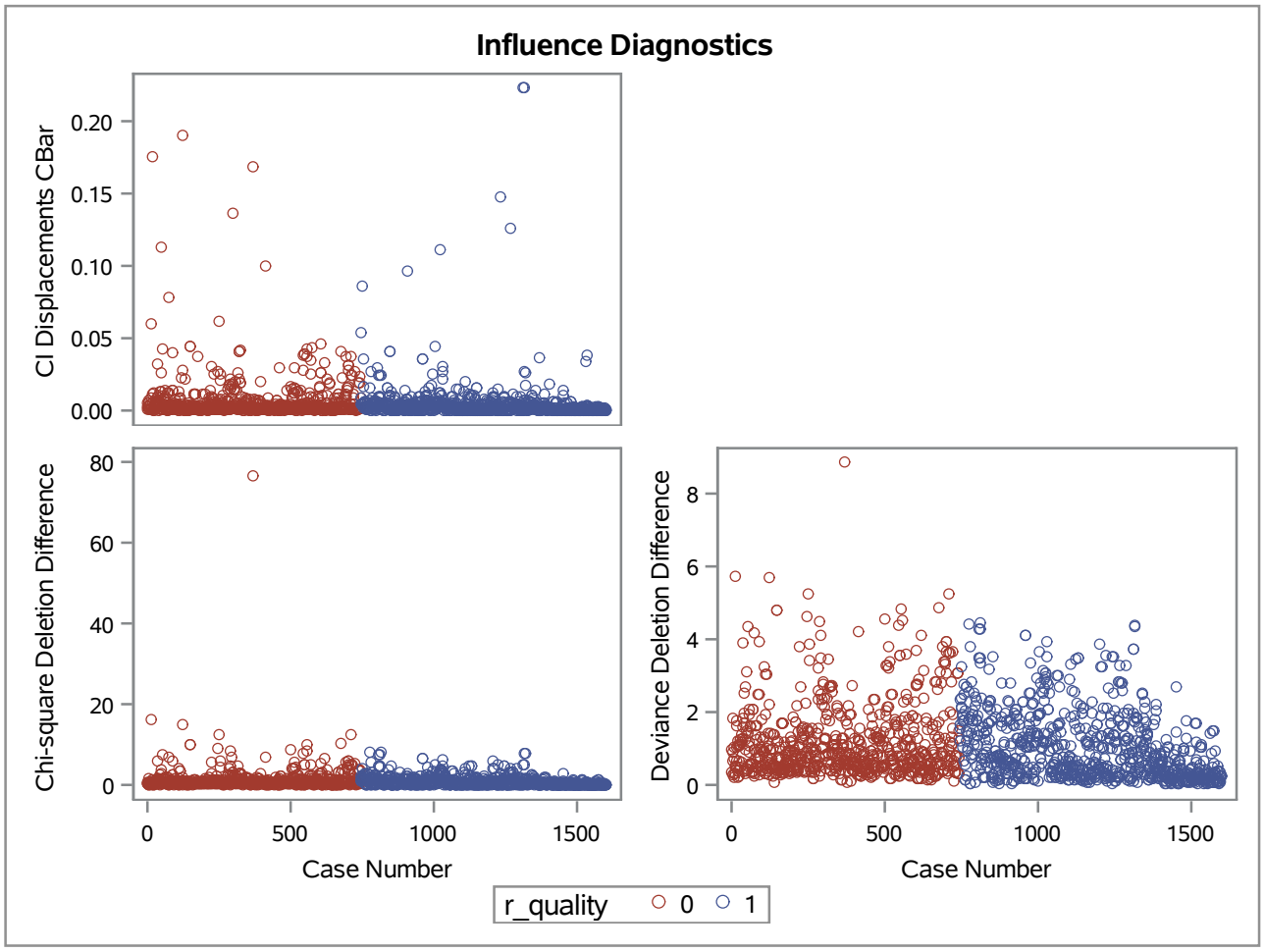
The LOGISTIC Procedure



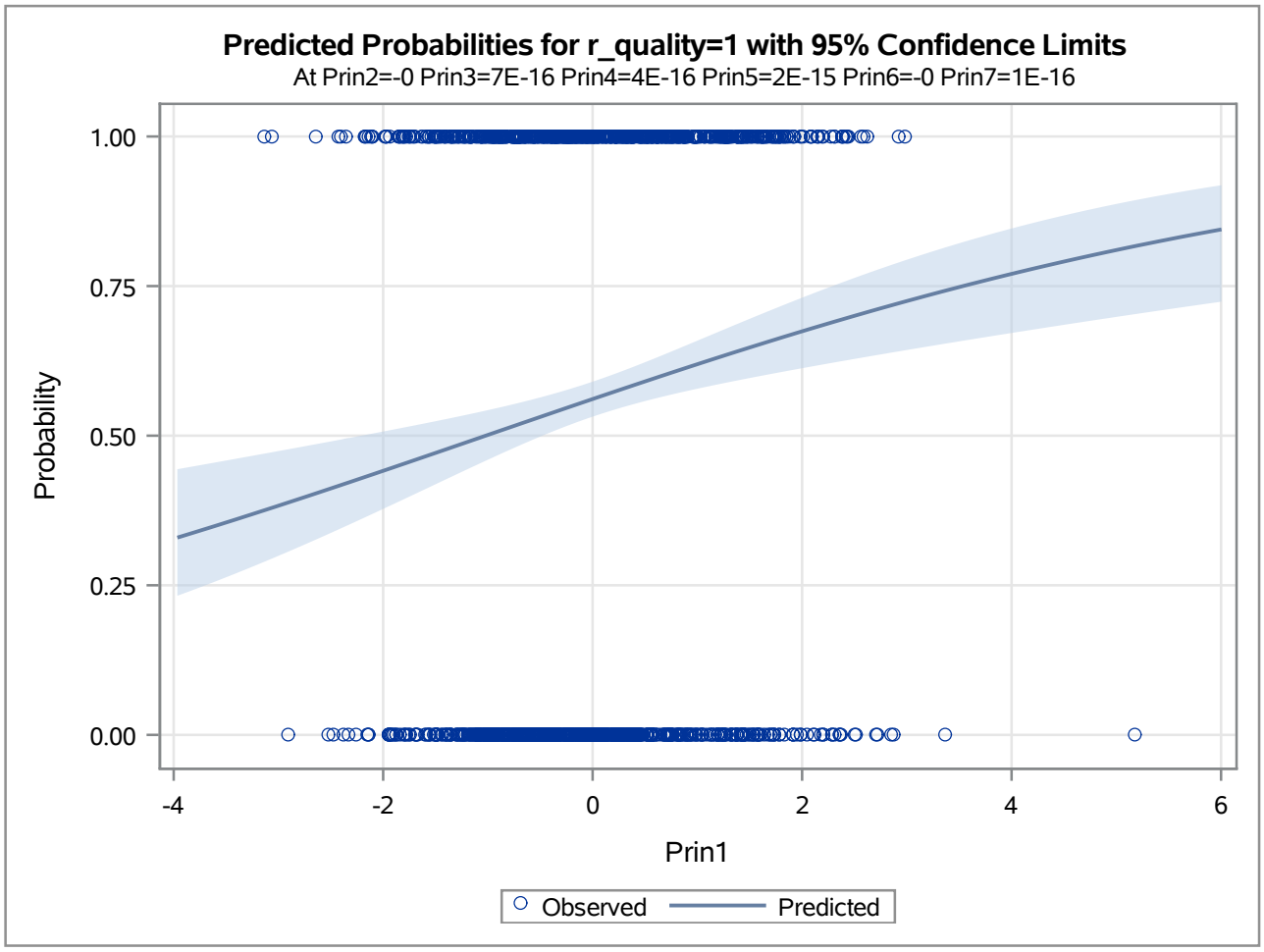
The LOGISTIC Procedure



The LOGISTIC Procedure



The LOGISTIC Procedure



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

Model Fit Statistics		
Criterion	**Intercept Only**	**Intercept and Covariates**
AIC	2210.973	1920.597
SC	2216.350	1936.729
-2 Log L	2208.973	1914.597

