

Logistic Regression Results

The LOGISTIC Procedure

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

Number of Observations Read	418
Number of Observations Used	276

Response Profile		
Ordered Value	D	Total Frequency
1	0	165
2	1	111

Probability modeled is D='1'.

Note: 142 observations were deleted due to missing values for the response or explanatory variables.

Forward Selection Procedure

Class Level Information				
Class	Value	Design Variables		
Z1	1	1		
	2	0		
Z6	0	1		
	1	0		
Z3	0	1		
	1	0		
Z5	0	1		
	1	0		
Z7	0	1	0	
	1	0	1	
	0.5	0	0	
Z17	1	1	0	0
	2	0	1	0
	3	0	0	1
	4	0	0	0
Z4	0	1		
	1	0		

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Step 0. Intercept entered:

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

-2 Log L = 371.984

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
108.1878	20	<.0001

Step 1. Effect Z8 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	373.984	314.026
SC	377.604	321.267
-2 Log L	371.984	310.026

R-Square 0.2011 **Max-rescaled R-Square** 0.2717

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	61.9574	1	<.0001
Score	48.5037	1	<.0001
Wald	30.4597	1	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
66.8967	19	<.0001

Step 2. Effect Z16 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	373.984	292.367
SC	377.604	303.228
-2 Log L	371.984	286.367

R-Square 0.2667 **Max-rescaled R-Square** 0.3603

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Step 2. Effect Z16 entered:

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	85.6168	2	<.0001
Score	67.5338	2	<.0001
Wald	44.5680	2	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
46.0208	18	0.0003

Step 3. Effect logz12 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	373.984	276.756
SC	377.604	291.237
-2 Log L	371.984	268.756

R-Square	0.3120	Max-rescaled R-Square	0.4216
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Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	103.2278	3	<.0001
Score	81.9940	3	<.0001
Wald	55.4132	3	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
30.3078	17	0.0242

Step 4. Effect Z2 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	373.984	265.123
SC	377.604	283.225
-2 Log L	371.984	255.123

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Step 4. Effect Z2 entered:

R-Square 0.3452 Max-rescaled R-Square 0.4664

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	116.8603	4	<.0001
Score	93.8150	4	<.0001
Wald	61.4663	4	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
19.2217	16	0.2573

Step 5. Effect Z11 entered:

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

Model Fit Statistics		
Criterion	Intercept Only	Intercept and Covariates
AIC	373.984	261.802
SC	377.604	283.524
-2 Log L	371.984	249.802

R-Square 0.3577 Max-rescaled R-Square 0.4833

Testing Global Null Hypothesis: BETA=0			
Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	122.1817	5	<.0001
Score	99.4290	5	<.0001
Wald	63.8366	5	<.0001

Residual Chi-Square Test		
Chi-Square	DF	Pr > ChiSq
13.6368	15	0.5532

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

Summary of Forward Selection						
Step	Effect Entered	DF	Number In	Score Chi-Square	Pr > ChiSq	Variable Label
1	Z8	1	1	48.5037	<.0001	
2	Z16	1	2	23.8272	<.0001	
3	logz12	1	3	17.7326	<.0001	log12

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

Summary of Forward Selection					
Step	Effect Entered	DF	Number In	Score Chi-Square	Pr > ChiSq
4	Z2	1	4	13.2456	0.0003
5	Z11	1	5	5.4047	0.0201

Deviance and Pearson Goodness-of-Fit Statistics				
Criterion	Value	DF	Value/DF	Pr > ChiSq
Deviance	249.8018	270	0.9252	0.8059
Pearson	283.1148	270	1.0486	0.2796

Number of unique profiles: 276

Type 3 Analysis of Effects			
Effect	DF	Wald Chi-Square	Pr > ChiSq
Z8	1	10.1260	0.0015
Z2	1	12.2559	0.0005
Z11	1	5.1777	0.0229
Z16	1	12.7741	0.0004
logz12	1	15.1189	0.0001

Analysis of Maximum Likelihood Estimates					
Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept	1	-18.1015	2.8415	40.5829	<.0001
Z8	1	0.2185	0.0687	10.1260	0.0015
Z2	1	0.0557	0.0159	12.2559	0.0005
Z11	1	0.00501	0.00220	5.1777	0.0229
Z16	1	0.6707	0.1877	12.7741	0.0004
logz12	1	0.8958	0.2304	15.1189	0.0001

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.735
Percent Discordant	13.3	Gamma	0.735
Percent Tied	0.0	Tau-a	0.355
Pairs	18315	c	0.867

Parameter Estimates and Wald Confidence Intervals			
Parameter	Estimate	95% Confidence Limits	
Intercept	-18.1015	-23.6707	-12.5324

Logistic Regression Results**The LOGISTIC Procedure****Number of unique profiles: 276**

