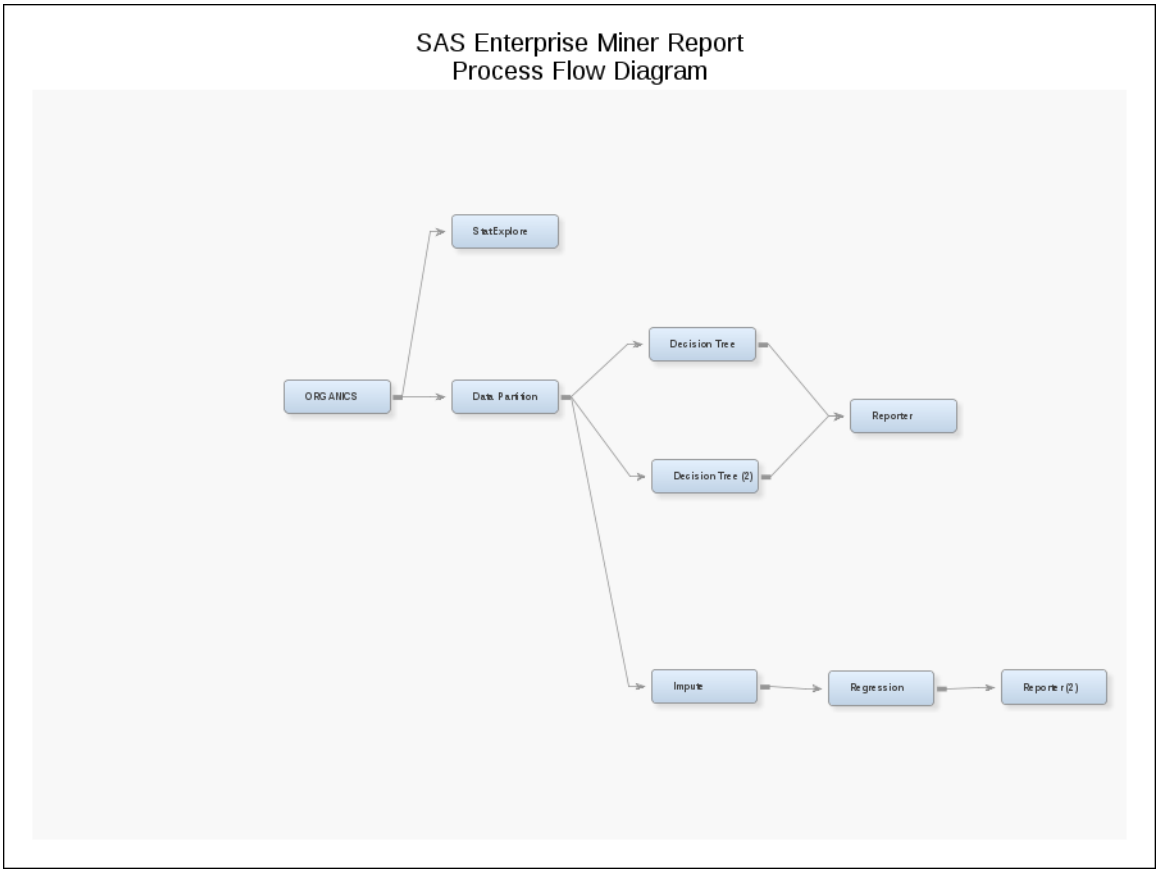
# SAS Enterprise Miner Report

User = garthgarthmorten0
Date = 01:16:50 October 11
Project = Homework2
Diagram = Organics

Start Node = Report2
Node label = Reporter (2)
Nodes = ALL
Showall = N

Format = PDF
Style = LISTING



# SAS Enterprise Miner Report

## Node=Data Partition
## Summary

Node id = Part
Node label = Data Partition
Meta path = Ids => Part
Notes =

## Node=Data Partition
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | Partition | | Method | DEFAULT | | TestPct | 0 | 30 |
| ClassDistribution | Y | | OutputType | DATA | | TrainPct | 50 | 40 |
| IntervalDistribution | Y | | RandomSeed | 12345 | | ValidatePct | 50 | 30 |

## Node=Data Partition
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| TARGET | BINARY | 1 | TargetBuy |
| REJECTED | INTERVAL | 1 | TargetAmt |
| REJECTED | NOMINAL | 1 | DemCluster |
| INPUT | INTERVAL | 4 | DemAffl DemAge PromSpend PromTime |
| INPUT | NOMINAL | 5 | DemClusterGroup DemGender DemReg DemTVReg PromClass |
| ID | NOMINAL | 1 | ID |

# SAS Enterprise Miner Report

## Node=Decision Tree
## Summary

Node id = Tree
Node label = Decision Tree
Meta path = Ids => Part => Tree
Notes =

## Node=Decision Tree
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | DecisionTree | | Kass | Y | | Pred | N | |
| AVG | Y | | KassApply | BEFORE | | Predict | Y | |
| AssessMeasure | ASE | PROFIT/LOSS | LeafSize | 5 | | ProfitLoss | NONE | |
| AssessPercentage | 0.25 | | Leafid | Y | | RASE | N | |
| CV | N | | Maxbranch | 2 | | SampleMethod | RANDOM | |
| CVNIter | 10 | | Maxdepth | 6 | | SampleSeed | 12345 | |
| CVRepeat | 1 | | MinCatSize | 5 | | SampleSize | 10000 | |
| CVSeed | 12345 | | MissingValue | USEINSEARCH | | ShowNodeId | Y | |
| ClassColorBy | PERCENTCORRECT | | NSubtree | 1 | | ShowValid | Y | |
| Count | Y | | NodeRole | SEGMENT | | SigLevel | 0.2 | |
| CreateSample | DEFAULT | | NodeSample | 20000 | | SplitPrecision | 4 | |
| Criterion | DEFAULT | | NominalCriterion | PROBCHISQ | | Splitsize | . | |
| Depth | Y | | Nrules | 5 | | Subtree | ASSESSMENT | |
| Dummy | N | | Nsurrs | 0 | | Target | ALL | |
| Exhaustive | 5000 | | NumInputs | 1 | | ToolType | MODEL | |
| Freeze | N | | NumSingleImp | 5 | | TrainMode | BATCH | |
| ImportModel | N | | ObsImportance | N | | UseDecision | N | |
| ImportedTreeData | | | OrdinalCriterion | ENTROPY | | UseMultipleTarget | N | |
| Inputs | N | | PercentCorrect | N | | UsePriors | N | |
| IntColorBy | AVG | | Performance | DISK | | UseVarOnce | N | |
| IntervalCriterion | PROBF | | Precision | 4 | | VarSelection | Y | |

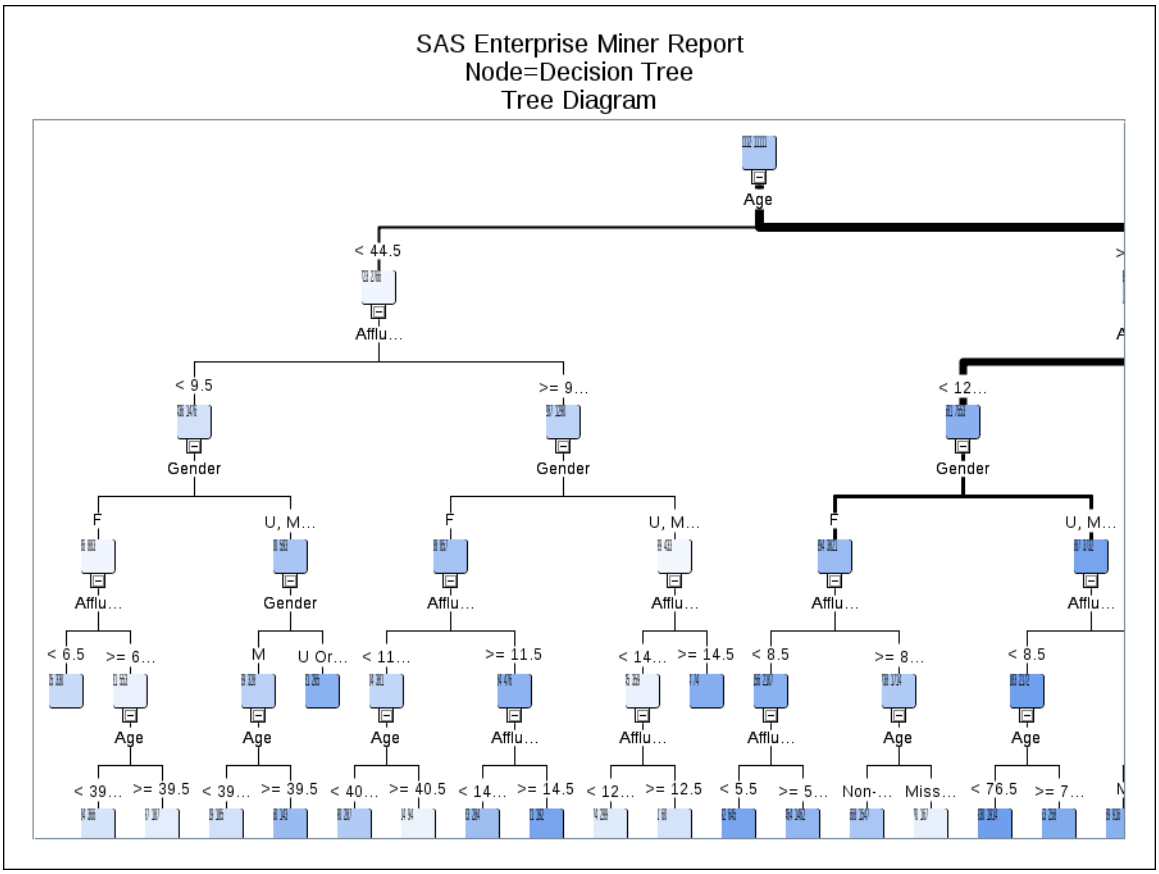
## Node=Decision Tree
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| TARGET | BINARY | 1 | TargetBuy |
| INPUT | INTERVAL | 4 | DemAffl DemAge PromSpend PromTime |
| INPUT | NOMINAL | 5 | DemClusterGroup DemGender DemReg DemTVReg PromClass |
| ID | INTERVAL | 1 | _dataobs_ |
| ID | NOMINAL | 1 | ID |

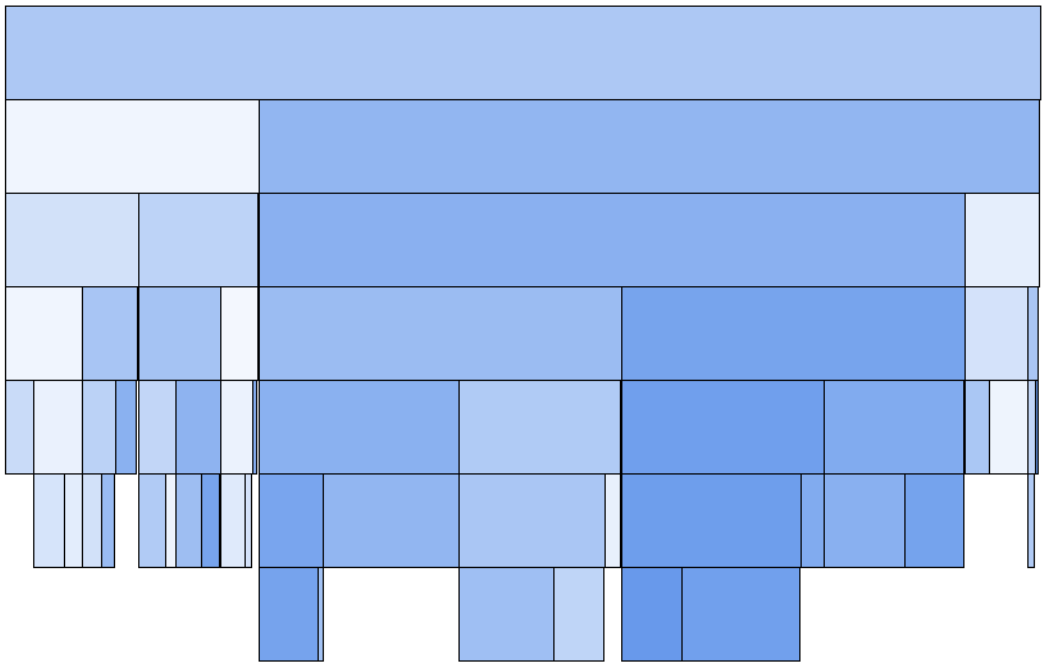
## Node=Decision Tree
## Model Fit Statistics

Target=TargetBuy Target Label=Organics Purchase Indicator

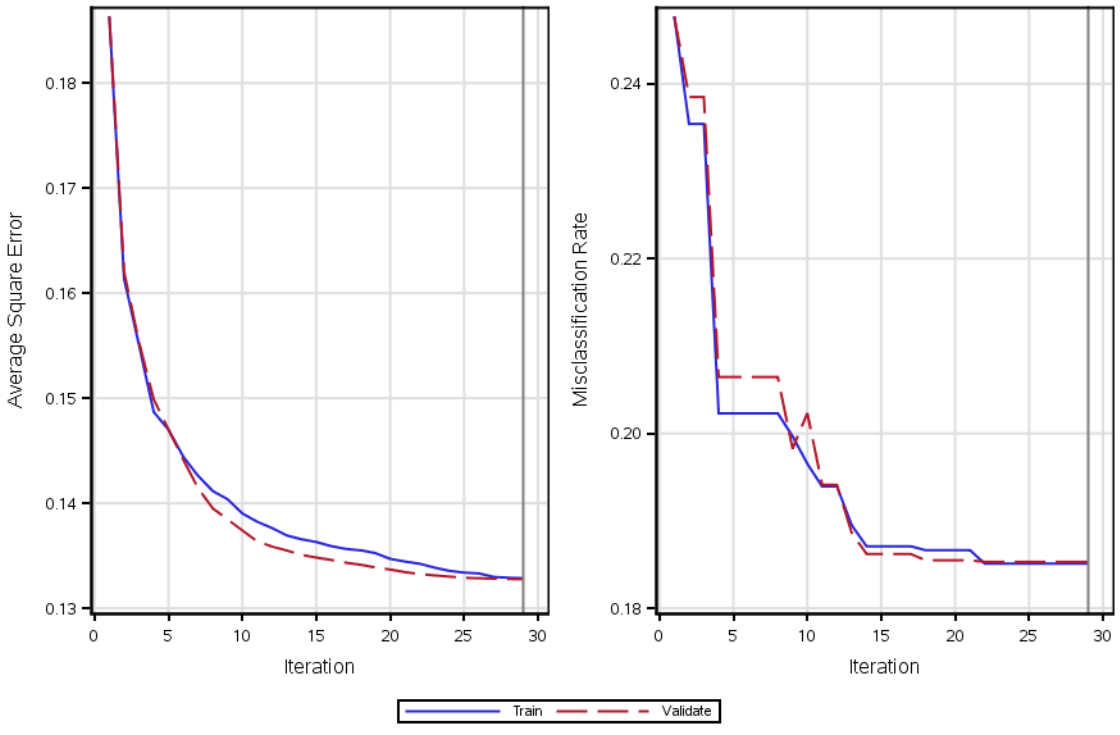
| Label of Statistic | Train | Validation | Test |
|---|---|---|---|
| Sum of Frequencies | 11112.00 | 11111.00 | . |
| Misclassification Rate | 0.19 | 0.19 | . |
| Maximum Absolute Error | 0.99 | 1.00 | . |
| Sum of Squared Errors | 2952.71 | 2950.48 | . |
| Average Squared Error | 0.13 | 0.13 | . |
| Root Average Squared Error | 0.36 | 0.36 | . |
| Divisor for ASE | 22224.00 | 22222.00 | . |
| Total Degrees of Freedom | 11112.00 | . | . |