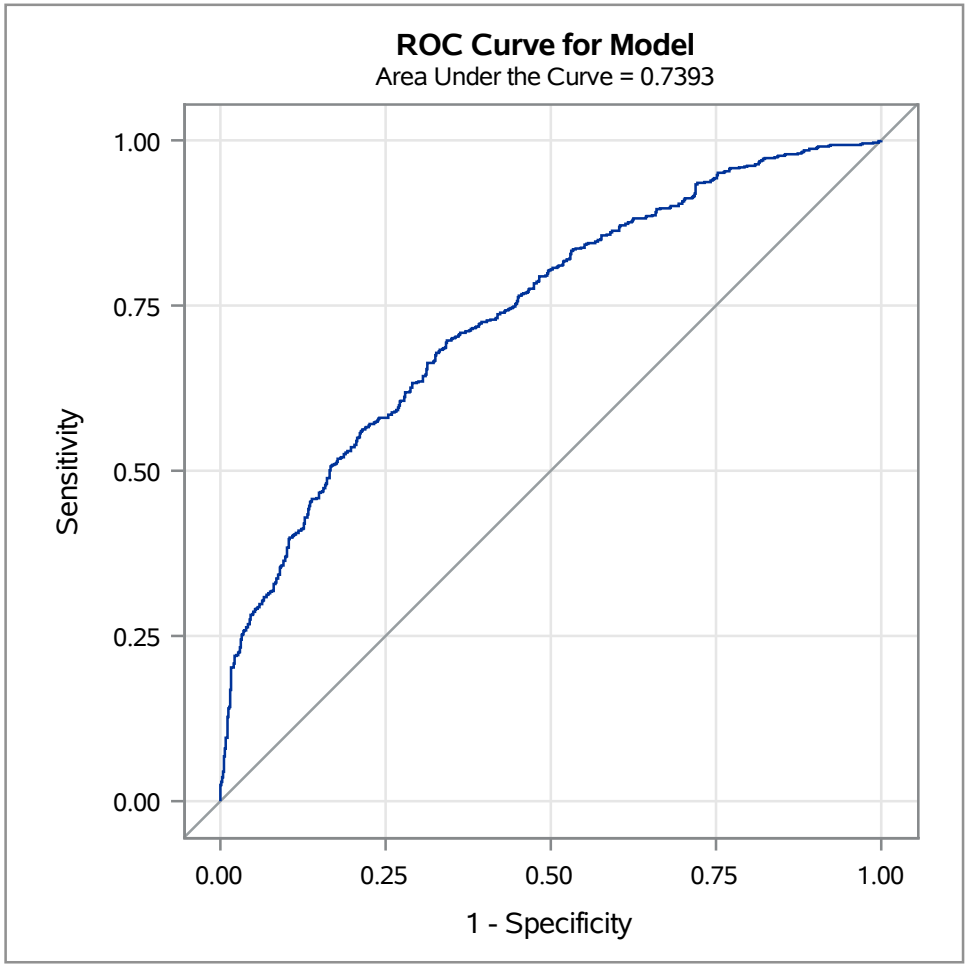
Testing Global Null Hypothesis: BETA=0			
Test	**Chi-Square**	**DF**	**Pr > ChiSq**
Likelihood Ratio	294.3758	2	<.0001
Score	268.2424	2	<.0001
Wald	227.6144	2	<.0001