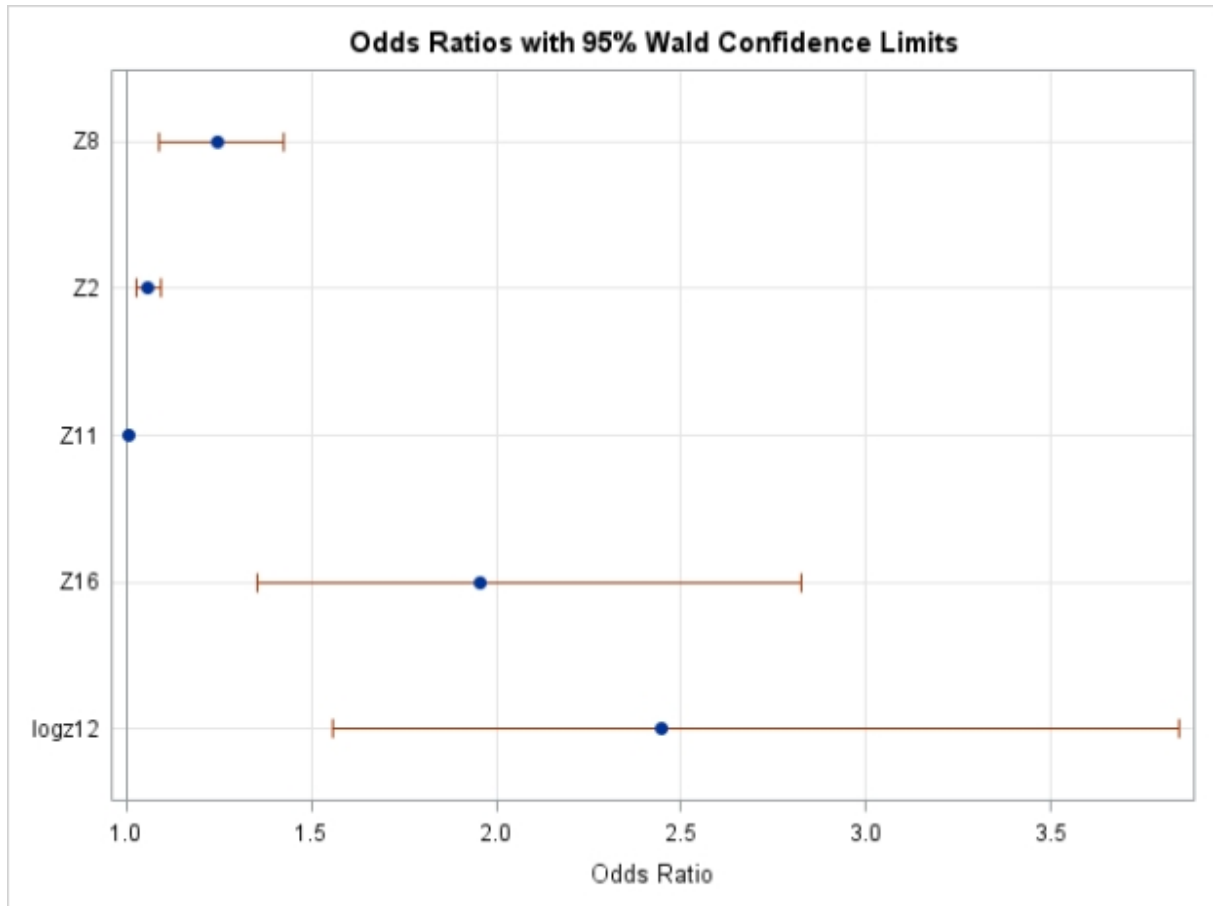
Parameter Estimates and Wald Confidence Intervals			
Parameter	Estimate	95% Confidence Limits	
Z8	0.2185	0.0839	0.3531
Z2	0.0557	0.0245	0.0870
Z11	0.00501	0.000695	0.00933
Z16	0.6707	0.3029	1.0386
logz12	0.8958	0.4442	1.3473

Odds Ratio Estimates and Wald Confidence Intervals				
Effect	Unit	Estimate	95% Confidence Limits	
Z8	1.0000	1.244	1.088	1.423
Z2	1.0000	1.057	1.025	1.091
Z11	1.0000	1.005	1.001	1.009
Z16	1.0000	1.956	1.354	2.825
logz12	1.0000	2.449	1.559	3.847

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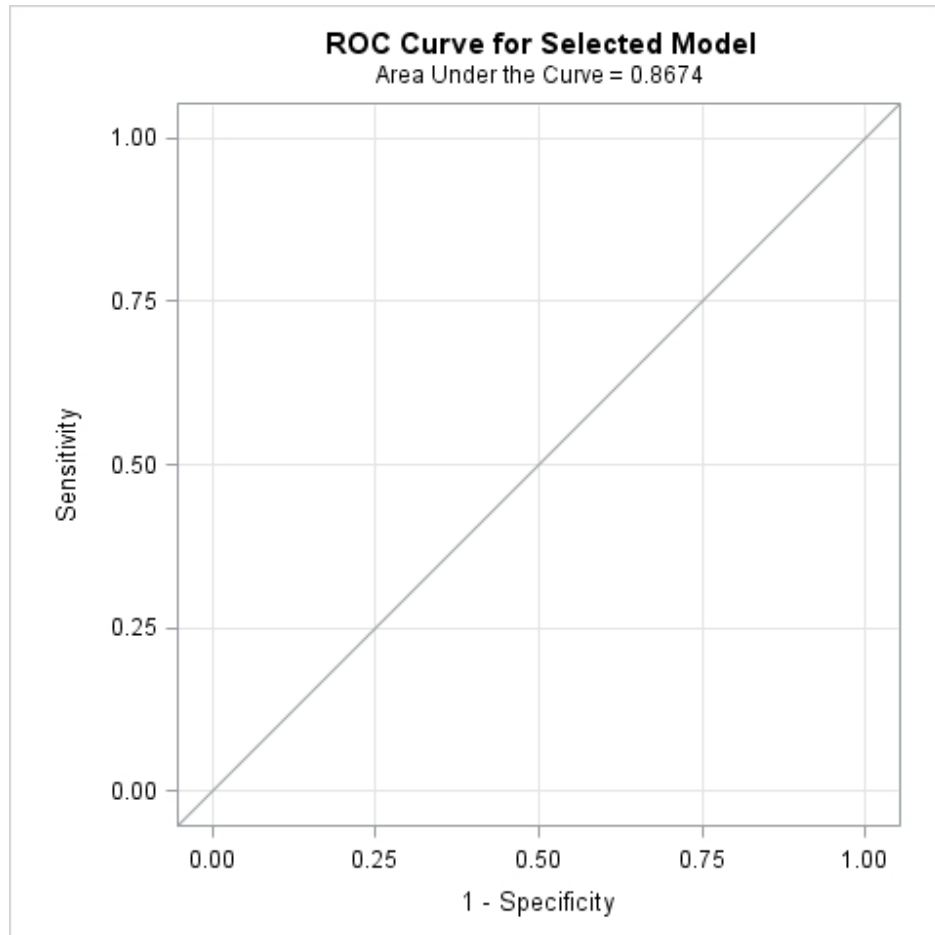
Number of unique profiles: 276