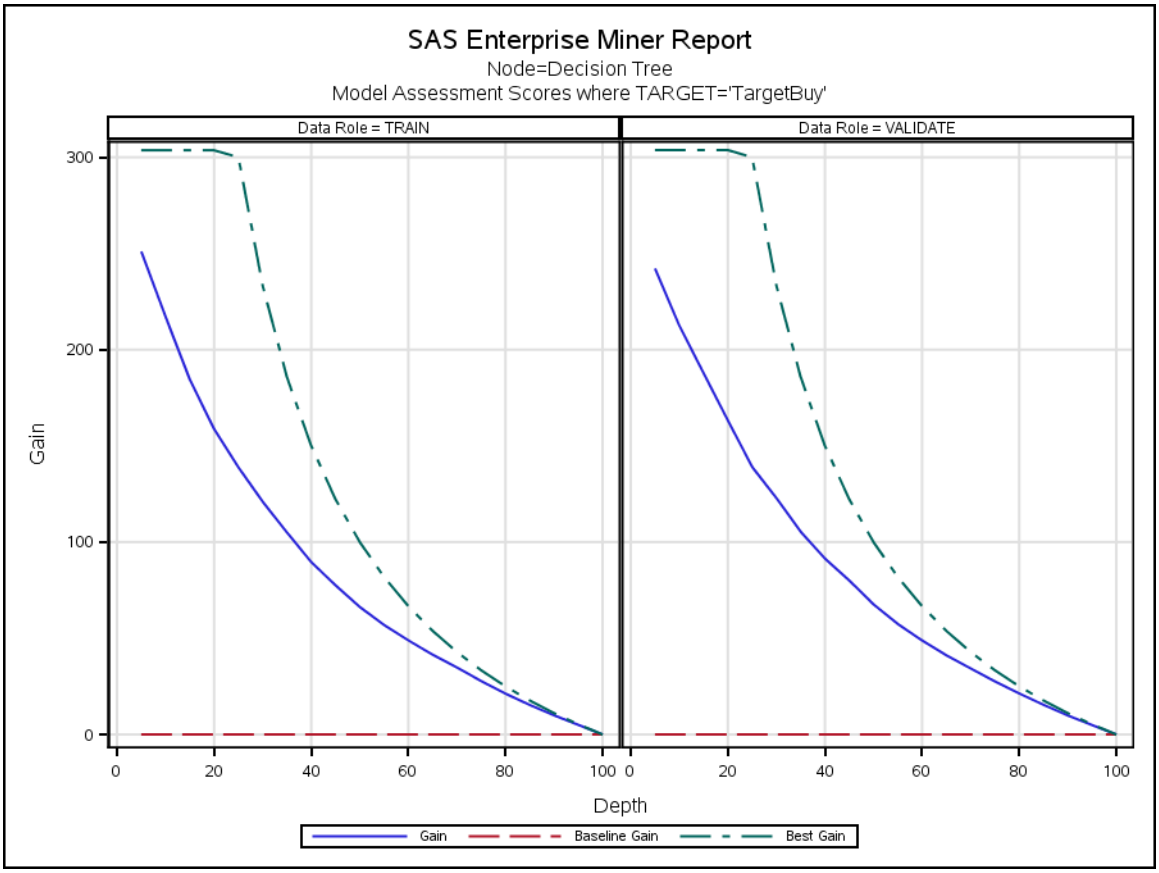


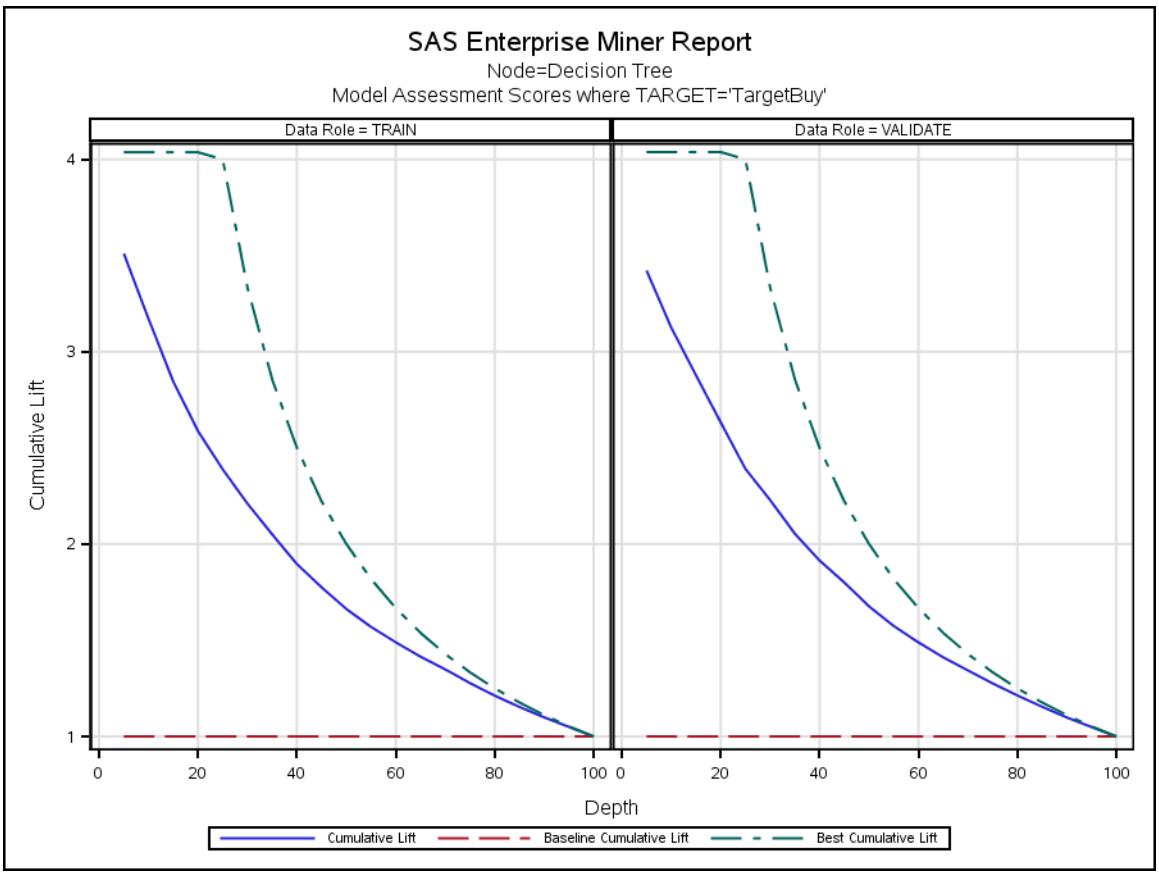
SAS Enterprise Miner Report
Node=Decision Tree
Treemap



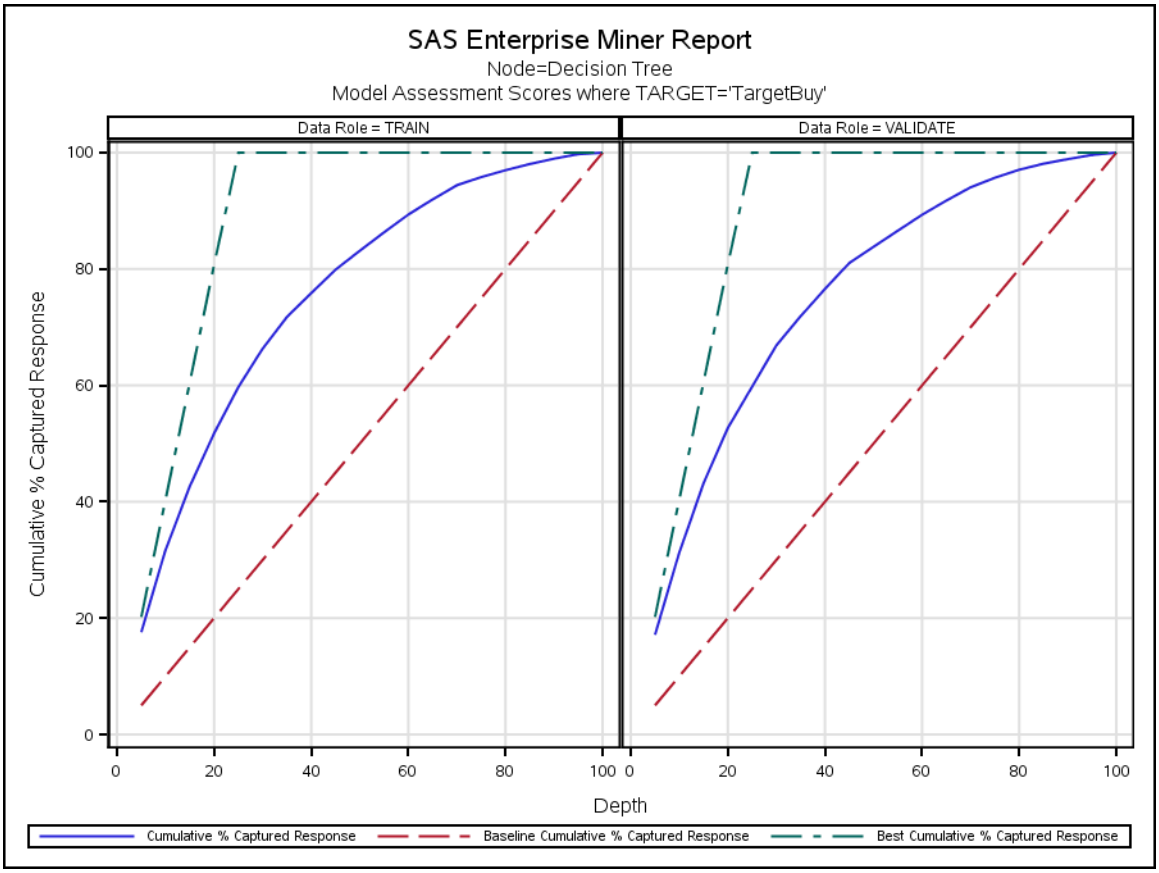
SAS Enterprise Miner Report
Node=Decision Tree
Model Iteration Plots

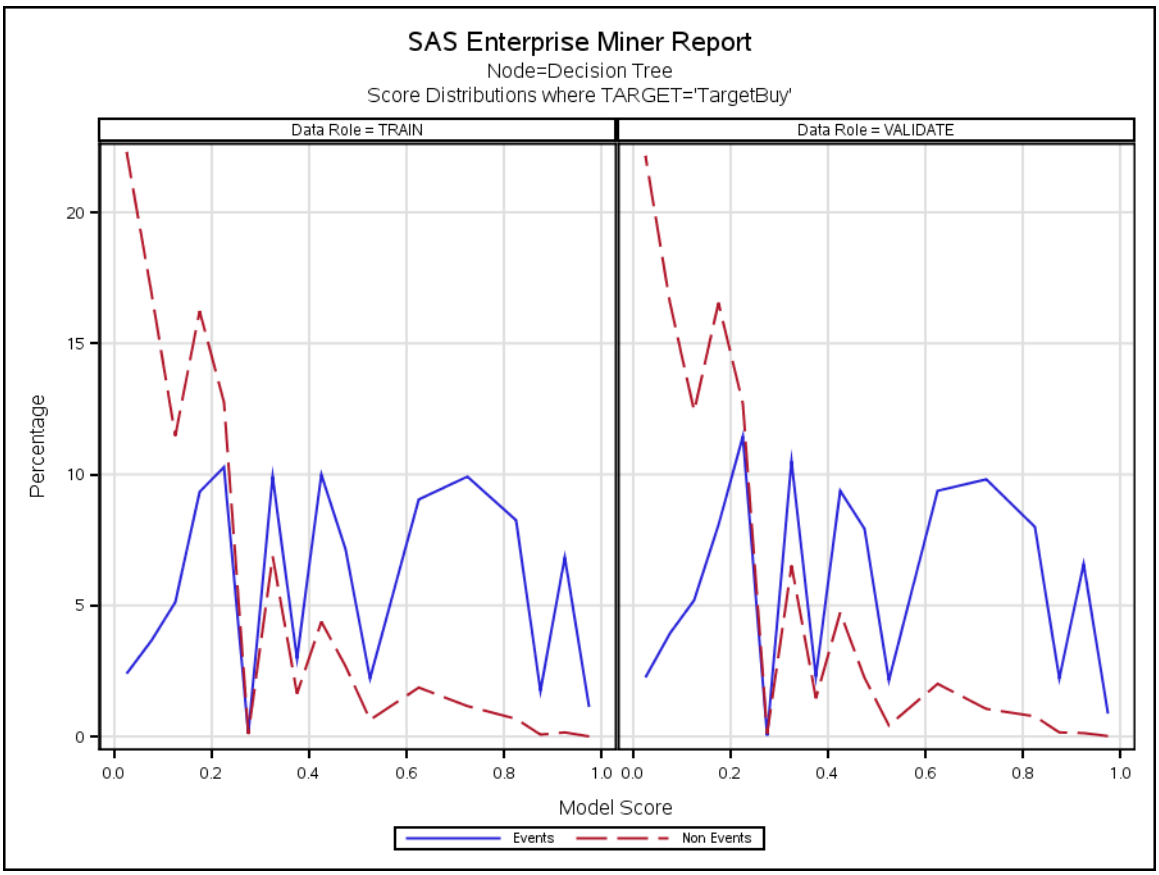



SAS Enterprise Miner Report
Node=Decision Tree
Model Assessment Scores where TARGET='TargetBuy'
Data Role = TRAIN
Data Role = VALIDATE
Gain
300
200
100
0
0
20
40
60
80
100
Depth
Gain
Baseline Gain
Best Gain

