

Customer Value Model Prediction

Creation Date: Saturday, June 4, 2022 02:18:06 AM

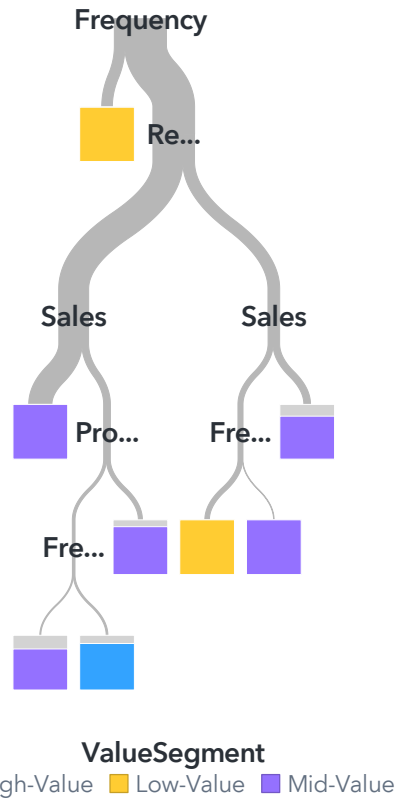
Author: gladys.patricia@student.umn.ac.id

Decision Tree

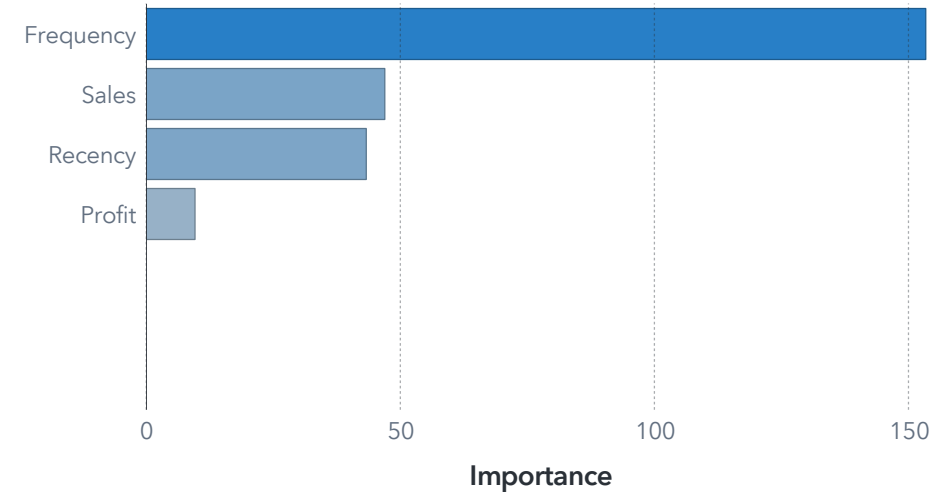
Decision Tree **ValueSegment** (event=Mid-Value) Validation Misclassification Rate **0.0453** Observations Used **885**

⚠ A1.1

Tree



Variable Importance



Confusion Matrix

Observed							
		Training			Validation		
		High-Value	Low-Value	Mid-Value	High-Value	Low-Value	Mid-Value
		Partition					
High-Value	17		12	5		5	
Low-Value		179	14		62	6	
Mid-Value	3	1	394	1		186	
Predicted							
	High-Value	Low-Value	Mid-Value	High-Value	Low-Value	Mid-Value	

