Generalized Regression for Starbucks NPS

Model Comparison

Show	Response Distribution	Estimation Method	Validation Method	Nonzero Parameters	AICc	BIC	Generalized RSquare	Validation Generalized RSquare
☐	Poisson	Maximum Likelihood	None	4	345.1616	353.92115	0.1991438	.
☐	Poisson	Ridge	Holdback	4	234.30666	241.3545	0.1799586	0.1287178
☐	Poisson	Double Lasso	Holdback	4	233.47697	240.52481	0.154208	0.1801505
☐	Negative Binomial	Lasso	Holdback	4	232.35413	239.40197	0.2603	0.0211375
☑	Negative Binomial	Double Lasso	Holdback	5	252.35868	260.93354	0.3690745	0.4969383
☐	Negative Binomial	Ridge	Holdback	5	253.65209	262.22696	0.2479057	0.2289289

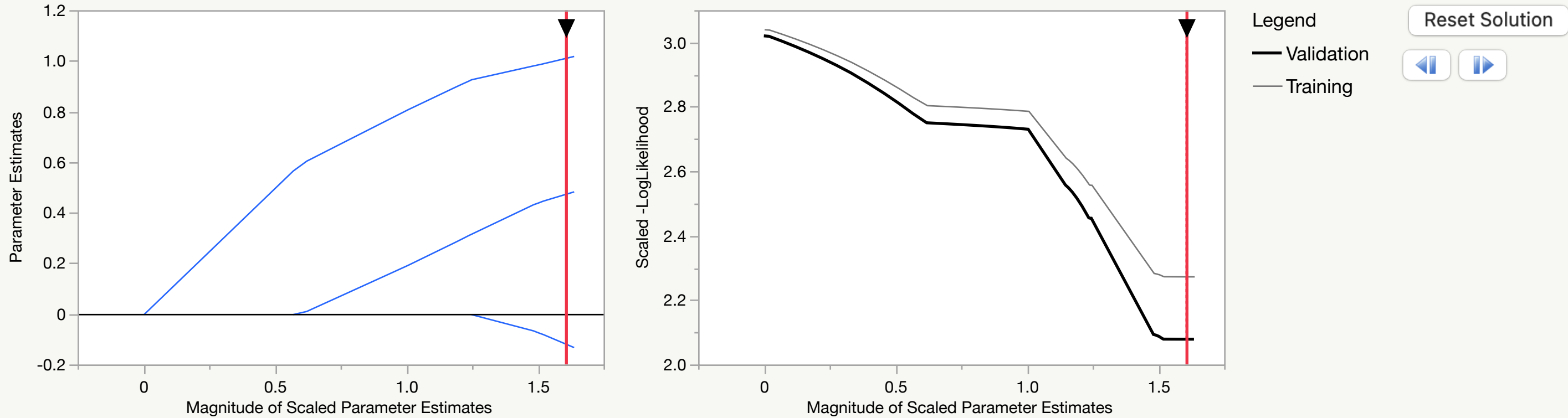## Negative Binomial Double Lasso with Holdback Validation

Model Summary

Response	Starbucks NPS
Distribution	Negative Binomial
Estimation Method	Double Lasso
Validation Method	Holdback
Mean Model Link	Log
Dispersion Model Link	Identity

Measure	Training	Validation
Number of rows	53	23
Sum of Frequencies	53	23
-LogLikelihood	120.54104	47.806566
Number of Parameters	5	5
BIC	260.93354	111.2906
AICc	252.35868	109.14254
Generalized RSquare	0.3690745	0.4969383
Lambda Penalty	0.0751697	.

Estimation Details

Number of Grid Points	150
Minimum Penalty Fraction	0
Grid Scale	Square Root

Solution Path

Parameter Estimates for Original Predictors

Term	Estimate	Std Error	Wald ChiSquare	Prob > ChiSquare	Lower 95%	Upper 95%
Intercept	1.8592587	0.1073499	299.96879	<.0001*	1.6488567	2.0696607
Factor1	0.1820595	0.078641	5.3595545	0.0206*	0.027926	0.336193
Factor2	-0.023266	0.067922	0.1173312	0.7319	-0.15639	0.1098589
Factor3	0.0871958	0.0671004	1.6886557	0.1938	-0.044319	0.2187101

Negative Binomial Distribution Parameters	Estimate	Std Error	Wald ChiSquare	Prob > ChiSquare	Lower 95%	Upper 95%
Dispersion	0.0001335	0	.	.	0.0001335	0.0001335