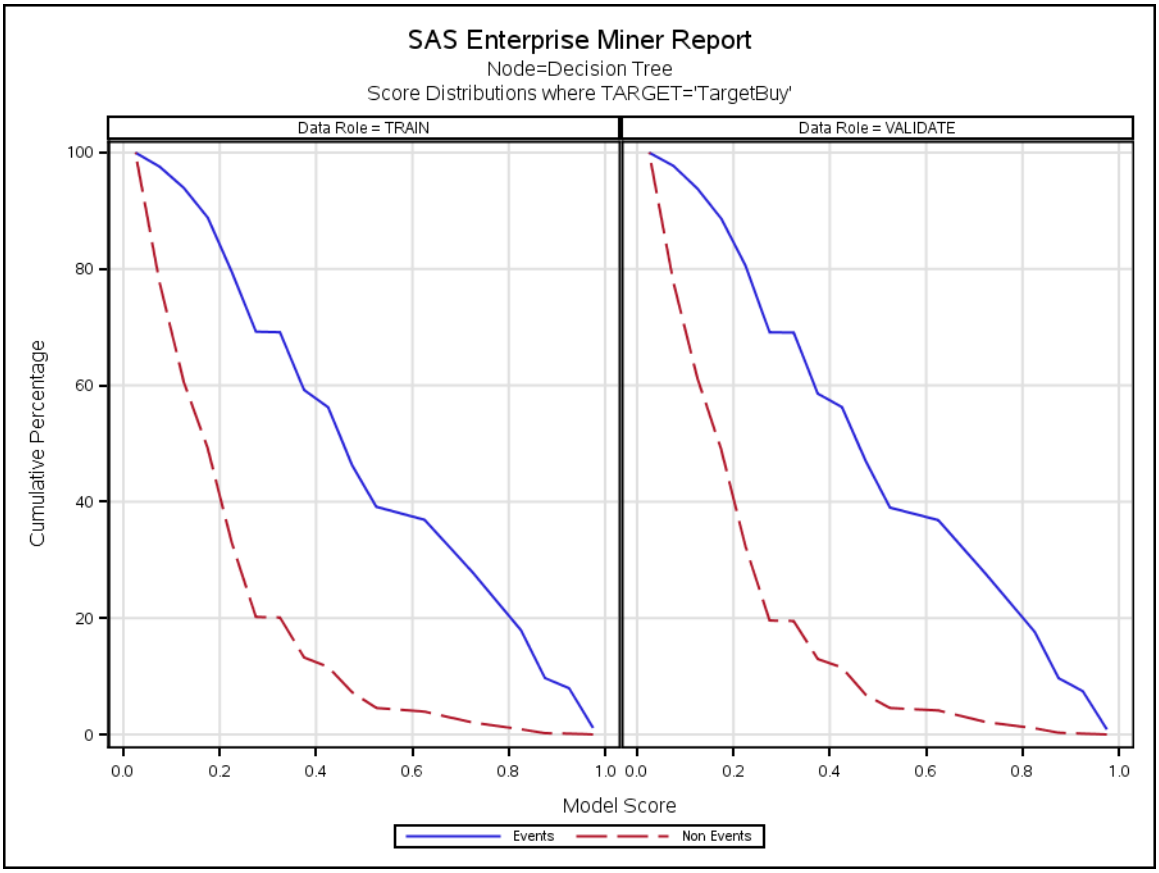

SAS Enterprise Miner Report
Node=Decision Tree
Model Assessment Scores where TARGET='TargetBuy'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative Lift
4
3
2
1
0
20
40
60
80
100
Depth
Cumulative Lift
Baseline Cumulative Lift
Best Cumulative Lift

**SAS Enterprise Miner Report**
**Node=Decision Tree**
**Model Assessment Scores where TARGET='TargetBuy'**



## SAS Enterprise Miner Report
## Node=Decision Tree
## Score Distributions where TARGET='TargetBuy'




## Node=Decision Tree
## Score Distributions

Target Variable=TargetBuy Data Role=TRAIN

| Posterior Probability Range | Number of Events | Percentage of Events | Percentage of Nonevents | Cumulative Percentage of Events | Cumulative Percentage of Nonevents |
|---|---|---|---|---|---|
| 0.95-1.00 | 31 | 1.1260 | 0.0000 | 1.126 | 0.000 |
| 0.90-0.95 | 188 | 6.8289 | 0.1555 | 7.955 | 0.156 |
| 0.85-0.90 | 48 | 1.7436 | 0.0718 | 9.699 | 0.227 |
| 0.80-0.85 | 227 | 8.2456 | 0.6699 | 17.944 | 0.897 |
| 0.70-0.75 | 273 | 9.9165 | 1.1604 | 27.861 | 2.058 |
| 0.60-0.65 | 249 | 9.0447 | 1.8663 | 36.905 | 3.924 |
| 0.50-0.55 | 61 | 2.2158 | 0.6340 | 39.121 | 4.558 |
| 0.45-0.50 | 196 | 7.1195 | 2.6678 | 46.240 | 7.226 |
| 0.40-0.45 | 275 | 9.9891 | 4.3785 | 56.230 | 11.604 |
| 0.35-0.40 | 82 | 2.9786 | 1.6390 | 59.208 | 13.243 |
| 0.30-0.35 | 273 | 9.9165 | 6.8669 | 69.125 | 20.110 |
| 0.25-0.30 | 3 | 0.1090 | 0.0957 | 69.234 | 20.206 |
| 0.20-0.25 | 283 | 10.2797 | 12.7527 | 79.513 | 32.958 |
| 0.15-0.20 | 257 | 9.3353 | 16.2340 | 88.849 | 49.192 |
| 0.10-0.15 | 141 | 5.1217 | 11.4727 | 93.970 | 60.665 |
| 0.05-0.10 | 100 | 3.6324 | 17.0355 | 97.603 | 77.701 |
| 0.00-0.05 | 66 | 2.3974 | 22.2993 | 100.000 | 100.000 |

Target Variable=TargetBuy Data Role=VALIDATE

| Posterior Probability Range | Number of Events | Percentage of Events | Percentage of Nonevents | Cumulative Percentage of Events | Cumulative Percentage of Nonevents |
|---|---|---|---|---|---|
| 0.95-1.00 | 24 | 0.8721 | 0.0120 | 0.872 | 0.012 |
| 0.90-0.95 | 181 | 6.5770 | 0.1316 | 7.449 | 0.144 |
| 0.85-0.90 | 61 | 2.2166 | 0.1555 | 9.666 | 0.299 |
| 0.80-0.85 | 220 | 7.9942 | 0.7656 | 17.660 | 1.065 |
| 0.70-0.75 | 270 | 9.8110 | 1.0528 | 27.471 | 2.117 |
| 0.60-0.65 | 258 | 9.3750 | 2.0098 | 36.846 | 4.127 |
| 0.50-0.55 | 59 | 2.1439 | 0.4187 | 38.990 | 4.546 |
| 0.45-0.50 | 218 | 7.9215 | 2.2371 | 46.911 | 6.783 |
| 0.40-0.45 | 258 | 9.3750 | 4.7254 | 56.286 | 11.509 |
| 0.35-0.40 | 63 | 2.2892 | 1.4595 | 58.576 | 12.968 |
| 0.30-0.35 | 289 | 10.5015 | 6.5199 | 69.077 | 19.488 |
| 0.25-0.30 | 1 | 0.0363 | 0.1077 | 69.113 | 19.596 |
| 0.20-0.25 | 315 | 11.4462 | 12.7049 | 80.560 | 32.301 |
| 0.15-0.20 | 222 | 8.0669 | 16.5450 | 88.626 | 48.846 |
| 0.10-0.15 | 143 | 5.1962 | 12.4178 | 93.823 | 61.263 |
| 0.05-0.10 | 108 | 3.9244 | 16.5809 | 97.747 | 77.844 |
| 0.00-0.05 | 62 | 2.2529 | 22.1558 | 100.000 | 100.000 |

# SAS Enterprise Miner Report

## Node=ORGANICS
## Summary

Node id = Ids
Node label = ORGANICS
Meta path = Ids
Notes =

## Node=ORGANICS
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | DataSource | | DsCreatedBy | garthgarthmorten0 | | NBytes | 2229248 | . |
| ApplyIntervalLevelLowerLimit | Y | | DsId | organics | | NCols | 13 | . |
| ApplyMaxClassLevels | Y | | DsModifiedBy | garthgarthmorten0 | | NObs | 22223 | . |
| ApplyMaxPercentMissing | Y | | DsModifyDate | 1822345619.8 | | NewTable | | |
| CMeta | WORK.M2UYMVXO | | DsSampleName | | | NewVariableRole | REJECT | |
| ComputeStatistics | N | | DsSampleSize | | | OutputType | VIEW | |
| DBPassThrough | Y | | DsSampleSizeType | | | Role | RAW | TRAIN |
| Data | AAEM.ORGANICS | | DsScope | LOCAL | | Sample | D | |
| DataSelection | DATASOURCE | | IdentifyEmptyColumns | Y | | SampleSizeObs | 10000 | |
| DataSource | organics | | IntervalLowerLimit | 20 | | SampleSizePercent | 20 | |
| DataSourceRole | RAW | | Library | AAEM | | SampleSizeType | PERCENT | |
| Description | | | MaxClassLevels | 20 | | Scope | LOCAL | |
| DropMapVariables | Y | | MaxPercentMissing | 50 | | Segment | | |
| DsCreateDate | 1822345619.8 | | MetaAdvisor | BASIC | | Table | ORGANICS | |

## Node=ORGANICS
## Data Attributes

| Attribute | Value | Attribute | Value | Attribute | Value |
|---|---|---|---|---|---|
| Data Name | ORGANICS | Date Created | 02Apr2012:18:02:36 | Data Size | 2229248 |
| Data Type | DATA | Date Modified | 02Apr2012:18:02:36 | Role | RAW |
| Data Label | | Number Rows | 22223 | Segment | |
| Engine | BASE | Number Columns | 13 | Data Library | AAEM |

## Node=ORGANICS
## Variables List

| Name | Label | Role | Level | Type | Length | Format | Creator |
|---|---|---|---|---|---|---|---|
| DemAffl | Affluence Grade | INPUT | INTERVAL | N | 8 | | |
| DemAge | Age | INPUT | INTERVAL | N | 8 | | |
| DemCluster | Neigborhood Cluster-55 Level | REJECTED | NOMINAL | C | 2 | | |
| DemClusterGroup | Neighborhood Cluster-7 Level | INPUT | NOMINAL | C | 1 | | |
| DemGender | Gender | INPUT | NOMINAL | C | 1 | | |
| DemReg | Geographic Region | INPUT | NOMINAL | C | 10 | | |
| DemTVReg | Television Region | INPUT | NOMINAL | C | 12 | | |
| ID | Customer Loyalty ID | ID | NOMINAL | C | 10 | | |
| PromClass | Loyalty Status | INPUT | NOMINAL | C | 8 | | |
| PromSpend | Total Spend | INPUT | INTERVAL | N | 8 | | |
| PromTime | Loyalty Card Tenure | INPUT | INTERVAL | N | 8 | | |

| Name | Label | Role | Level | Type | Length | Format | Creator |
|---|---|---|---|---|---|---|---|
| TargetAmt | Organics Purchase Count | REJECTED | INTERVAL | N | 8 | | |
| TargetBuy | Organics Purchase Indicator | TARGET | BINARY | N | 8 | | |

# SAS Enterprise Miner Report

## Node=Decision Tree (2)
## Summary

Node id = Tree2
Node label = Decision Tree (2)
Meta path = Ids => Part => Tree2
Notes =

## Node=Decision Tree (2)
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | DecisionTree | | Kass | Y | | Pred | N | |
| AVG | Y | | KassApply | BEFORE | | Predict | Y | |
| AssessMeasure | ASE | PROFIT/LOSS | LeafSize | 5 | | ProfitLoss | NONE | |
| AssessPercentage | 0.25 | | Leafid | Y | | RASE | N | |
| CV | N | | Maxbranch | 3 | 2 | SampleMethod | RANDOM | |
| CVNIter | 10 | | Maxdepth | 6 | | SampleSeed | 12345 | |
| CVRepeat | 1 | | MinCatSize | 5 | | SampleSize | 10000 | |
| CVSeed | 12345 | | MissingValue | USEINSEARCH | | ShowNodeId | Y | |
| ClassColorBy | PERCENTCORRECT | | NSubtree | 1 | | ShowValid | Y | |
| Count | Y | | NodeRole | SEGMENT | | SigLevel | 0.2 | |
| CreateSample | DEFAULT | | NodeSample | 20000 | | SplitPrecision | 4 | |
| Criterion | DEFAULT | | NominalCriterion | PROBCHISQ | | Splitsize | . | |
| Depth | Y | | Nrules | 5 | | Subtree | ASSESSMENT | |
| Dummy | N | | Nsurrs | 0 | | Target | ALL | |
| Exhaustive | 5000 | | NumInputs | 1 | | ToolType | MODEL | |
| Freeze | N | | NumSingleImp | 5 | | TrainMode | BATCH | |
| ImportModel | N | | ObsImportance | N | | UseDecision | N | |
| ImportedTreeData | | | OrdinalCriterion | ENTROPY | | UseMultipleTarget | N | |
| Inputs | N | | PercentCorrect | N | | UsePriors | N | |
| IntColorBy | AVG | | Performance | DISK | | UseVarOnce | N | |
| IntervalCriterion | PROBF | | Precision | 4 | | VarSelection | Y | |