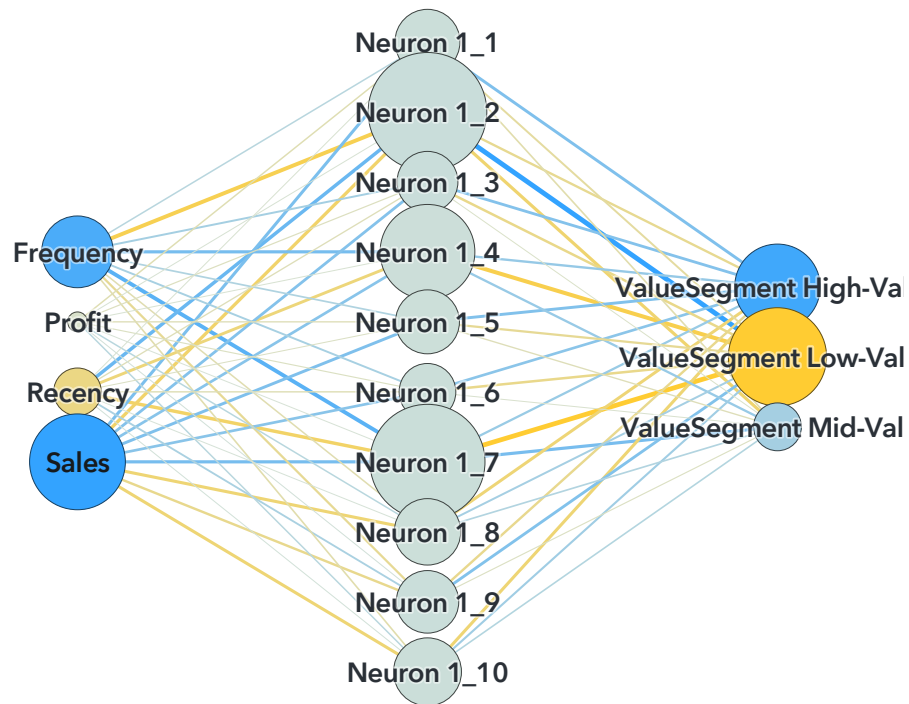
⚠ A1.2

Neural Network

Neural Network **ValueSegment** (event=Mid-Value) Validation Misclassification Rate **0.1019** Observations Used **885**

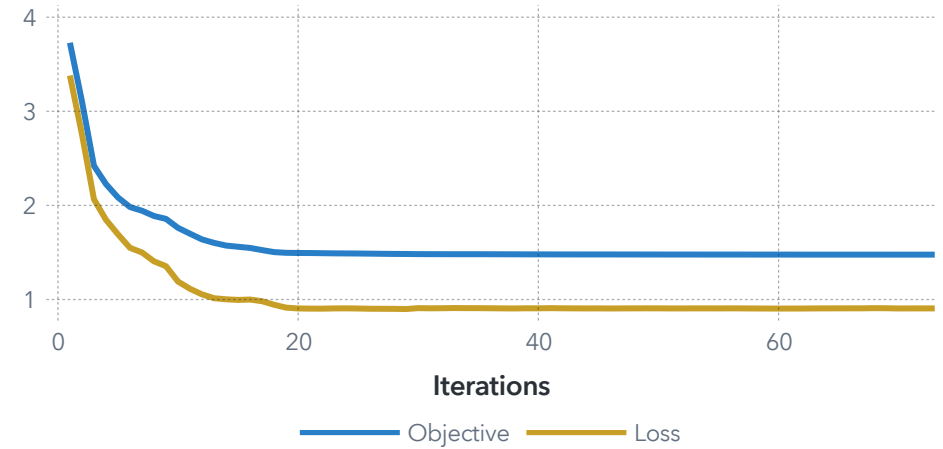
⚠ A2.1

Network



Iteration Plot

Objective / Loss



Confusion Matrix

Observed

Observed	Training			Validation		
	High-Value	Low-Value	Mid-Value	High-Value	Low-Value	Mid-Value
	10	19	3	7	56	12
	3	12	383	3	5	179
Predicted	Training			Validation		
Partition	High-Value	Low-Value	Mid-Value	High-Value	Low-Value	Mid-Value