Logistic Regression Results

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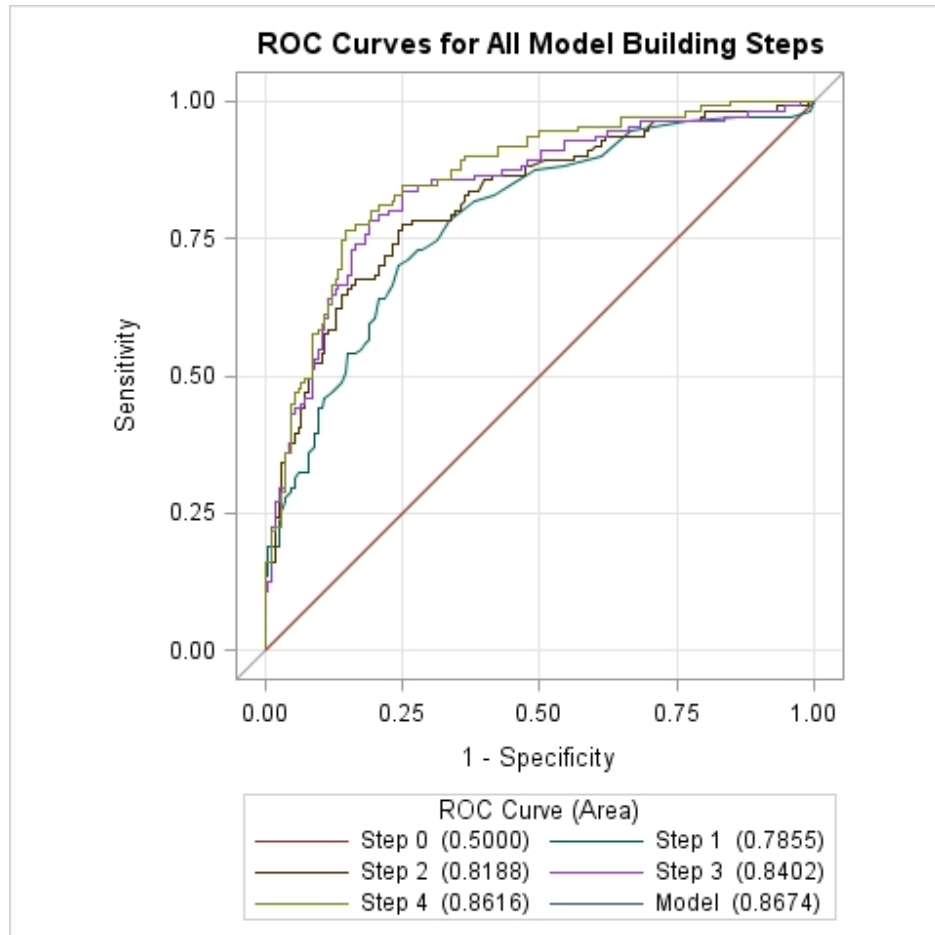
Number of unique profiles: 276