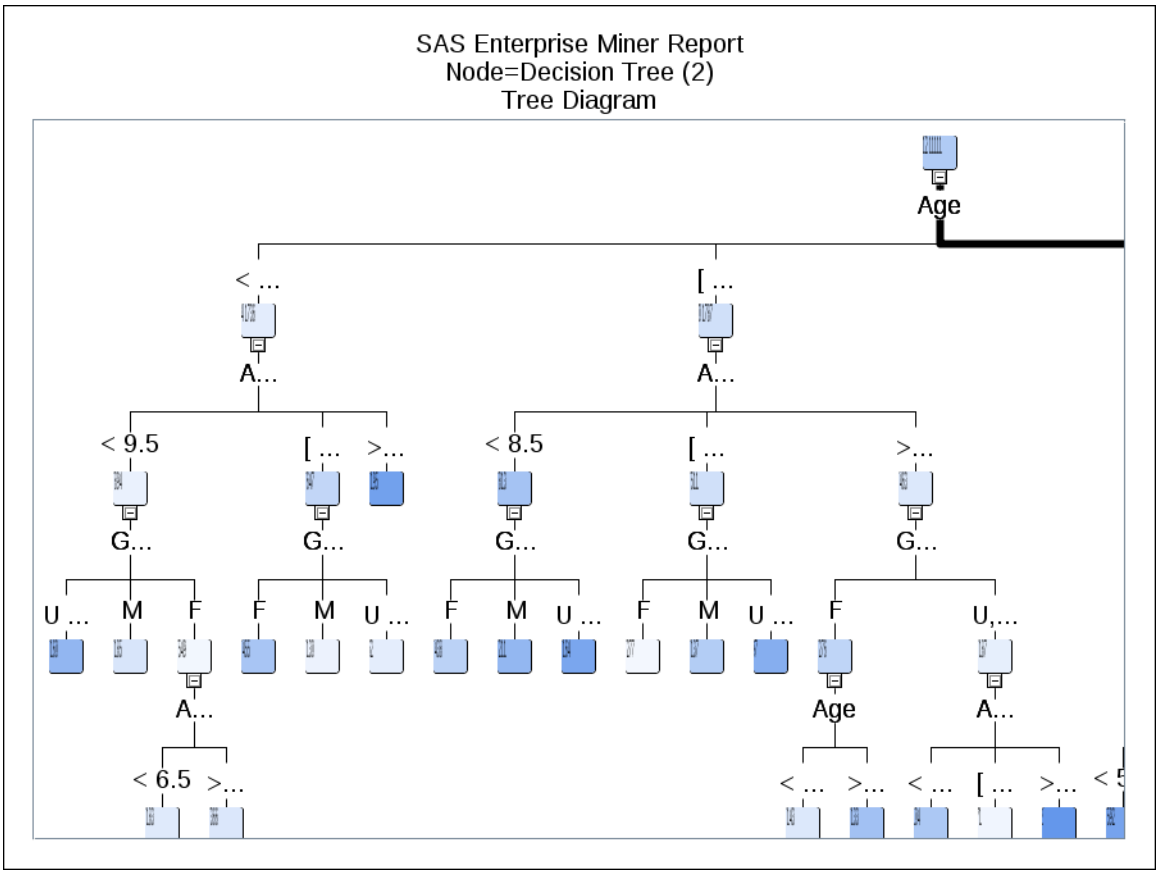
## Node=Decision Tree (2)
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| TARGET | BINARY | 1 | TargetBuy |
| INPUT | INTERVAL | 4 | DemAffl DemAge PromSpend PromTime |
| INPUT | NOMINAL | 5 | DemClusterGroup DemGender DemReg DemTVReg PromClass |
| ID | INTERVAL | 1 | _dataobs_ |
| ID | NOMINAL | 1 | ID |

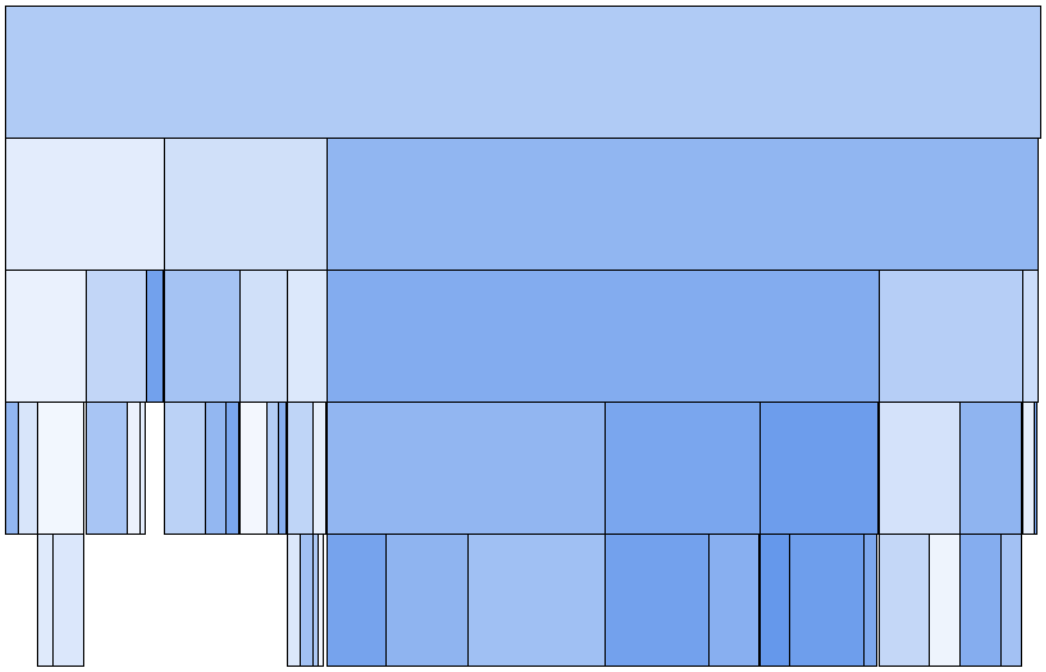
## Node=Decision Tree (2)
## Model Fit Statistics

Target=TargetBuy Target Label=Organics Purchase Indicator

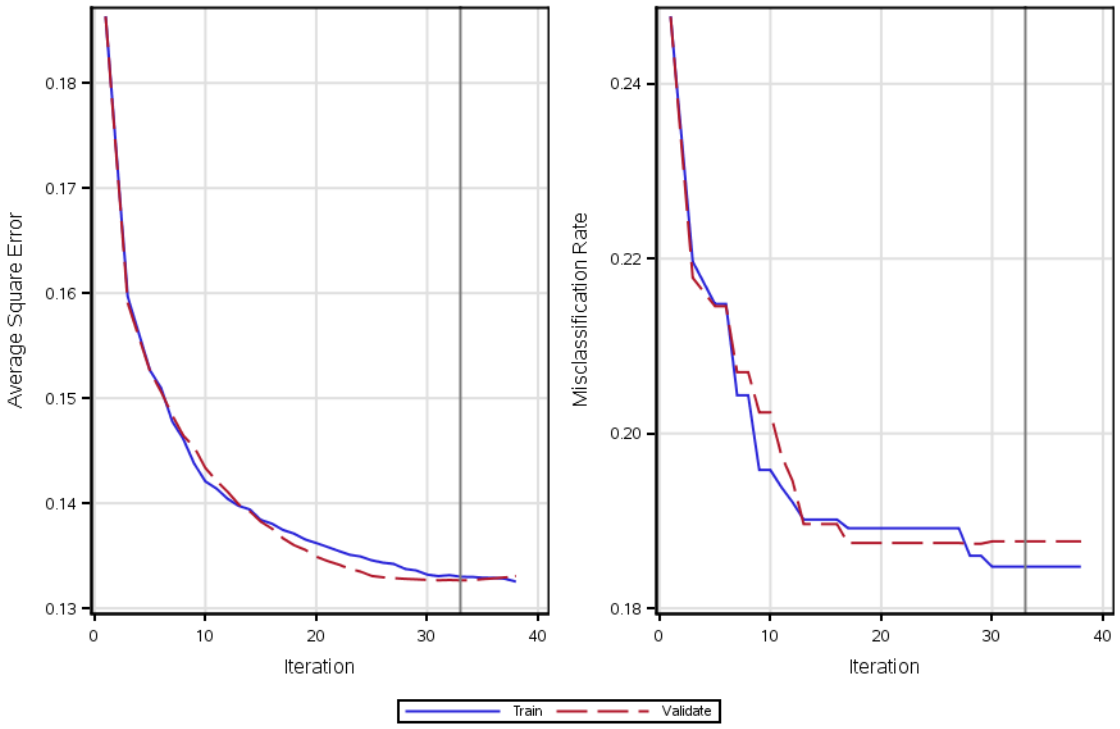
| Label of Statistic | Train | Validation | Test |
|---|---|---|---|
| Sum of Frequencies | 11112.00 | 11111.00 | . |
| Misclassification Rate | 0.18 | 0.19 | . |
| Maximum Absolute Error | 1.00 | 1.00 | . |
| Sum of Squared Errors | 2955.99 | 2948.02 | . |
| Average Squared Error | 0.13 | 0.13 | . |
| Root Average Squared Error | 0.36 | 0.36 | . |
| Divisor for ASE | 22224.00 | 22222.00 | . |
| Total Degrees of Freedom | 11112.00 | . | . |



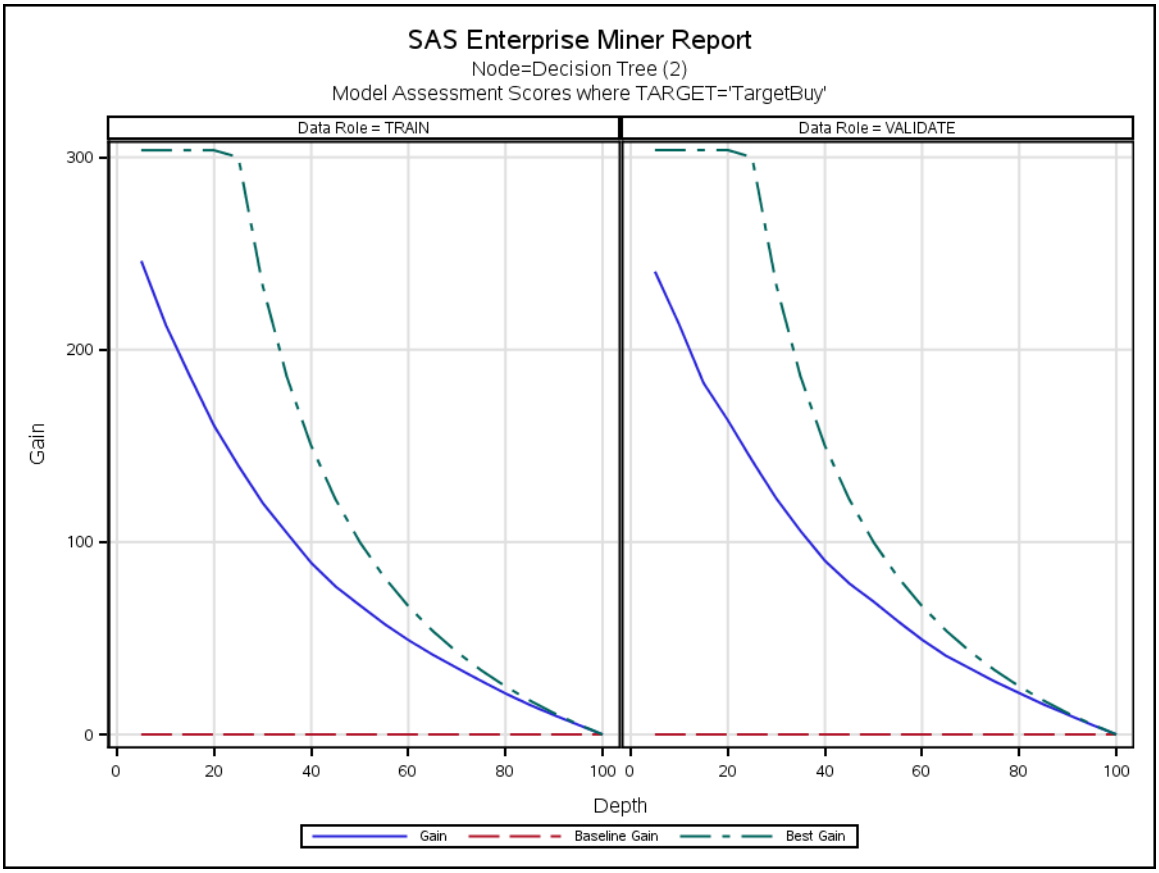
SAS Enterprise Miner Report
Node=Decision Tree (2)
Treemap