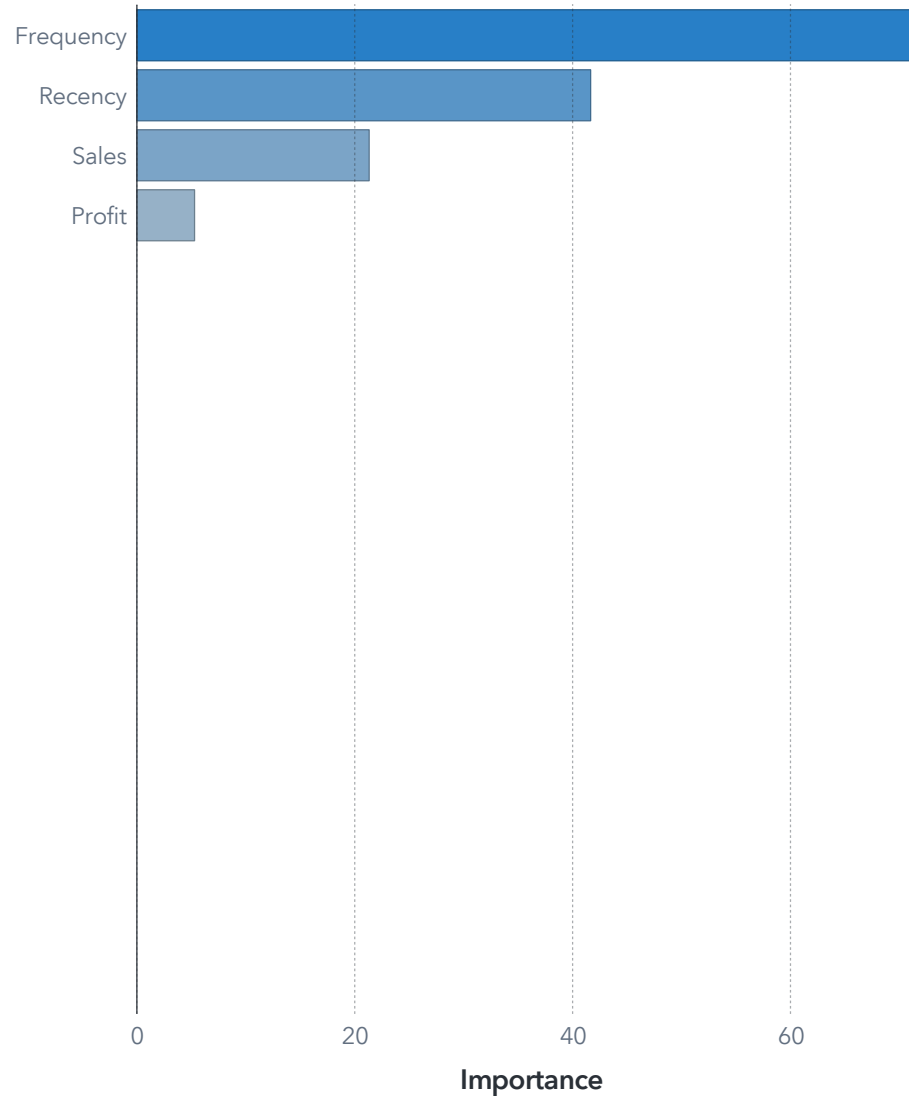
⚠ A2.2

Random Forest

Forest **ValueSegment** (event=Mid-Value) Validation Misclassification Rate **0.0755** Observations Used **885**

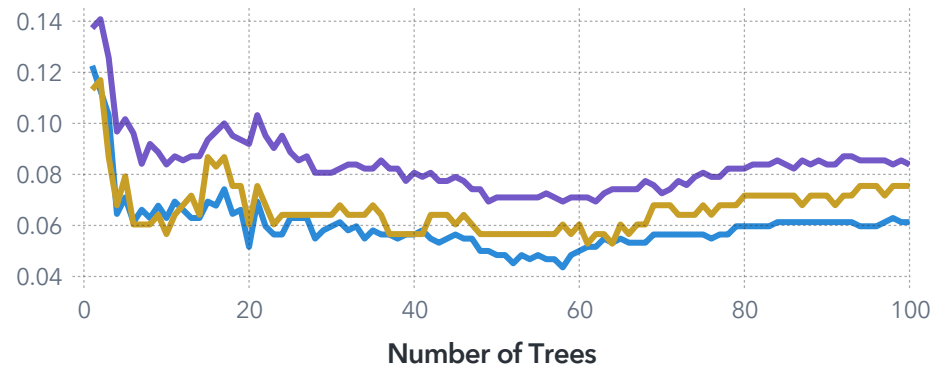
⚠ A3.1

Variable Importance



Error Plot

Misclassification Rate



Misclassification Rate
 Training Out-of-bag Validation

Confusion Matrix

Observed

High-Value	7		22	1		9
Low-Value		180	13		62	6
Mid-Value		3	395	1	4	182
Predicted	High-Value	Low-Value	Mid-Value	High-Value	Low-Value	Mid-Value
Partition	Training			Validation		