The LOGISTIC Procedure

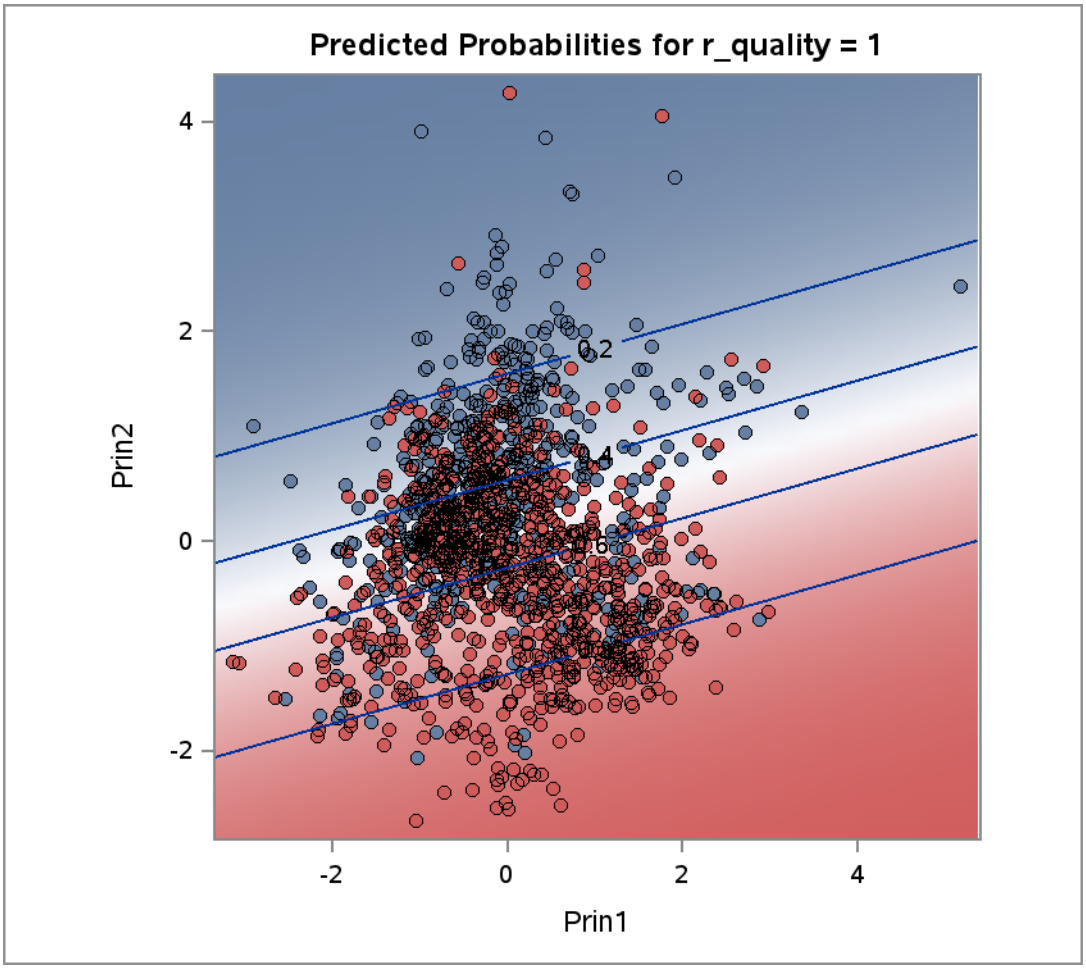
Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	0.1608	0.0552	8.4875	0.0036
Prin1	1	0.2291	0.0559	16.7878	<.0001
Prin2	1	-0.9670	0.0659	215.2880	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
Prin1	1.257	1.127	1.403
Prin2	0.380	0.334	0.433