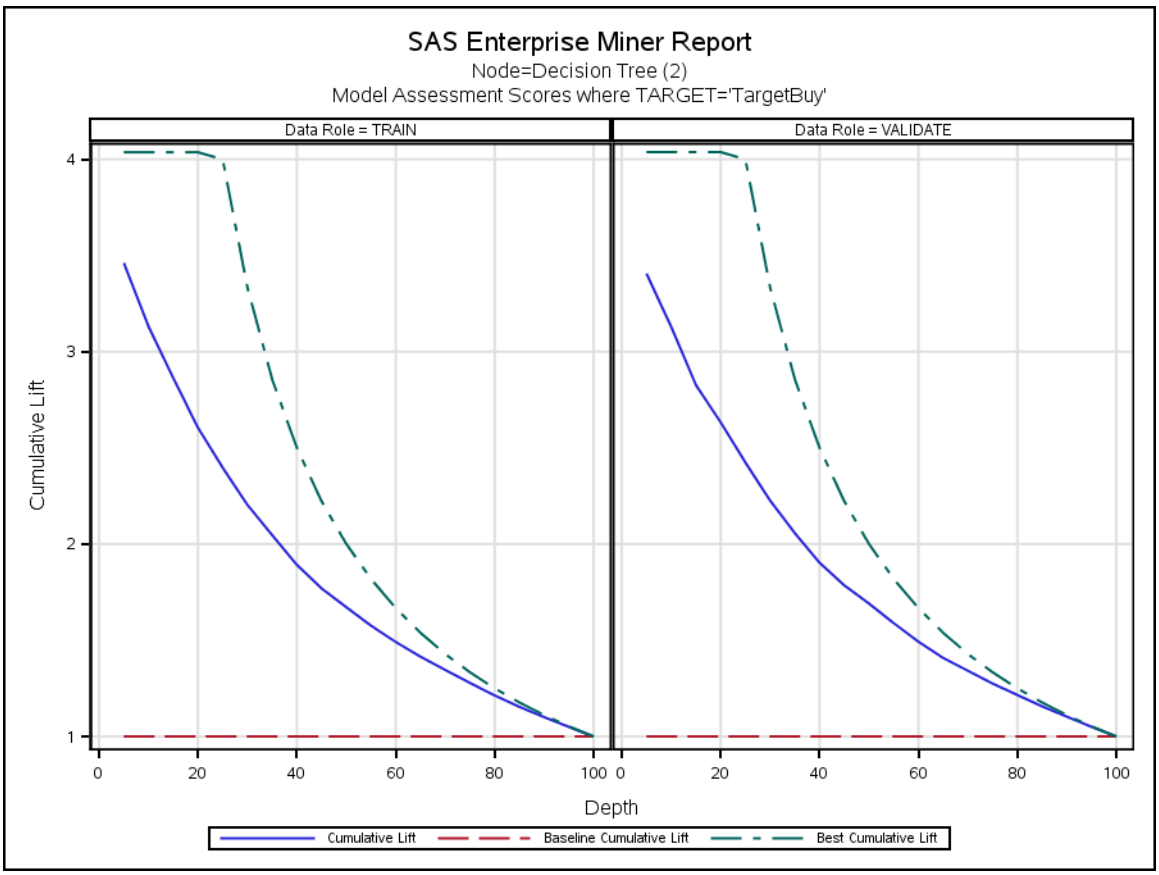


SAS Enterprise Miner Report
Node=Decision Tree (2)
Model Iteration Plots

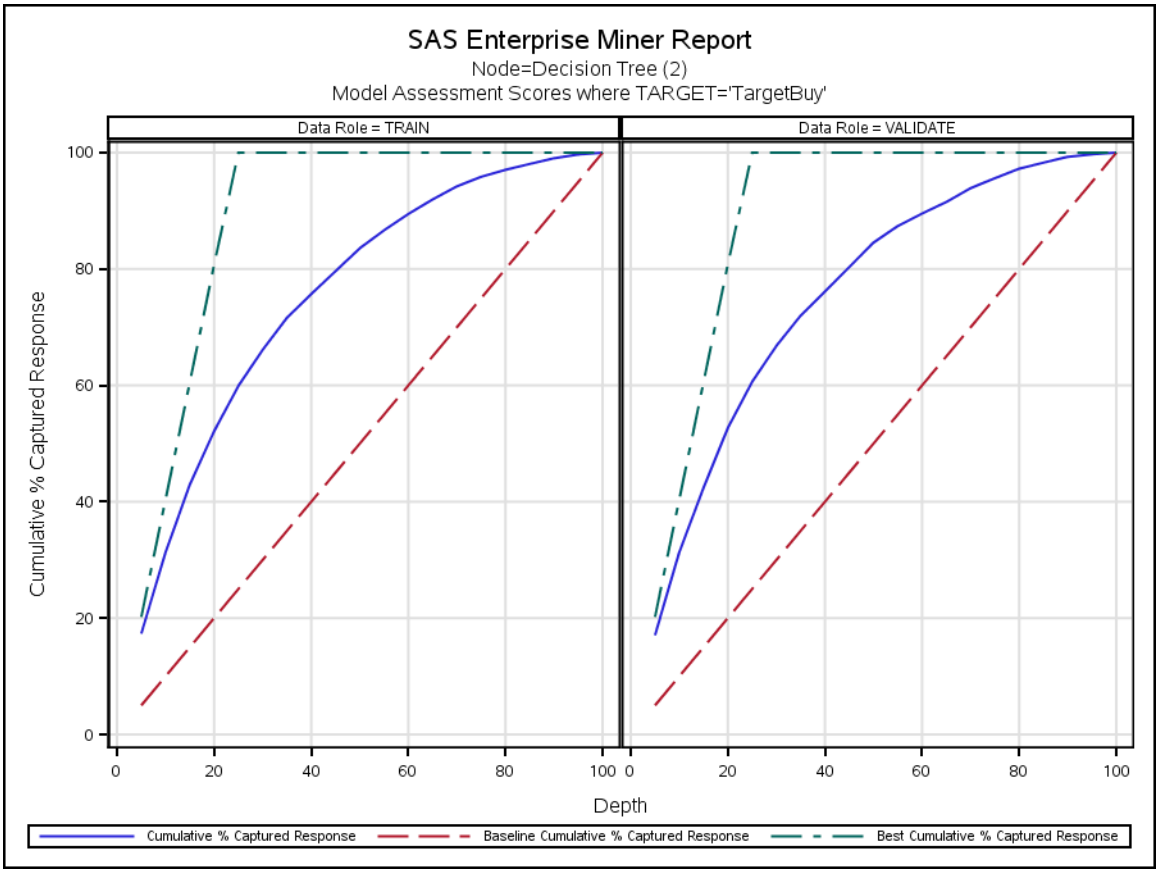


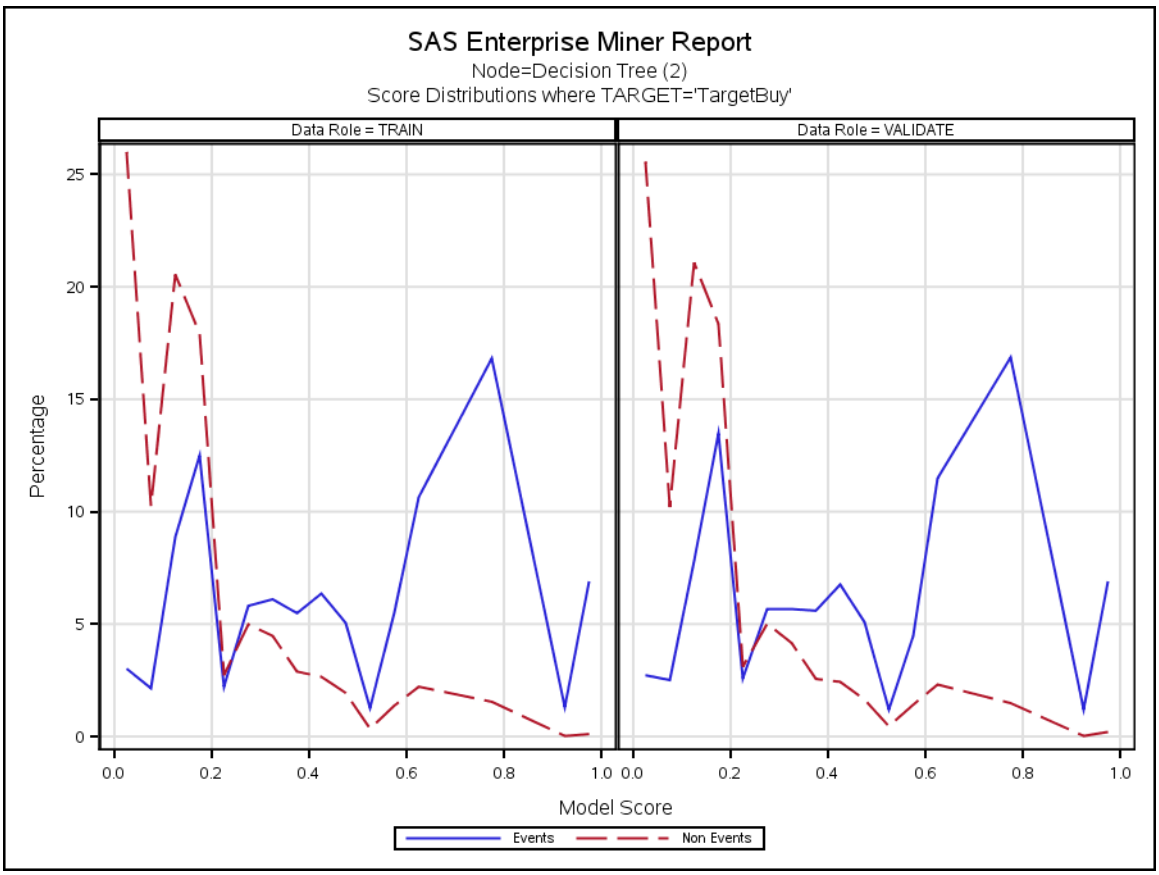
**SAS Enterprise Miner Report**
**Node=Decision Tree (2)**
**Model Assessment Scores where TARGET='TargetBuy'**



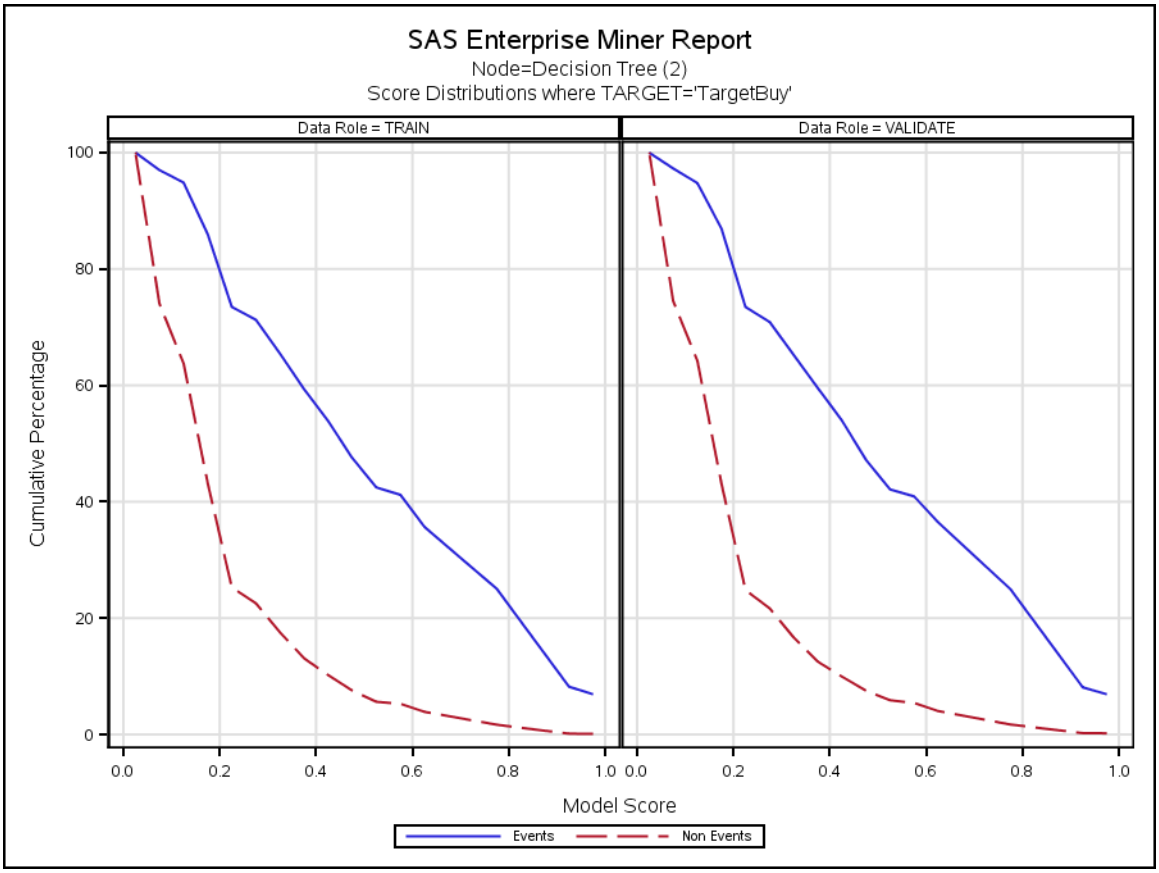



**SAS Enterprise Miner Report**
**Node=Decision Tree (2)**
**Model Assessment Scores where TARGET='TargetBuy'**



## SAS Enterprise Miner Report
## Node=Decision Tree (2)
## Score Distributions where TARGET='TargetBuy'




## Node=Decision Tree (2)
## Score Distributions

Target Variable=TargetBuy Data Role=TRAIN

| Posterior Probability Range | Number of Events | Percentage of Events | Percentage of Nonevents | Cumulative Percentage of Events | Cumulative Percentage of Nonevents |
|---|---|---|---|---|---|
| 0.95-1.00 | 190 | 6.9016 | 0.1077 | 6.902 | 0.108 |
| 0.90-0.95 | 36 | 1.3077 | 0.0239 | 8.209 | 0.132 |
| 0.75-0.80 | 463 | 16.8180 | 1.5432 | 25.027 | 1.675 |
| 0.60-0.65 | 293 | 10.6429 | 2.2132 | 35.670 | 3.888 |
| 0.55-0.60 | 152 | 5.5212 | 1.3758 | 41.191 | 5.264 |
| 0.50-0.55 | 35 | 1.2713 | 0.3469 | 42.463 | 5.611 |
| 0.45-0.50 | 139 | 5.0490 | 1.9380 | 47.512 | 7.549 |
| 0.40-0.45 | 175 | 6.3567 | 2.6558 | 53.869 | 10.205 |
| 0.35-0.40 | 151 | 5.4849 | 2.8831 | 59.353 | 13.088 |
| 0.30-0.35 | 168 | 6.1024 | 4.4742 | 65.456 | 17.562 |
| 0.25-0.30 | 160 | 5.8118 | 4.9886 | 71.268 | 22.551 |
| 0.20-0.25 | 61 | 2.2158 | 2.7276 | 73.483 | 25.278 |
| 0.15-0.20 | 344 | 12.4955 | 17.9208 | 85.979 | 43.199 |
| 0.10-0.15 | 244 | 8.8631 | 20.5527 | 94.842 | 63.752 |
| 0.05-0.10 | 59 | 2.1431 | 10.2524 | 96.985 | 74.004 |
| 0.00-0.05 | 83 | 3.0149 | 25.9959 | 100.000 | 100.000 |

Target Variable=TargetBuy Data Role=VALIDATE

| Posterior Probability Range | Number of Events | Percentage of Events | Percentage of Nonevents | Cumulative Percentage of Events | Cumulative Percentage of Nonevents |
|---|---|---|---|---|---|
| 0.95-1.00 | 190 | 6.9041 | 0.2034 | 6.904 | 0.203 |
| 0.90-0.95 | 33 | 1.1991 | 0.0239 | 8.103 | 0.227 |
| 0.75-0.80 | 464 | 16.8605 | 1.4834 | 24.964 | 1.711 |
| 0.60-0.65 | 316 | 11.4826 | 2.3089 | 36.446 | 4.020 |
| 0.55-0.60 | 123 | 4.4695 | 1.4117 | 40.916 | 5.431 |
| 0.50-0.55 | 33 | 1.1991 | 0.4546 | 42.115 | 5.886 |
| 0.45-0.50 | 140 | 5.0872 | 1.6390 | 47.202 | 7.525 |
| 0.40-0.45 | 186 | 6.7587 | 2.4285 | 53.961 | 9.953 |
| 0.35-0.40 | 154 | 5.5959 | 2.5601 | 59.557 | 12.513 |
| 0.30-0.35 | 156 | 5.6686 | 4.1632 | 65.225 | 16.677 |
| 0.25-0.30 | 156 | 5.6686 | 5.0126 | 70.894 | 21.689 |
| 0.20-0.25 | 71 | 2.5799 | 3.1104 | 73.474 | 24.800 |
| 0.15-0.20 | 371 | 13.4811 | 18.3515 | 86.955 | 43.151 |
| 0.10-0.15 | 215 | 7.8125 | 21.0791 | 94.767 | 64.230 |
| 0.05-0.10 | 69 | 2.5073 | 10.2046 | 97.275 | 74.435 |
| 0.00-0.05 | 75 | 2.7253 | 25.5653 | 100.000 | 100.000 |