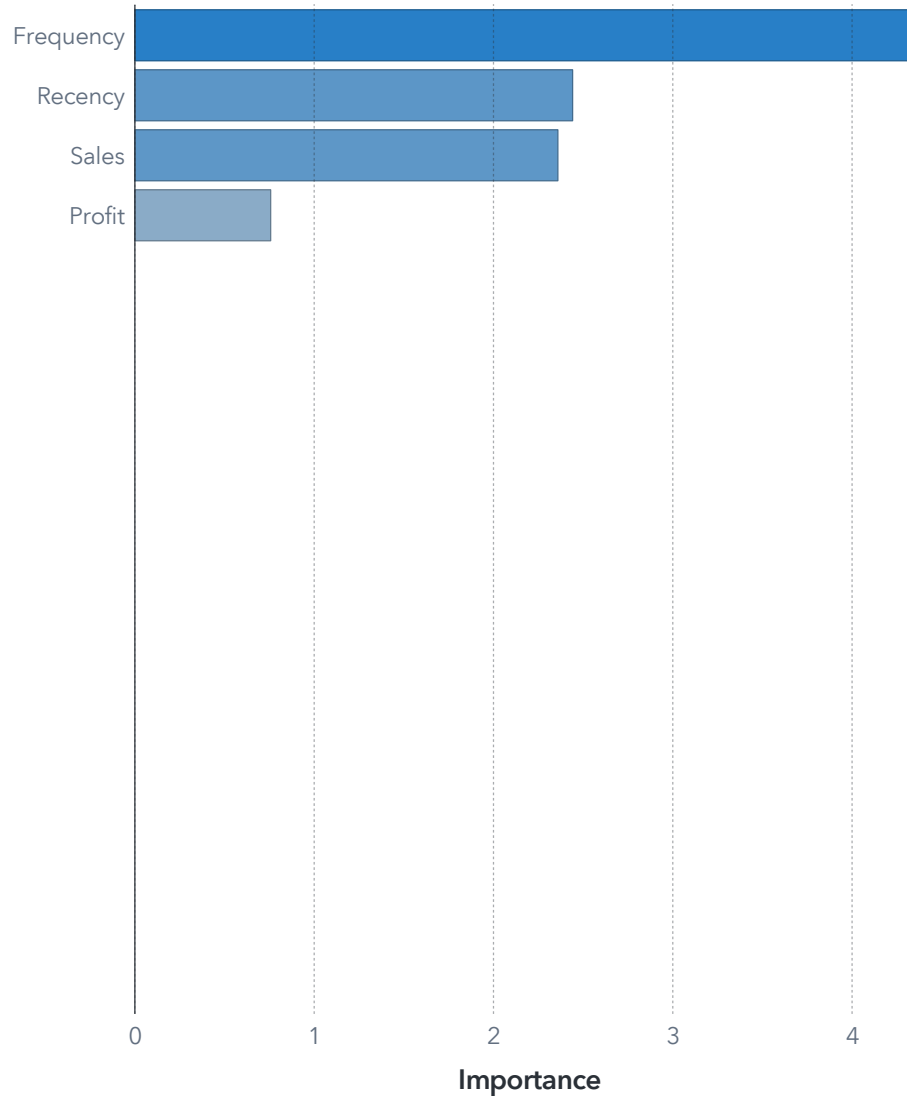
⚠ A3.2

Gradient Boosting

Gradient Boosting **ValueSegment** (event=Mid-Value) Validation Misclassification Rate **0.0340** Observations Used **885**