Logistic Regression Results

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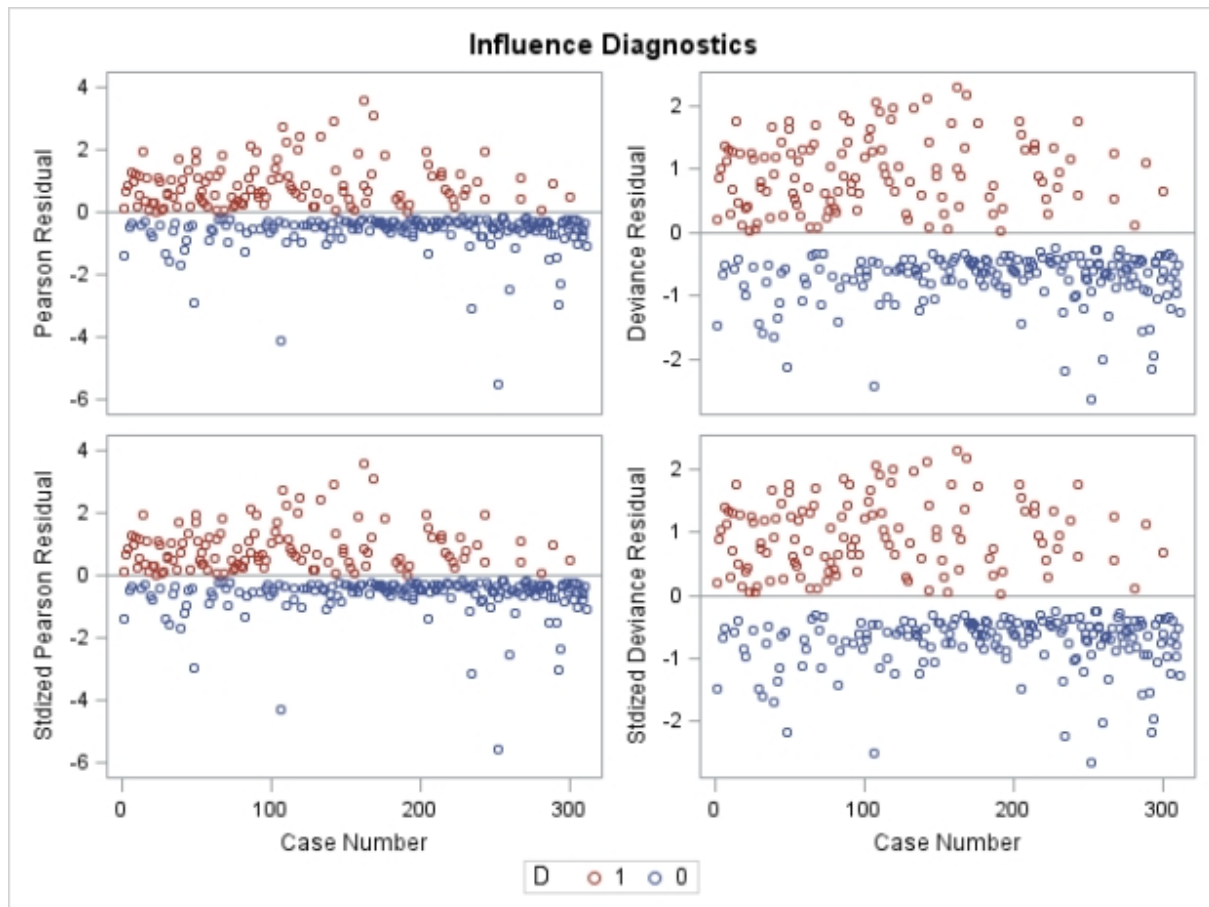
Number of unique profiles: 276



Partition for the Hosmer and Lemeshow Test					
Group	Total	D = 1		D = 0	
		Observed	Expected	Observed	Expected
1	28	1	1.76	27	26.24
2	28	2	2.75	26	25.25
3	28	3	3.87	25	24.13
4	28	5	5.20	23	22.80
5	28	6	7.04	22	20.96
6	28	11	10.36	17	17.64
7	28	17	13.78	11	14.22
8	28	21	18.89	7	9.11
9	28	23	23.93	5	4.07
10	24	22	23.42	2	0.58

Logistic Regression Results**The LOGISTIC Procedure****Number of unique profiles: 276****Hosmer and Lemeshow Goodness-of-Fit Test**

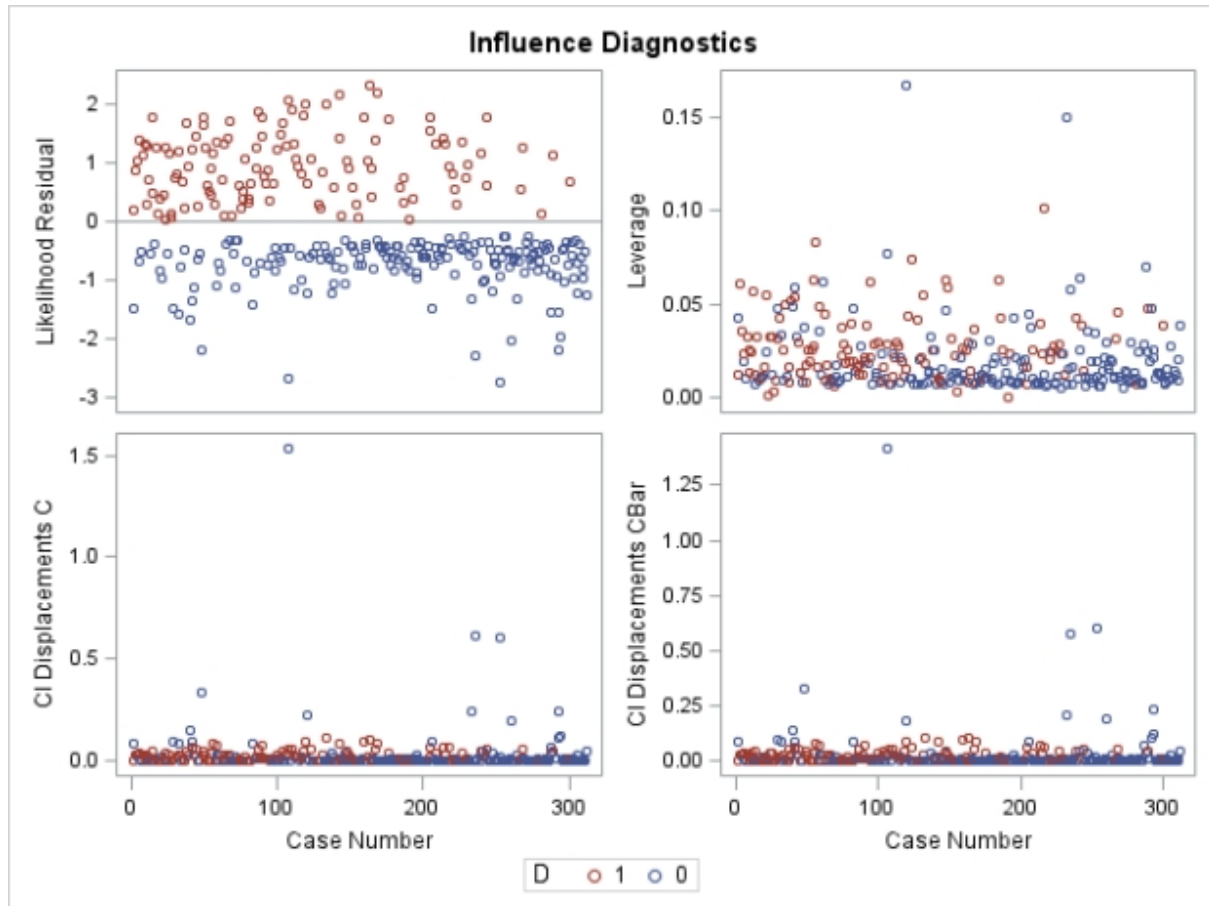
Chi-Square	DF	Pr > ChiSq
7.1239	8	0.5233