# SAS Enterprise Miner Report

## Node=Reporter
## Summary

Node id = Report
Node label = Reporter
Meta path = Ids => Part => Tree => Report
Notes =

## Node=Reporter
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | Reporter | | LiftChart | Y | | basicoutput | Y | |
| Classification | Y | | Nodes | ALL | PATH | headersize | 8 | |
| CompareMdl | Y | | ShowAll | N | | textfont | Arial | |
| CrossTabs | Y | | Style | LISTING | DEFAULT | textsize | 6 | |
| FitStat | Y | | Summarization | Y | | titlesize | 10 | |
| Format | PDF | | VarRanking | Y | | | | |

## Node=Reporter
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| INPUT | INTERVAL | 2 | DemAffl DemAge |
| INPUT | NOMINAL | 1 | DemGender |

# SAS Enterprise Miner Report

## Node=StatExplore
## Summary

Node id = Stat
Node label = StatExplore
Meta path = Ids => Stat
Notes =

## Node=StatExplore
## Properties

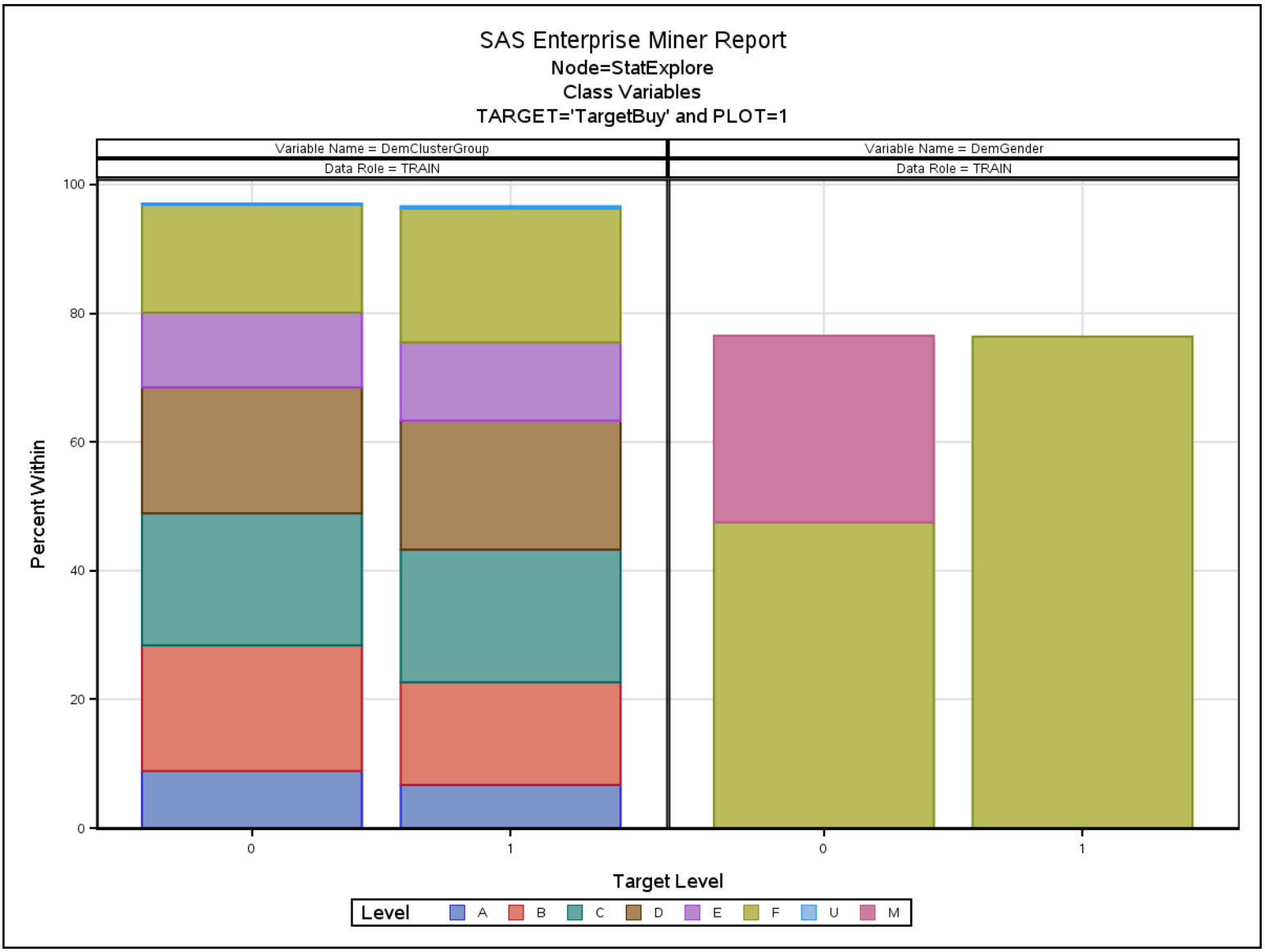
| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | StatExplore | | Correlation | Y | | NObs | 100000 | 1000000 |
| BySegment | N | Y | DropRejected | Y | | Pearson | Y | |
| ChiSquare | Y | | HideVariable | Y | | Spearman | N | |
| ChiSquareInterval | N | | IntervalDistribution | Y | | UseScore | N | |
| ChiSquareIntervalNBins | 5 | | LevelSummary | Y | | UseTest | N | |
| ClassDistribution | Y | | MaximumVars | 1000 | | UseValidate | N | |

## Node=StatExplore
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| INPUT | INTERVAL | 4 | DemAffl DemAge PromSpend PromTime |
| INPUT | NOMINAL | 5 | DemClusterGroup DemGender DemReg DemTVReg PromClass |

| Target | Variable | Importance | Worth | Analysis Variable | Label | plot |
|---|---|---|---|---|---|---|
| TargetBuy | DemAge | 1 | 0.052850 | 1 | Age | . |
| TargetBuy | DemAffl | 2 | 0.045330 | 1 | Affluence Grade | . |
| TargetBuy | DemGender | 3 | 0.025615 | 1 | Gender | . |
| TargetBuy | PromSpend | 4 | 0.005229 | 1 | Total Spend | . |
| TargetBuy | PromClass | 5 | 0.004298 | 1 | Loyalty Status | . |
| TargetBuy | PromTime | 6 | 0.001680 | 1 | Loyalty Card Tenure | . |
| TargetBuy | DemClusterGroup | 7 | 0.001183 | 1 | Neighborhood Cluster-7 Level | . |
| TargetBuy | DemTVReg | 8 | 0.000605 | 1 | Television Region | . |
| TargetBuy | DemReg | 9 | 0.000270 | 1 | Geographic Region | . |

| Data Role | Segment | Segment Id | Segment Name:Value | Target | Input | Cramer's V | Prob | Chi-Square | Df | Role | Label | Ordered Inputs | Group | Plot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAIN | | | _OVERALL_ | TargetBuy | DemGender | 0.25975 | <.0001 | 1499.3755 | 3 | INPUT | Gender | 1 | 1 | 1 |
| TRAIN | | | _OVERALL_ | TargetBuy | PromClass | 0.11247 | <.0001 | 281.1281 | 3 | INPUT | Loyalty Status | 2 | 2 | 1 |
| TRAIN | | | _OVERALL_ | TargetBuy | DemClusterGroup | 0.06632 | <.0001 | 97.7389 | 7 | INPUT | Neighborhood Cluster-7 Level | 3 | 3 | 1 |
| TRAIN | | | _OVERALL_ | TargetBuy | DemTVReg | 0.03260 | 0.0348 | 23.6238 | 13 | INPUT | Television Region | 4 | 4 | 1 |
| TRAIN | | | _OVERALL_ | TargetBuy | DemReg | 0.02001 | 0.1134 | 8.8937 | 5 | INPUT | Geographic Region | 5 | 5 | 1 |


SAS Enterprise Miner Report
Node=StatExplore
Class Variables
TARGET='TargetBuy' and PLOT=1
Variable Name = DemClusterGroup
Data Role = TRAIN
Variable Name = DemGender
Data Role = TRAIN
Percent Within
100
80
60
40
20
0
0
1
0
1
Target Level
Level
A
B
C
D
E
F
U
M

# SAS Enterprise Miner Report

## Node=Impute
## Summary

Node id = Impt
Node label = Impute
Meta path = Ids => Part => Impt
Notes =

## Node=Impute
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | Impute | | IndicatorRole | REJECTED | | MinCatSize | 5 | |
| ABWTuning | 9 | | IndicatorSource | IMPUTED | | Normalize | Y | |
| AHUBERTuning | 1.5 | | LeafSize | 5 | | Nrules | 5 | |
| AWAVETuning | 6.2831853072 | | MaxPctMissing | 50 | | Nsurrs | 2 | |
| DefaultChar | U | | Maxbranch | 2 | | RandomSeed | 12345 | |
| DefaultNum | . | | Maxdepth | 6 | | ReplaceVariable | N | |
| DistributionMissing | N | | MethodClass | COUNT | | SpacingProportion | 90 | |
| HideVariable | Y | | MethodInterval | MEAN | | Splitsize | . | |
| ImputeNoMissing | N | | MethodTargetClass | NONE | | ValidateTestMissing | N | |
| Indicator | NONE | | MethodTargetInterval | NONE | | | | |

## Node=Impute
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| INPUT | INTERVAL | 4 | DemAffl DemAge PromSpend PromTime |
| INPUT | NOMINAL | 5 | DemClusterGroup DemGender DemReg DemTVReg PromClass |

## Node=Impute
## Imputation Summary

| Variable Name | Impute Method | Imputed Variable | Impute Value | Role | Measurement Level | Label | Number of Missing for TRAIN |
|---|---|---|---|---|---|---|---|
| DemAffl | MEAN | IMP_DemAffl | 8.7030320204 | INPUT | INTERVAL | Affluence Grade | 525 |
| DemAge | MEAN | IMP_DemAge | 53.892095358 | INPUT | INTERVAL | Age | 751 |
| DemClusterGroup | COUNT | IMP_DemClusterGroup | C | INPUT | NOMINAL | Neighborhood Cluster-7 Level | 328 |
| DemGender | COUNT | IMP_DemGender | F | INPUT | NOMINAL | Gender | 1215 |
| DemReg | COUNT | IMP_DemReg | South East | INPUT | NOMINAL | Geographic Region | 236 |
| DemTVReg | COUNT | IMP_DemTVReg | London | INPUT | NOMINAL | Television Region | 236 |
| PromTime | MEAN | IMP_PromTime | 6.5710641399 | INPUT | INTERVAL | Loyalty Card Tenure | 136 |

# SAS Enterprise Miner Report

## Node=Regression
## Summary

Node id = Reg
Node label = Regression
Meta path = Ids => Part => Impt => Reg
Notes =

## Node=Regression
## Properties

| Property | Value | Default | Property | Value | Default | Property | Value | Default |
|---|---|---|---|---|---|---|---|---|
| Component | Regression | | Force | 0 | | PolynomialDegree | 2 | |
| AbsConvValue | -1.34078E154 | -7.237006E75 | GConvTimes | 1 | | PrintDesignMatrix | N | |
| AbsFTime | 1 | | GConvValue | 1E-6 | | Rule | NONE | |
| AbsFValue | 0 | | Hierarchy | CLASS | | SASSPDS | N | |
| AbsGTime | 1 | | InputCoding | DEVIATION | | SelectionCriterion | VERROR | DEFAULT |
| AbsGValue | 0.00001 | | Interactions | | | SelectionDefault | Y | |
| AbsXTime | 1 | | LinkFunction | LOGIT | | Sequential | N | |
| AbsXValue | 1E-8 | | MainEffect | Y | | Simple | N | |
| ClParm | N | | MaxCPUTime | 1 HOUR | | SlEntry | 0.05 | |
| ConvDefaults | Y | | MaxFunctionCalls | . | | SlStay | 0.05 | |
| CorB | N | | MaxIterations | . | | Start | 0 | |
| CovB | N | | MaxStep | . | | StepOutput | N | |
| Covout | N | | MinResourceUse | N | | Stop | 0 | |
| Details | N | | ModelDefaults | Y | | SuppressIntercept | N | |
| Error | LOGISTIC | | ModelSelection | STEPWISE | NONE | SuppressOutput | N | |
| ExcludedVariable | REJECT | | OptimizationTechnique | DEFAULT | | Terms | N | |
| FConvTimes | 1 | | Performance | N | | TwoFactor | N | |
| FConvValue | 0 | | Polynomial | N | | | | |

## Node=Regression
## Variable Summary

| Role | Level | Frequency Count | Name |
|---|---|---|---|
| TARGET | BINARY | 1 | TargetBuy |
| INPUT | INTERVAL | 4 | IMP_DemAffl IMP_DemAge IMP_PromTime PromSpend |
| INPUT | NOMINAL | 5 | IMP_DemClusterGroup IMP_DemGender IMP_DemReg IMP_DemTVReg PromClass |