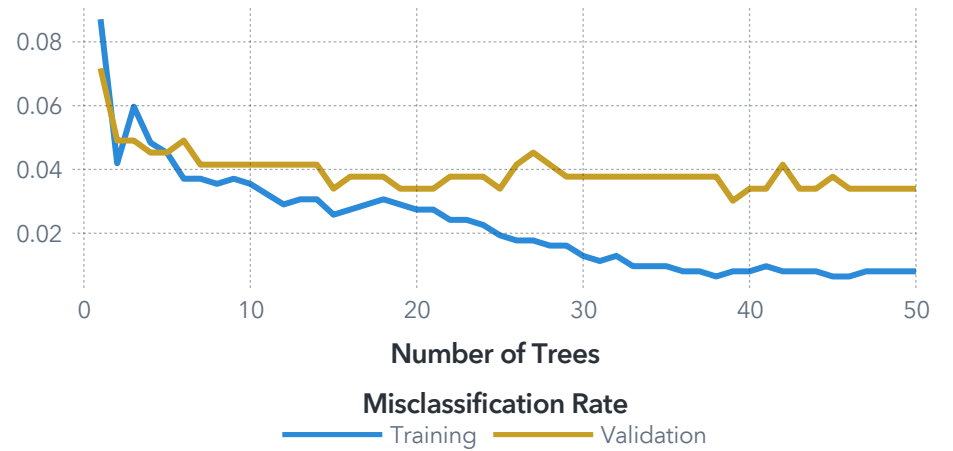
⚠ A4.1

Variable Importance



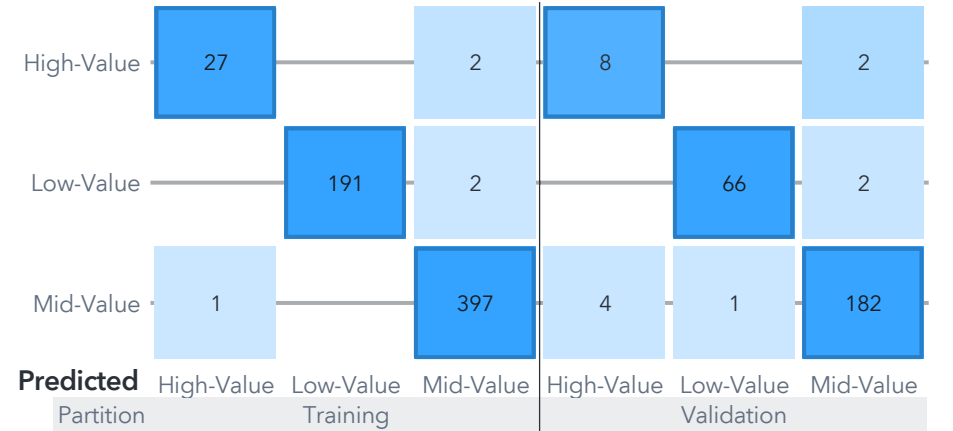
Iteration Plot

Misclassification Rate



Confusion Matrix

Observed



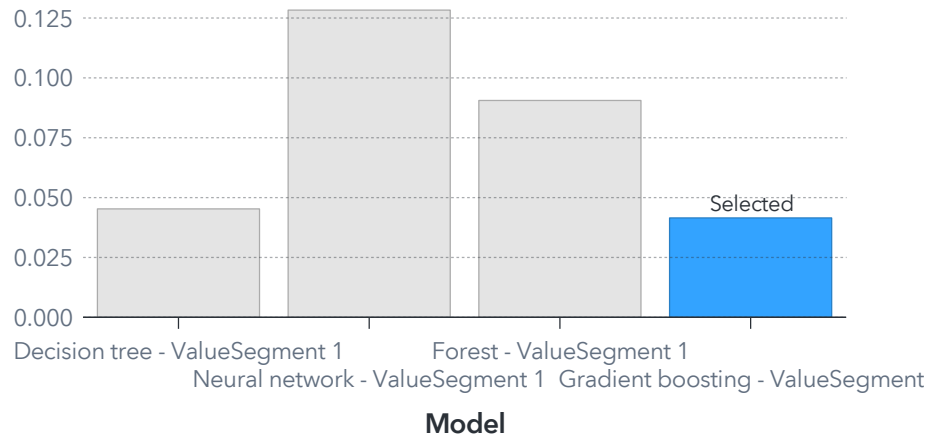
⚠ A4.2

Model Selection

Model Comparison ValueSegment (event=Mid-Value)