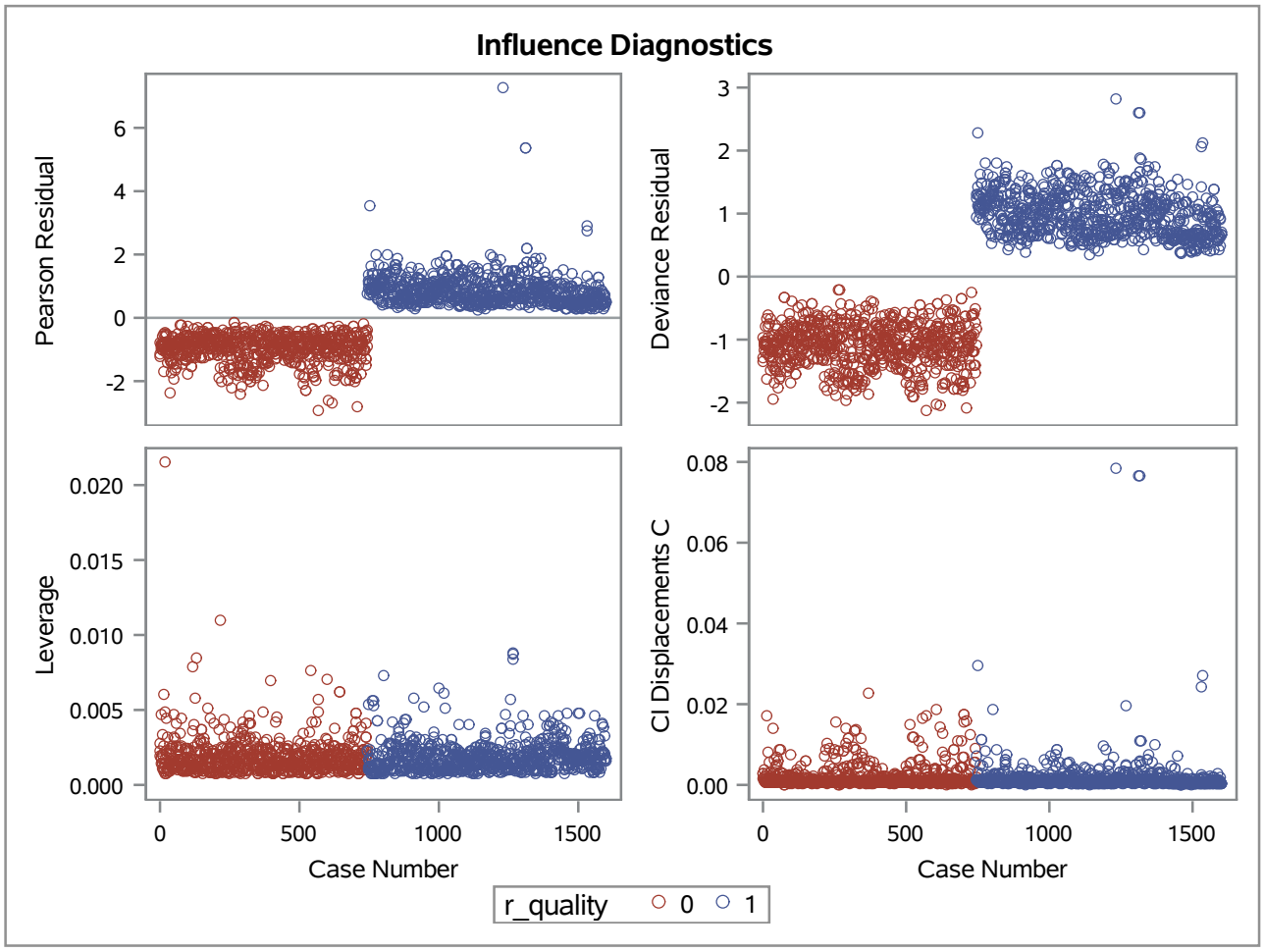
Association of Predicted Probabilities and Observed Responses			
Percent Concordant	73.9	Somers' D	0.479
Percent Discordant	26.1	Gamma	0.479
Percent Tied	0.0	Tau-a	0.238
Pairs	636120	c	0.739