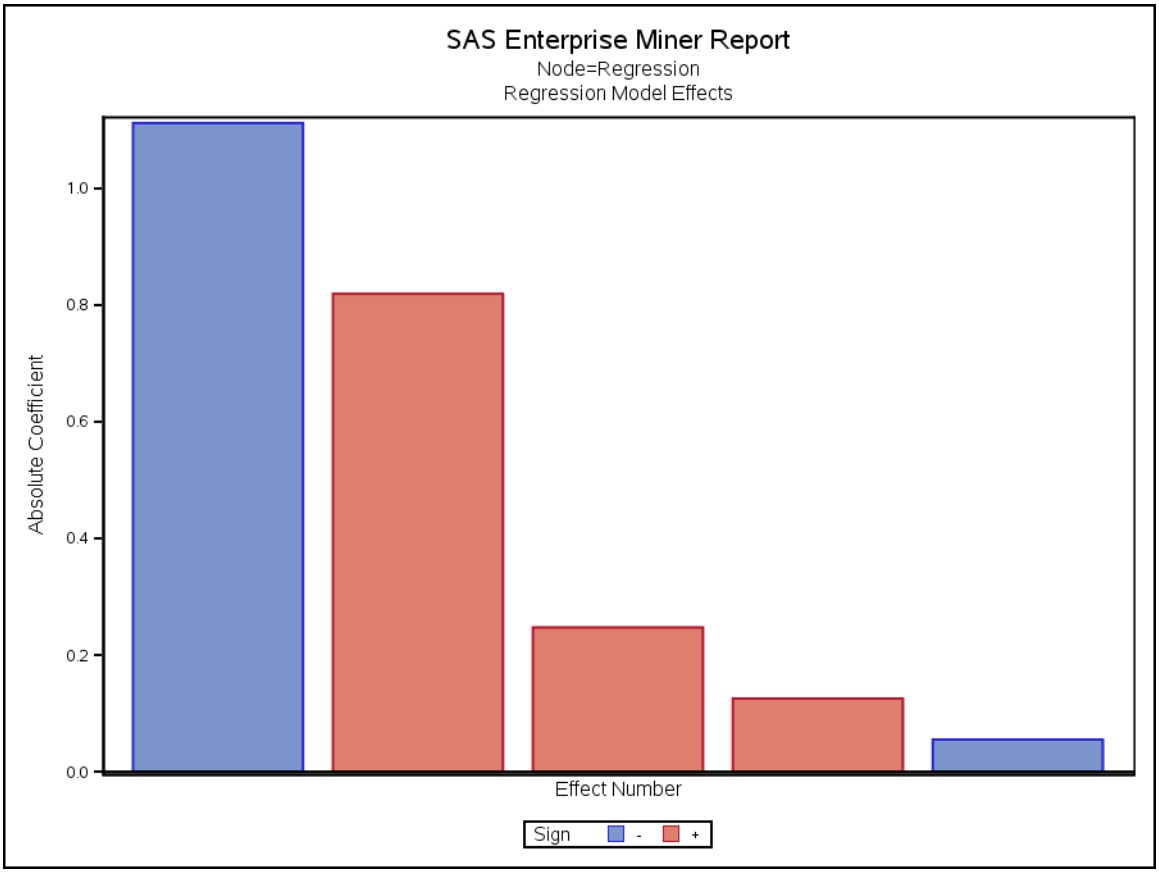
## Node=Regression
## Model Fit Statistics

Target=TargetBuy Target Label=Organics Purchase Indicator

| Label of Statistic | Train | Validation | Test |
|---|---|---|---|
| Akaike's Information Criterion | 9969.42 | . | . |
| Average Squared Error | 0.14 | 0.14 | . |
| Average Error Function | 0.45 | 0.45 | . |
| Degrees of Freedom for Error | 11107.00 | . | . |
| Model Degrees of Freedom | 5.00 | . | . |
| Total Degrees of Freedom | 11112.00 | . | . |

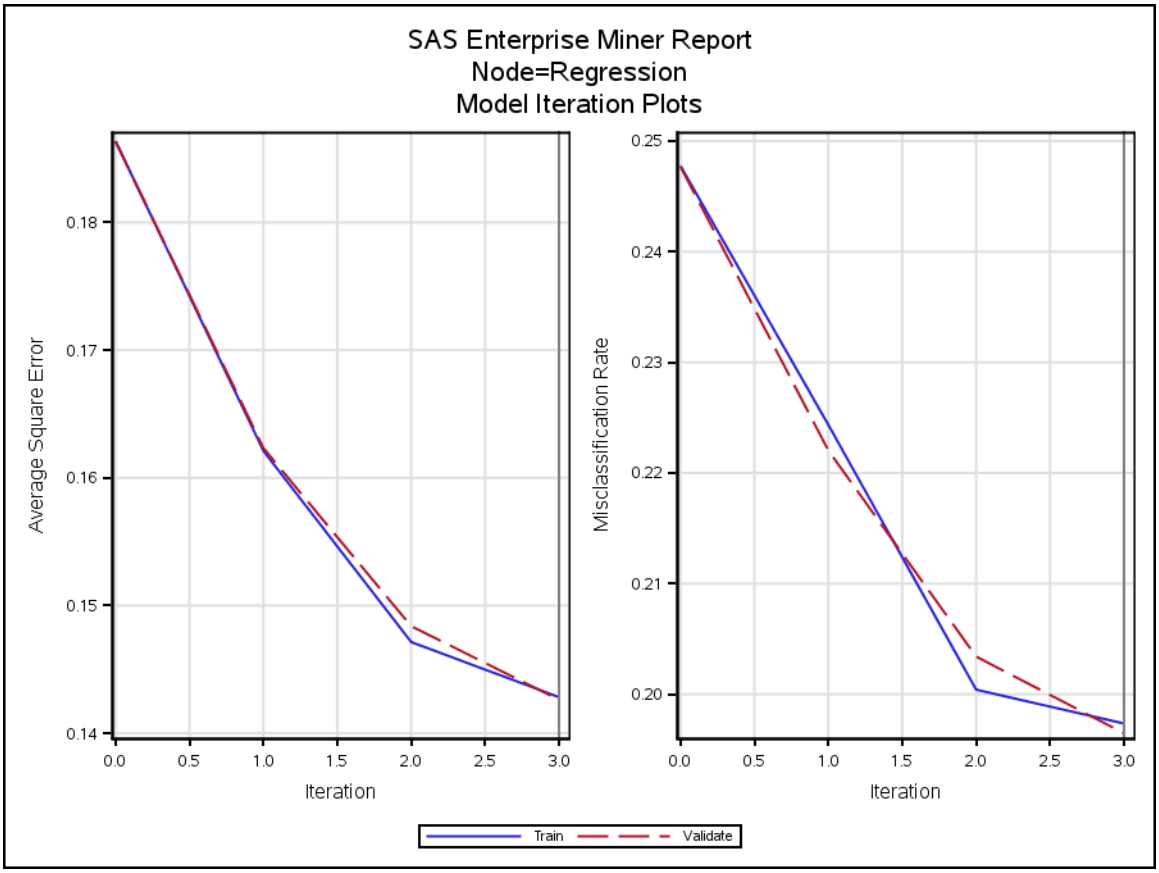
Target=TargetBuy Target Label=Organics Purchase Indicator

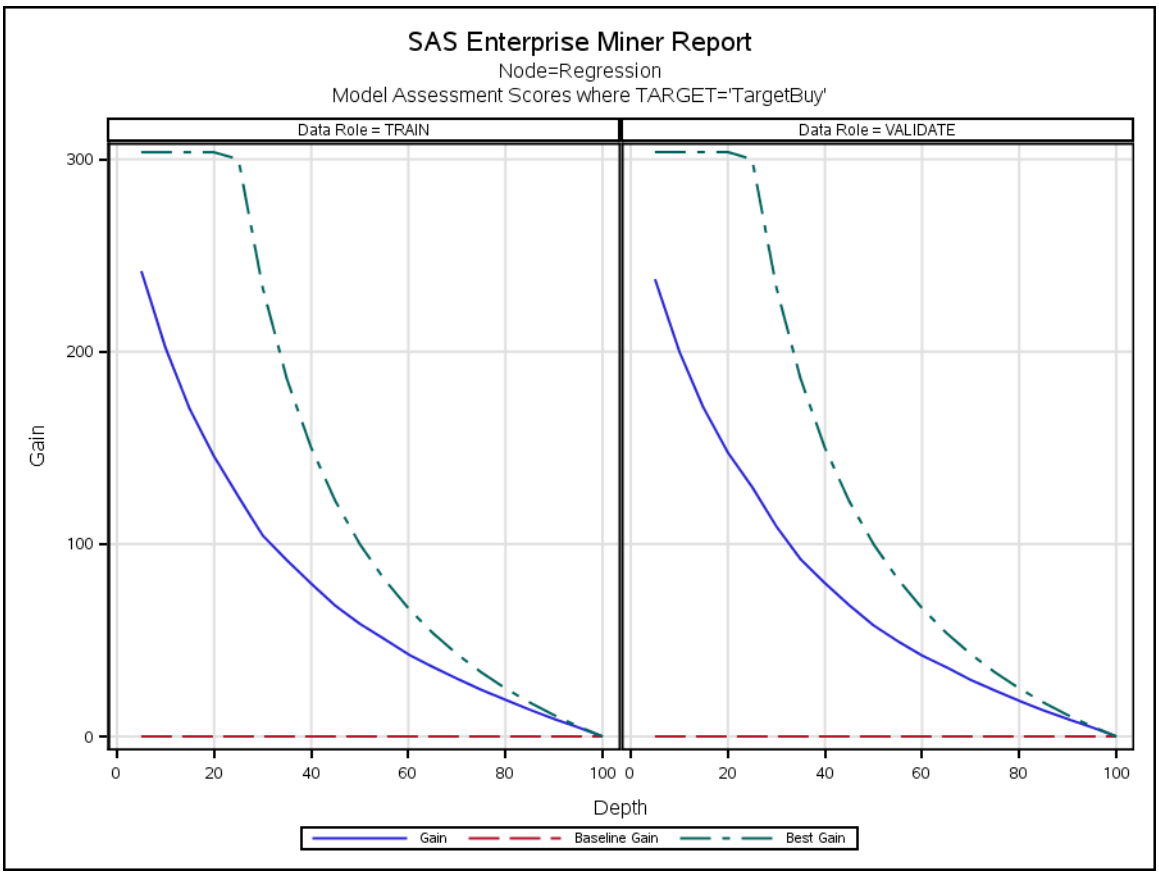
| Label of Statistic | Train | Validation | Test |
|---|---|---|---|
| Divisor for ASE | 22224.00 | 22222.00 | . |
| Error Function | 9959.42 | 9960.72 | . |
| Final Prediction Error | 0.14 | . | . |
| Maximum Absolute Error | 0.99 | 0.99 | . |
| Mean Square Error | 0.14 | 0.14 | . |
| Sum of Frequencies | 11112.00 | 11111.00 | . |
| Number of Estimate Weights | 5.00 | . | . |
| Root Average Sum of Squares | 0.38 | 0.38 | . |
| Root Final Prediction Error | 0.38 | . | . |
| Root Mean Squared Error | 0.38 | 0.38 | . |
| Schwarz's Bayesian Criterion | 10006.00 | . | . |
| Sum of Squared Errors | 3174.27 | 3169.40 | . |
| Sum of Case Weights Times Freq | 22224.00 | 22222.00 | . |
| Misclassification Rate | 0.20 | 0.20 | . |