Logistic Regression Results

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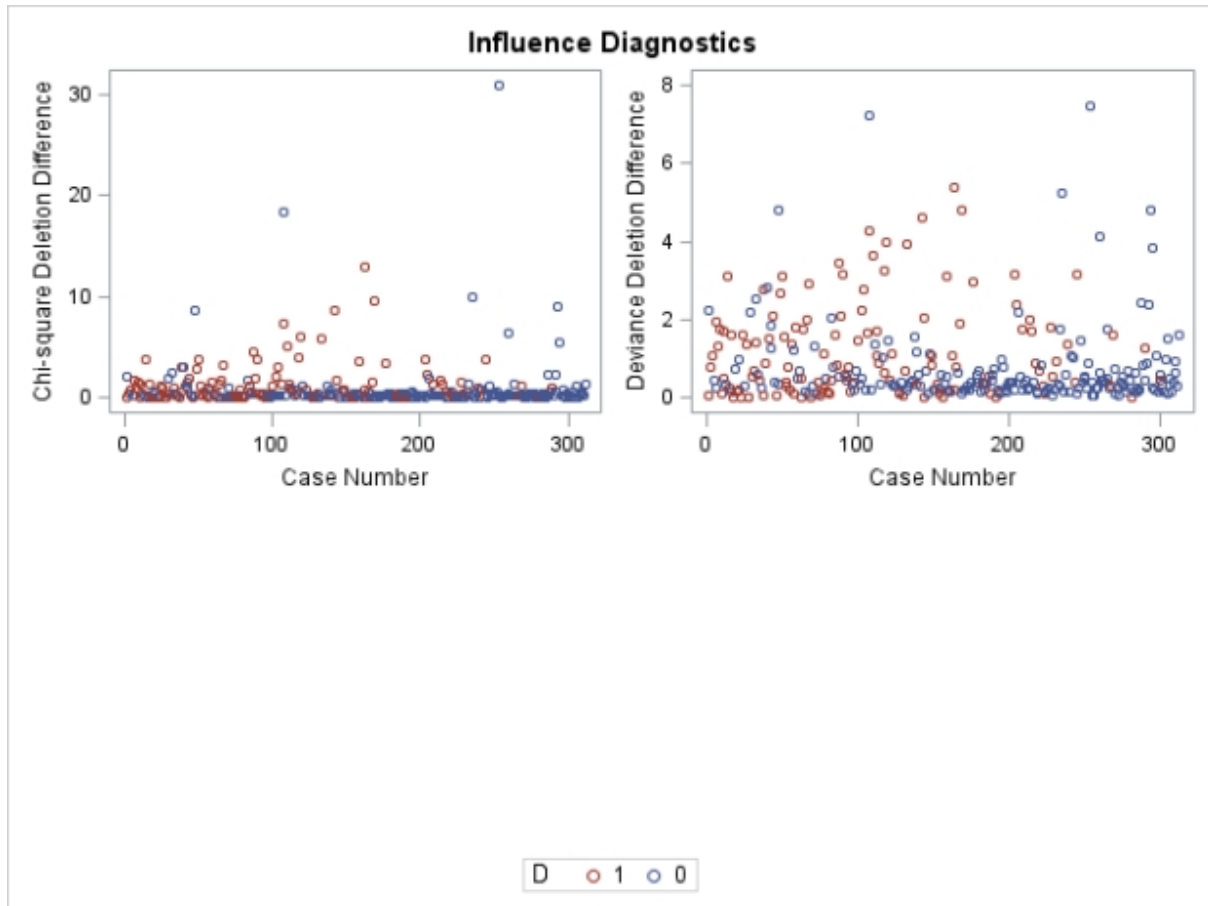
Number of unique profiles: 276