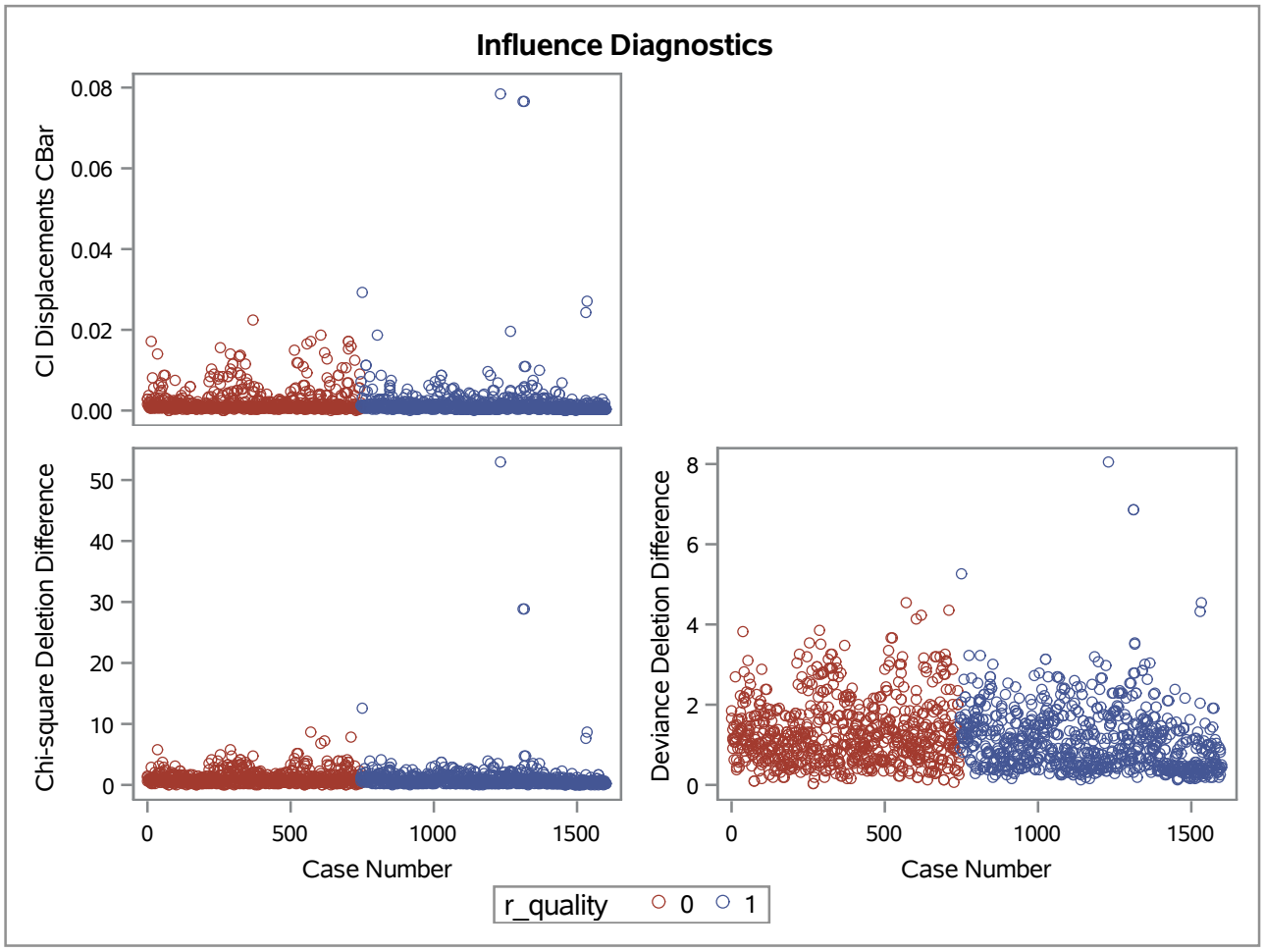
The LOGISTIC Procedure



The LOGISTIC Procedure



The LOGISTIC Procedure



The LOGISTIC Procedure