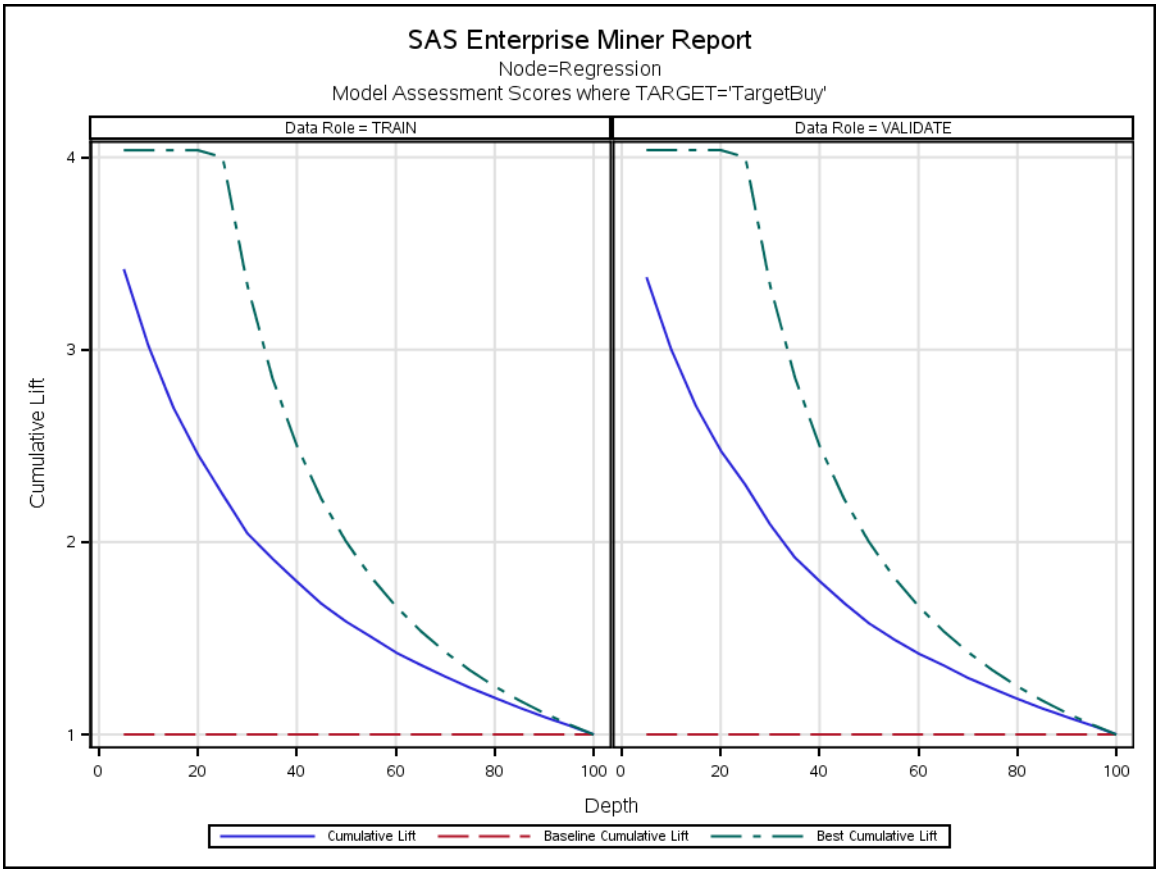


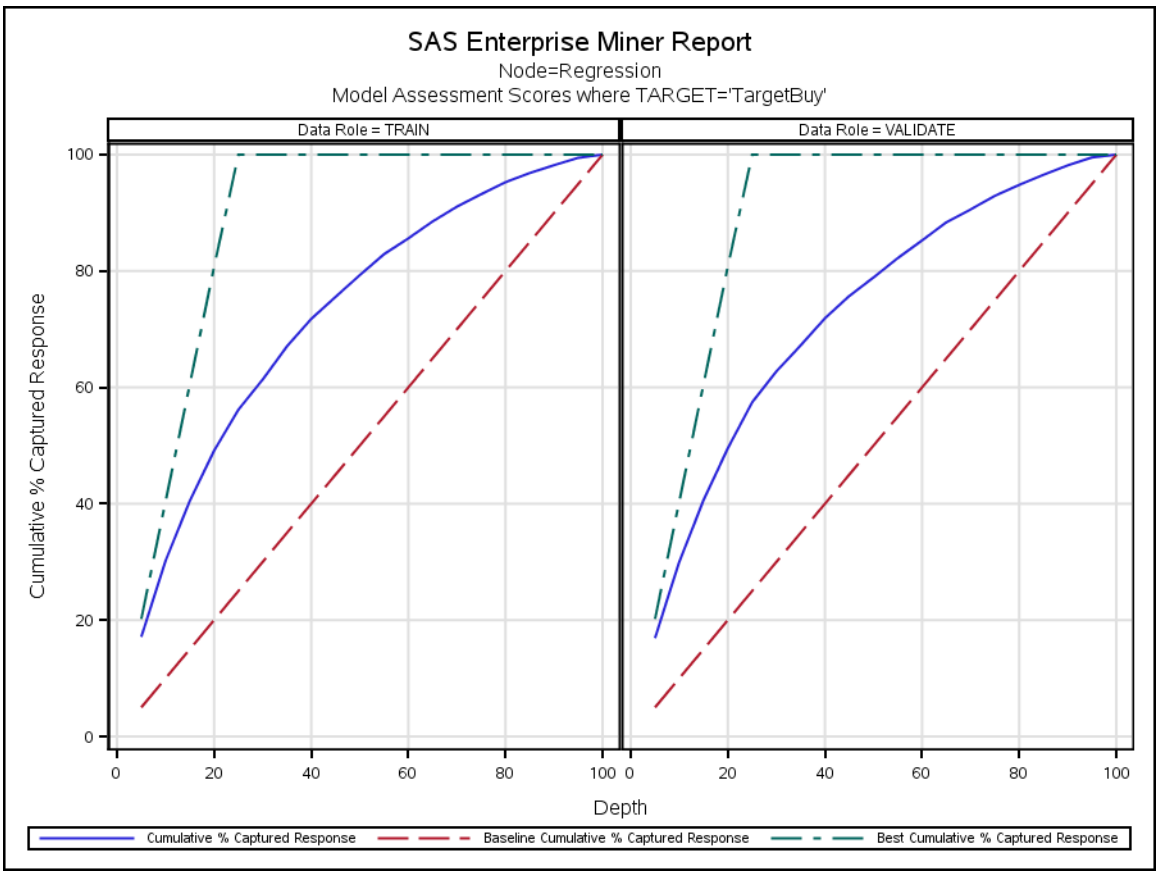

| Effect Number | Variable | Level | Coefficient | T-value | P Value | Effect Number | Variable | Level | Coefficient | T-value | P Value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Intercept | 1 | -1.11186 | -8.1072 | 5.18188E-16 | 4 | IMP_DemGender | M | 0.12544 | 2.0442 | 0.040938 |
| 2 | IMP_DemGender | F | 0.81919 | 14.7221 | 4.65099E-49 | 5 | IMP_DemAge | | -0.05514 | -26.5418 | 0.000000 |
| 3 | IMP_DemAffl | | 0.24734 | 30.0382 | 3.1117E-198 | . | | | . | . | . |

**SAS Enterprise Miner Report**
**Node=Regression**
**Model Iteration Plots**

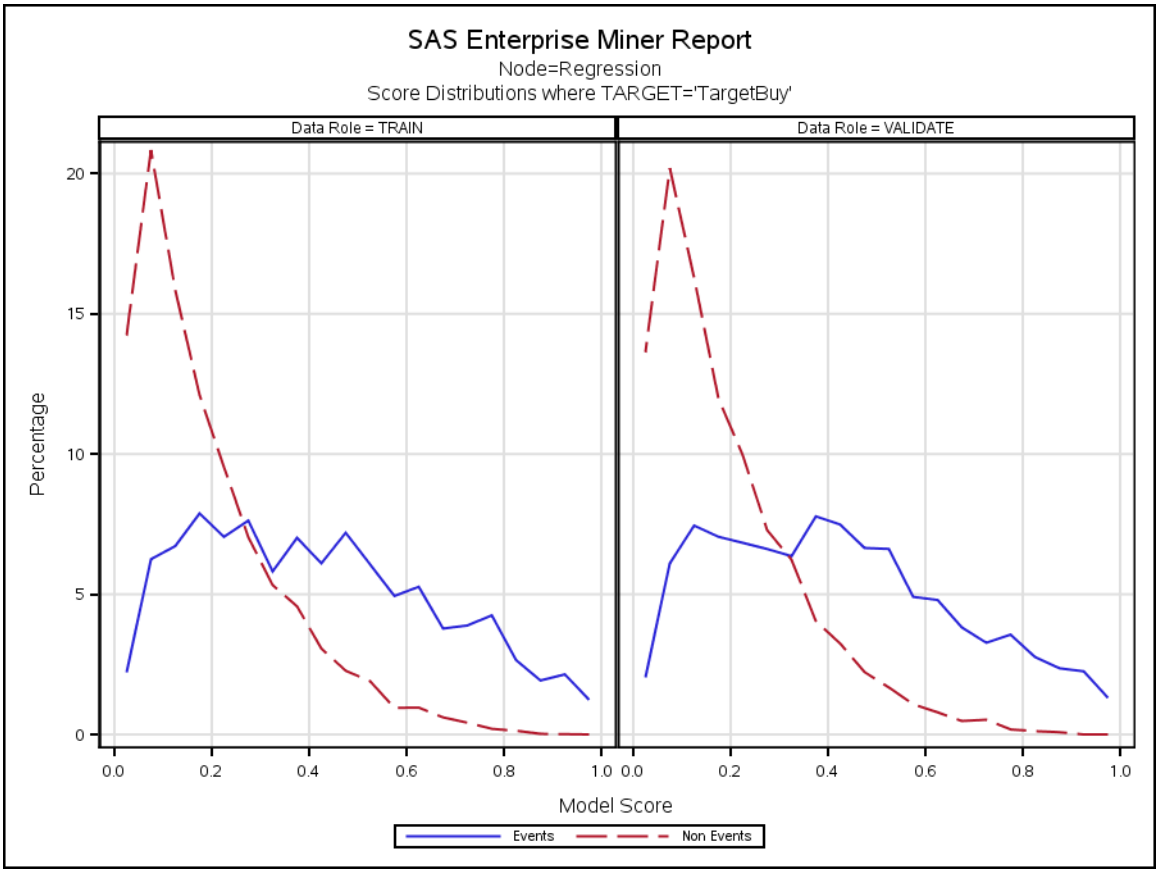


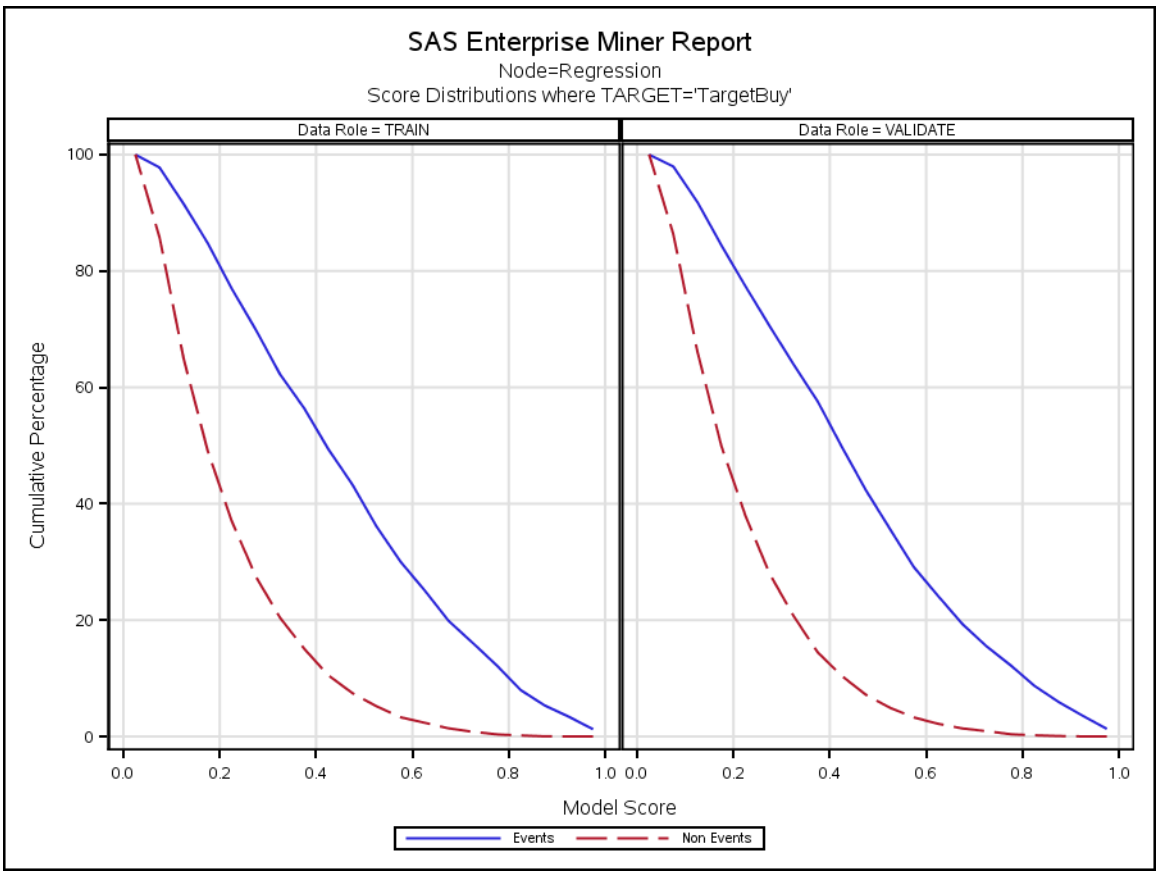




SAS Enterprise Miner Report
Node=Regression
Model Assessment Scores where TARGET='TargetBuy'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative Lift
Depth
Cumulative Lift
Baseline Cumulative Lift
Best Cumulative Lift


SAS Enterprise Miner Report
Node=Regression
Model Assessment Scores where TARGET='TargetBuy'
Data Role = TRAIN
Data Role = VALIDATE
Cumulative % Captured Response
Depth
Cumulative % Captured Response
Baseline Cumulative % Captured Response
Best Cumulative % Captured Response

**SAS Enterprise Miner Report**
**Node=Regression**
**Score Distributions where TARGET='TargetBuy'**




**Node=Regression**
**Score Distributions**

Target Variable=TargetBuy Data Role=TRAIN

| Posterior Probability Range | Number of Events | Percentage of Events | Percentage of Nonevents | Cumulative Percentage of Events | Cumulative Percentage of Nonevents |
|---|---|---|---|---|---|
| 0.95-1.00 | 34 | 1.23502 | 0.0000 | 1.235 | 0.000 |
| 0.90-0.95 | 59 | 2.14312 | 0.0120 | 3.378 | 0.012 |
| 0.85-0.90 | 53 | 1.92517 | 0.0239 | 5.303 | 0.036 |
| 0.80-0.85 | 73 | 2.65165 | 0.1316 | 7.955 | 0.167 |
| 0.75-0.80 | 117 | 4.24991 | 0.2034 | 12.205 | 0.371 |
| 0.70-0.75 | 107 | 3.88667 | 0.4187 | 16.092 | 0.790 |
| 0.65-0.70 | 104 | 3.77770 | 0.6101 | 19.869 | 1.400 |
| 0.60-0.65 | 145 | 5.26698 | 0.9571 | 25.136 | 2.357 |
| 0.55-0.60 | 136 | 4.94007 | 0.9451 | 30.076 | 3.302 |
| 0.50-0.55 | 167 | 6.06611 | 1.9021 | 36.142 | 5.204 |
| 0.45-0.50 | 198 | 7.19215 | 2.2730 | 43.335 | 7.477 |
| 0.40-0.45 | 168 | 6.10243 | 3.0626 | 49.437 | 10.540 |
| 0.35-0.40 | 193 | 7.01053 | 4.5699 | 56.448 | 15.109 |
| 0.30-0.35 | 160 | 5.81184 | 5.3236 | 62.259 | 20.433 |
| 0.25-0.30 | 210 | 7.62804 | 7.0343 | 69.887 | 27.467 |
| 0.20-0.25 | 194 | 7.04686 | 9.5346 | 76.934 | 37.002 |
| 0.15-0.20 | 217 | 7.88231 | 12.0947 | 84.817 | 49.097 |
| 0.10-0.15 | 185 | 6.71994 | 15.8392 | 91.537 | 64.936 |
| 0.05-0.10 | 172 | 6.24773 | 20.8398 | 97.784 | 85.776 |
| 0.00-0.05 | 61 | 2.21576 | 14.2242 | 100.000 | 100.000 |

Target Variable=TargetBuy Data Role=VALIDATE

| Posterior Probability Range | Number of Events | Percentage of Events | Percentage of Nonevents | Cumulative Percentage of Events | Cumulative Percentage of Nonevents |
|---|---|---|---|---|---|
| 0.95-1.00 | 36 | 1.30814 | 0.0000 | 1.308 | 0.000 |
| 0.90-0.95 | 62 | 2.25291 | 0.0000 | 3.561 | 0.000 |
| 0.85-0.90 | 65 | 2.36192 | 0.0837 | 5.923 | 0.084 |
| 0.80-0.85 | 76 | 2.76163 | 0.1196 | 8.685 | 0.203 |
| 0.75-0.80 | 98 | 3.56105 | 0.1794 | 12.246 | 0.383 |
| 0.70-0.75 | 90 | 3.27035 | 0.5264 | 15.516 | 0.909 |
| 0.65-0.70 | 105 | 3.81541 | 0.4785 | 19.331 | 1.388 |
| 0.60-0.65 | 132 | 4.79651 | 0.7896 | 24.128 | 2.177 |
| 0.55-0.60 | 135 | 4.90552 | 1.0767 | 29.033 | 3.254 |
| 0.50-0.55 | 182 | 6.61337 | 1.6748 | 35.647 | 4.929 |
| 0.45-0.50 | 183 | 6.64971 | 2.2251 | 42.297 | 7.154 |
| 0.40-0.45 | 206 | 7.48547 | 3.2420 | 49.782 | 10.396 |
| 0.35-0.40 | 214 | 7.77616 | 4.0435 | 57.558 | 14.440 |
| 0.30-0.35 | 175 | 6.35901 | 6.2328 | 63.917 | 20.672 |
| 0.25-0.30 | 182 | 6.61337 | 7.2856 | 70.531 | 27.958 |
| 0.20-0.25 | 188 | 6.83140 | 9.9533 | 77.362 | 37.911 |
| 0.15-0.20 | 194 | 7.04942 | 11.9751 | 84.411 | 49.886 |
| 0.10-0.15 | 205 | 7.44913 | 16.2819 | 91.860 | 66.168 |
| 0.05-0.10 | 168 | 6.10465 | 20.1938 | 97.965 | 86.362 |
| 0.00-0.05 | 56 | 2.03488 | 13.6380 | 100.000 | 100.000 |

End of Report