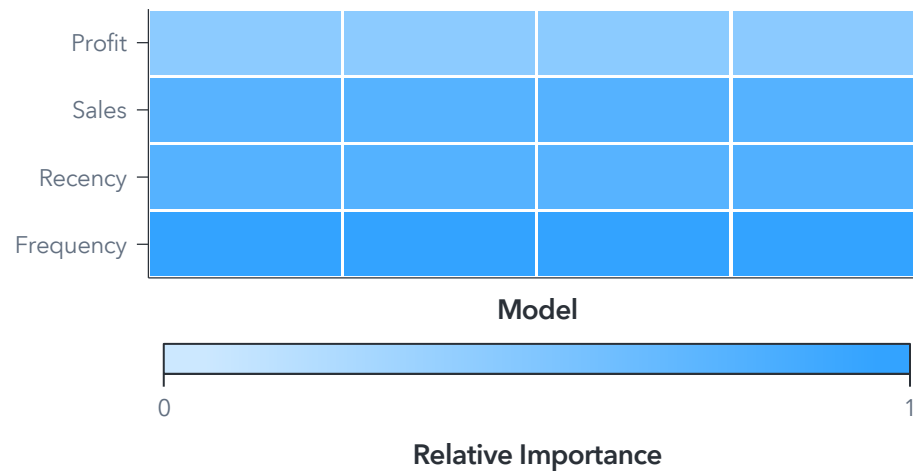
Fit Statistic

Validation: Misclassification Rate



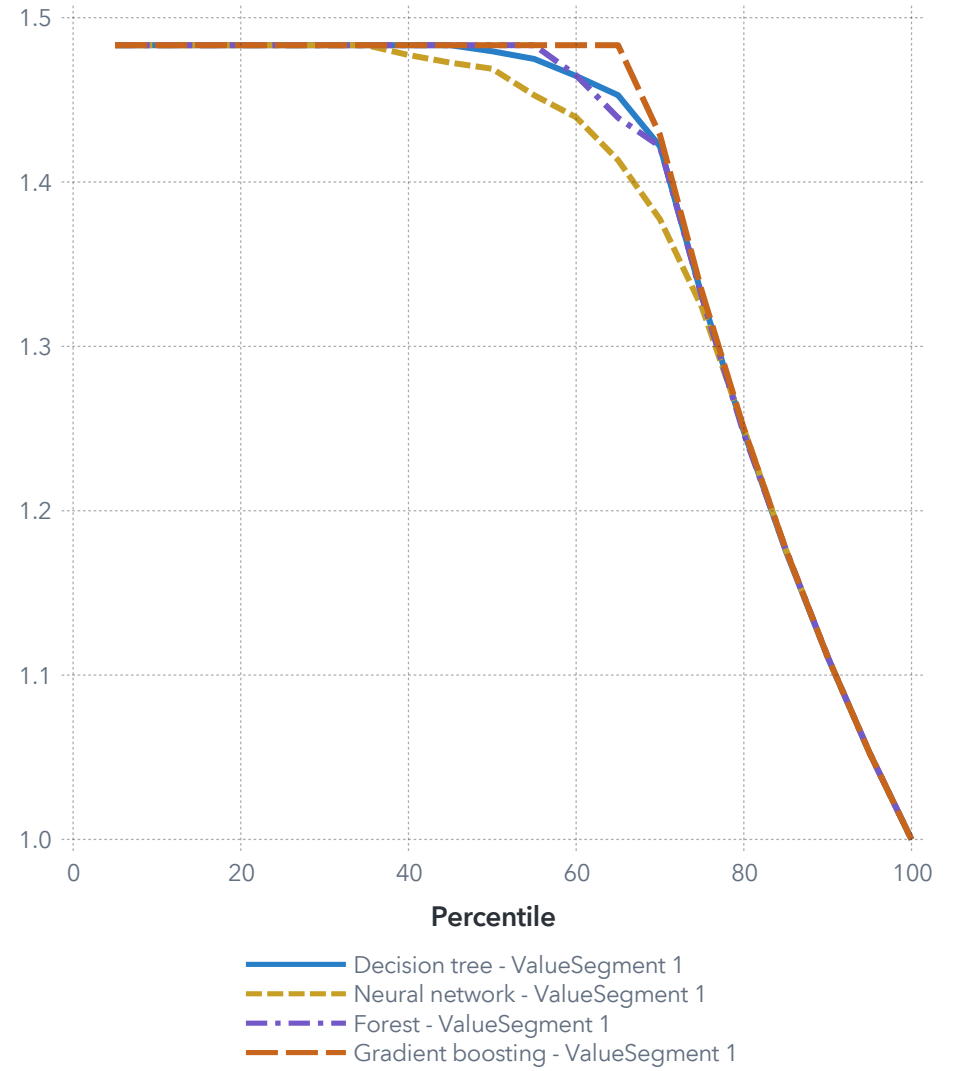
Relative Importance

Variable



Lift

Training: Cumulative Lift



Appendix

A1.1 Header

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A1.2 Confusion Matrix

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A2.1 Header

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A2.2 Confusion Matrix

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A3.1 Header

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A3.2 Confusion Matrix

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A4.1 Header

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A4.2 Confusion Matrix

Warnings: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.

A5.1 Lift

Warnings: Decision tree - ValueSegment 1: The percentile calculation required for model assessment was unsuccessful. Generally, this is caused by a poor model or poor choice of model assessment parameters. Change the number of bins or specify a smaller tolerance value.