Logistic Regression Results

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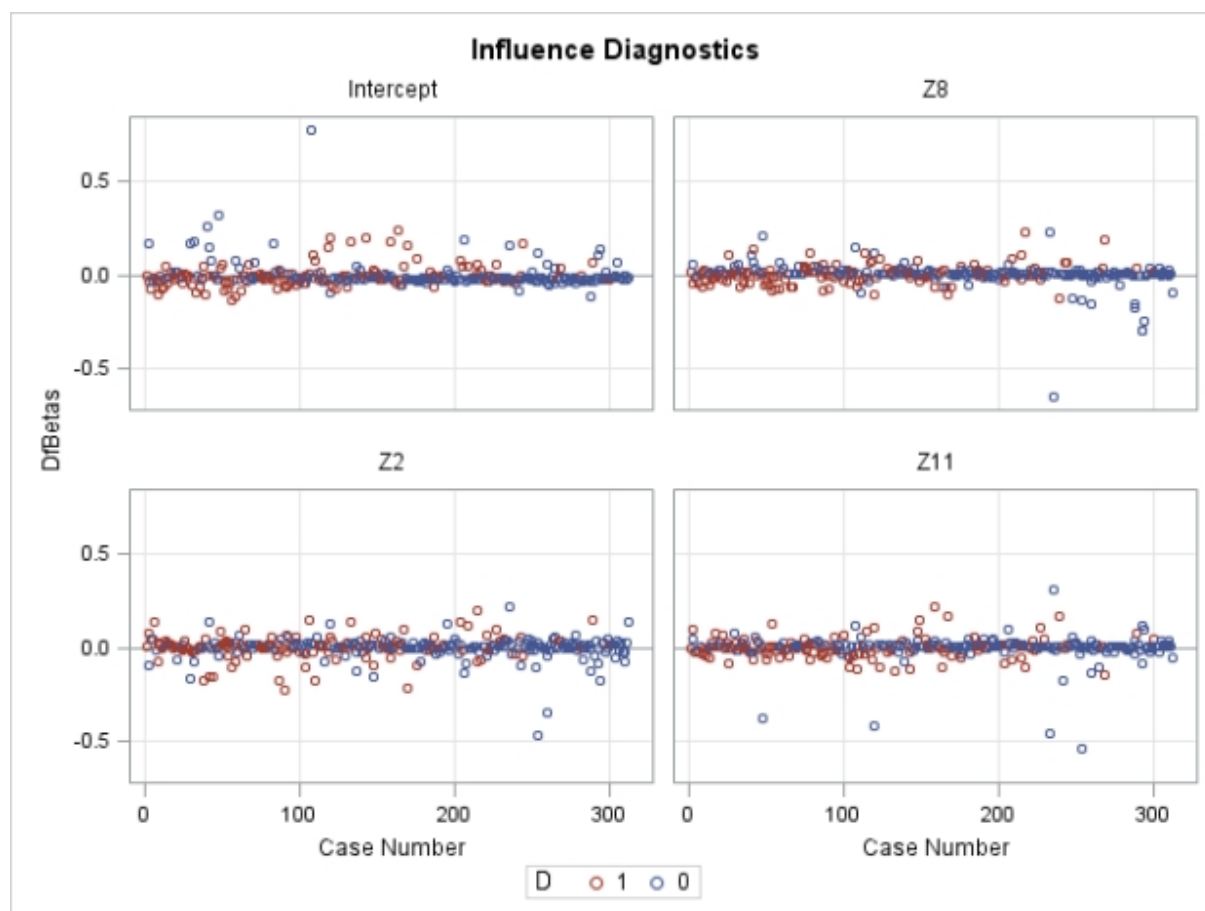
Number of unique profiles: 276



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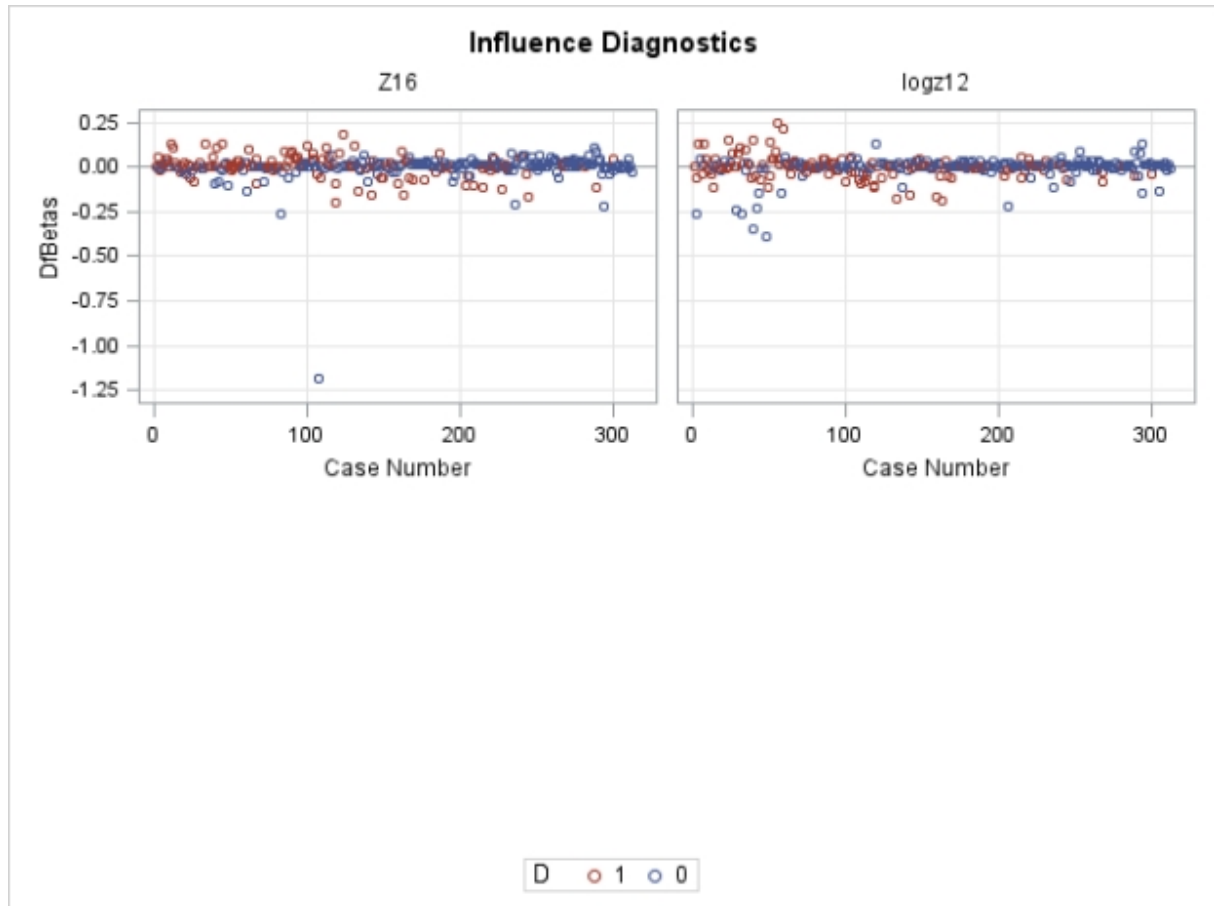
Number of unique profiles: 276



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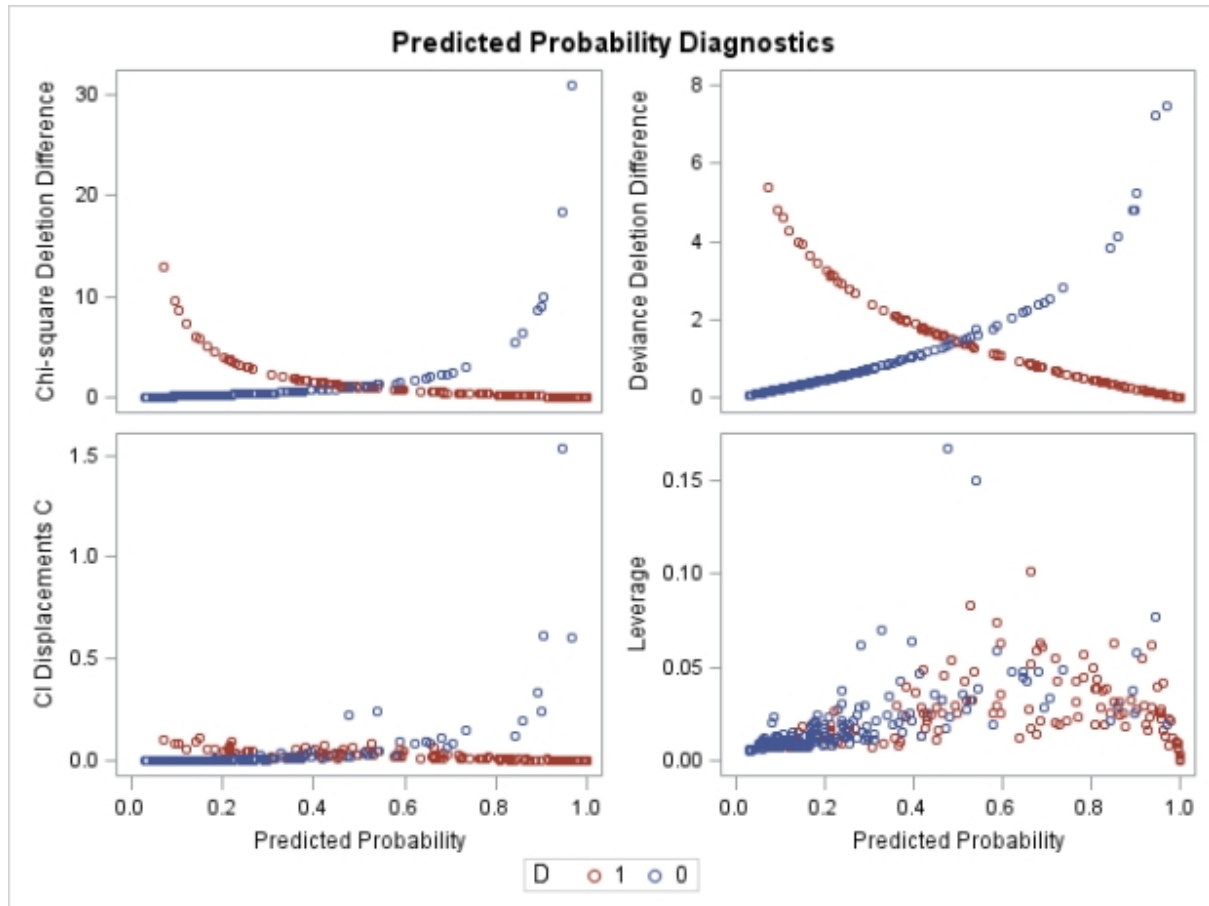
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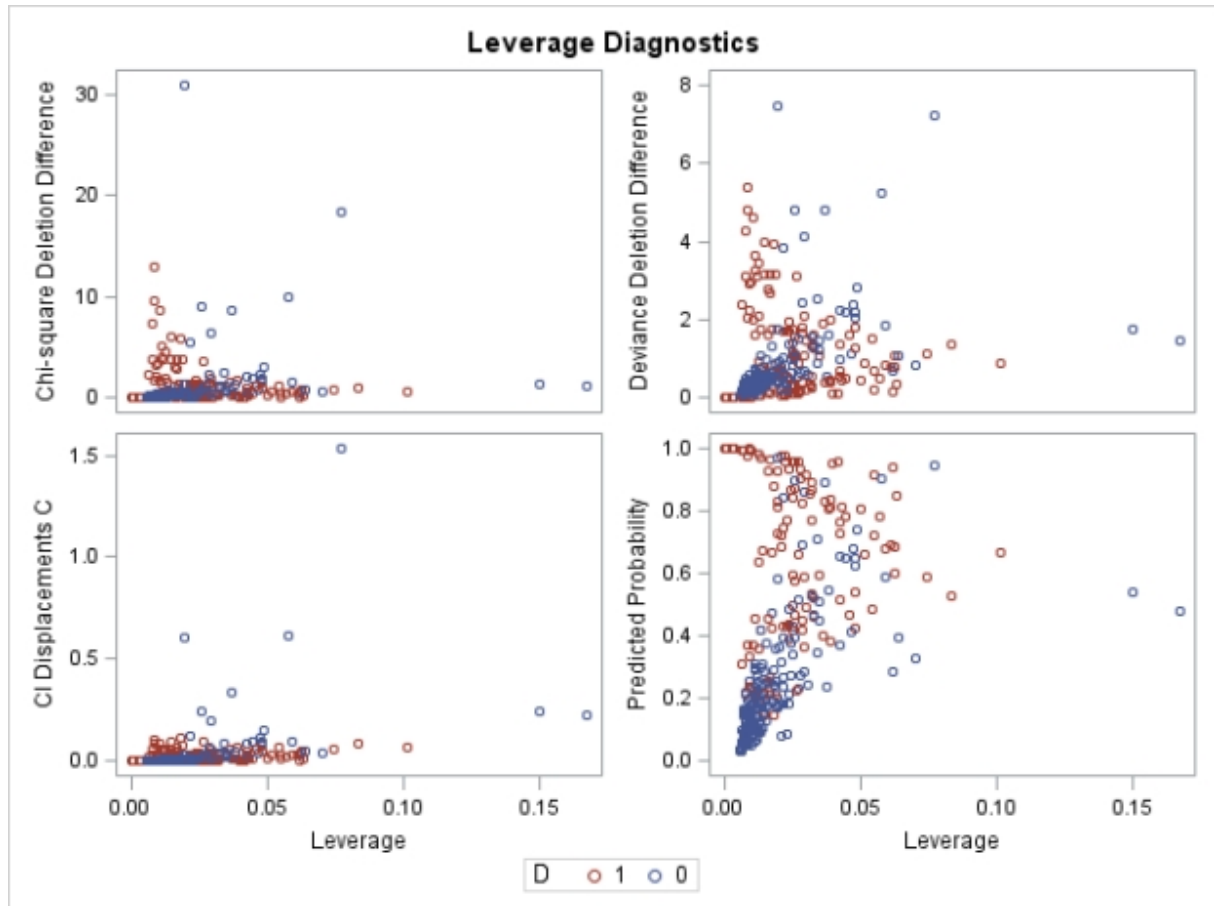
Number of unique profiles: 276



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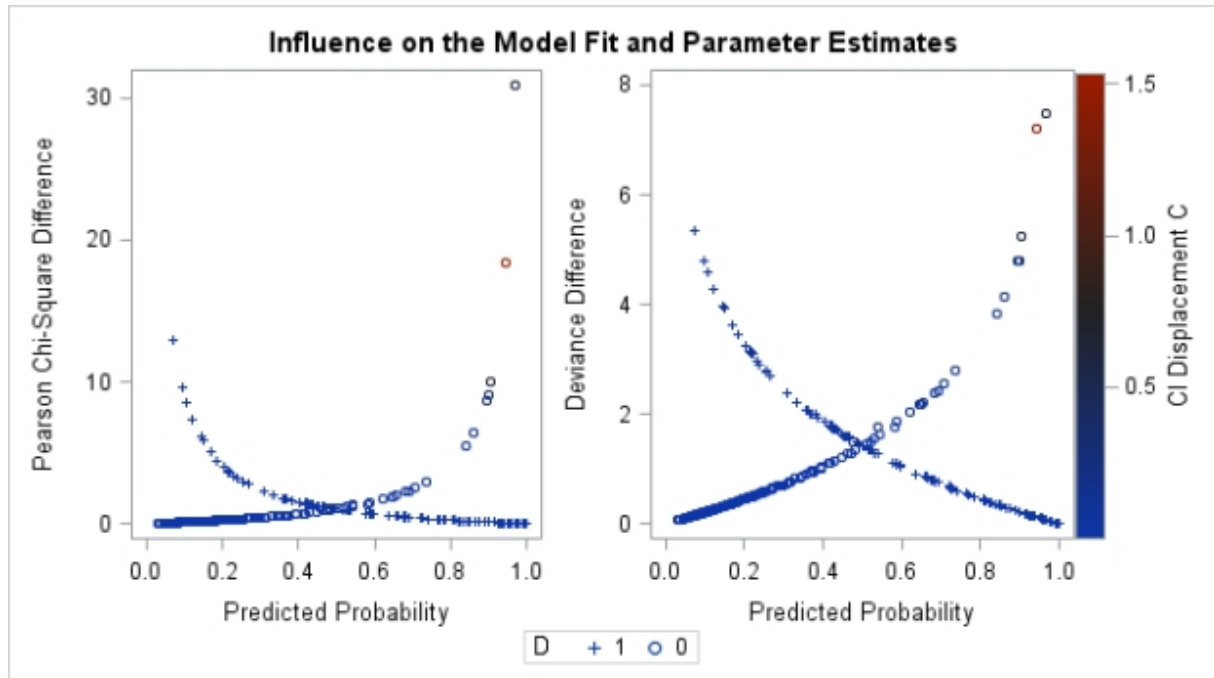
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