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MET CS 699: Data mining  
SUMMER 1  
project DOCUMENTATION

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# Best Model

## Attributes Included

The best-performing model that I tested utilized the Bagging with J48 algorithm and the InfoGainAttributeEval selection method for attributes. See Attributes Selected in the InfoGainAttributeEval section for a discussion on why these attributes were chosen. The attributes included were:

pctWhite

medIncome

pctWdiv

medFamIncome

persPoverty

pctUnemploy

pctAllDivorc

pct2Par

pctKidsBornNevrMarr

pctPersOwnOccup

pctPopDenseHous

pctHousOwnerOccup

pctHousWOphone

Class

## Best Model Test Result

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.trees.J48 -C 0.25 -M 2

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 500 83.4725 %

Incorrectly Classified Instances 99 16.5275 %

Kappa statistic 0.6243

Mean absolute error 0.2455

Root mean squared error 0.357

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.111 0.768 0.726 0.747 0.625 0.877 0.799 0

0.889 0.274 0.866 0.889 0.877 0.625 0.877 0.917 1

Weighted Avg. 0.835 0.219 0.833 0.835 0.834 0.625 0.877 0.878

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

44 354 | b = 1

# Discussion

## Best Model Criteria

The bagging algorithm with J48 classification using the information gain attribute selection method was my best model tested. It has the highest accuracy, with 83.4725% of instances classified correctly. It also has one of the highest ROC areas of the models tested, indicating a high rate of true positives and a low rate of false positives when classifying (which is also confirmed by the raw data and the confusion matrix). The model is constructed quickly, unlike Multilayer Perceptron and some of the AdaBoostM1 models. The results are easy to interpret (unlike the AdaMoostM1 and Bagging models that utilized J48 that produced huge amounts of decision tree data). The data does not contain lots of missing values so I couldn’t evaluate the models based on how the model handled them.

## Most Relevant Attributes

I assert that the most relevant attributes to the class are: med Income, pctPoverty, pctAllDivorc, pct2Par, and kidsBornNevrMarr. Each of these attributes presented in all of the attribute selection methods that I chose and all of them were high on the list of ranked attributes. Lower income and high poverty are also known contributors to crime rates. High rates of divorce and single-parent households can be indicators of an unstable or less-than-optimal home life, which is another indicator of crime. Interestingly, another attribute, pctHousWOphone, also appeared in all of my attribute selection methods. At the time this data was collected, a household without a phone was quite rare, so to see this attribute appear highly ranked in all attribute selection methods is definitely worthy to note. However, I did not include it in my most relevant attributes, because I would imagine it is likely more related to high poverty than it is to crime. On the other hand, it could be an indicator of poor family life and low income, but more research would need to be conducted to support this.

## Knowledge Gained & Observations Made

The project scope allowed me to gain a real-life understanding of the applications of data mining. I appreciated the topic chosen because it was a very accessible and very impactful application for data mining. Coming from an undergraduate degree in political science with a focus on human rights, I have researched crime and incarceration, including the contributing economic, social, and cultural factors that drive some people to crime. Seeing a larger data set that provided support for many of the factors that “make sense” (like poverty), and provided new insight into factors that might be less intuitive for a political scientist (like the percentage of children whose parents aren’t married) was very fascinating.

On the technical side, I enjoyed getting the hands-on experience of testing multiple models to find the best one. I found it incredibly tedious to test 40 models, however, and I wonder if data miners are building such an extensive set of models when they are trying to select a model, or if their expertise can help them “whittle down” which models may fit best and simply test a few. I also found it quite interesting to see such a different test result from the algorithms using J48, bagging with J48, and AdaBoostM1 with J48, for instance. Using bagging and boosting sometimes greatly changed the model’s accuracy, and with J48, the interpretability of the results was greatly reduced (when faced with so many decision trees it was difficult to glean meaningful insights from anywhere but the summary section).

Finally, although I found the extensive model creation to be quite tedious and potentially excessive, I am glad to have gone through the process of creating different models and comparing them using different performance measures to find the best model for the dataset.

# Test Results: InfoGainAttributeEval

## Description

The InfoGainAttributeEval evaluates attributes and ranks them based upon the information gain relative to the class.

## Attributes Selected

pctWhite

med Income

pctWdiv

medFamIncome

persPoverty

pctUnemploy

pctAllDivorc

pct2Par

pctKidsBornNevrMarr

pctPersOwnOccup

pctPopDenseHous

pctHousOwnerOccup

pctHousWOphone

Class

The attributes selected were all ranked highly by the selection method, although I did make some executive decisions to exclude some of the other highly ranked attributes that were different representations of the same indicator (e.g. persPoverty and pctPoverty) and attributes that are highly correlated (e.g. pctAllDivorc, pctFemDivorc, pctMaleDivorc, or pct2Par, pctKids-4w2Par,…and so on).

## J48 Model

=== Classifier model ===

J48 pruned tree

------------------

pct2Par <= 75.8

| pct2Par <= 66.58

| | pctAllDivorc <= 14.3

| | | pctAllDivorc <= 8.84: 1 (10.0/1.0)

| | | pctAllDivorc > 8.84

| | | | pctKidsBornNevrMarr <= 3.24

| | | | | pctWhite <= 97.72

| | | | | | medFamIncome <= 33357: 1 (13.0/1.0)

| | | | | | medFamIncome > 33357: 0 (4.0/1.0)

| | | | | pctWhite > 97.72: 0 (3.0)

| | | | pctKidsBornNevrMarr > 3.24: 0 (127.0/27.0)

| | pctAllDivorc > 14.3: 0 (100.0/6.0)

| pct2Par > 66.58

| | persPoverty <= 13026

| | | persPoverty <= 3733: 1 (205.0/62.0)

| | | persPoverty > 3733

| | | | med Income <= 31063

| | | | | pctKidsBornNevrMarr <= 7.15

| | | | | | pctPopDenseHous <= 3.27

| | | | | | | pctAllDivorc <= 13.71

| | | | | | | | pctKidsBornNevrMarr <= 2.47

| | | | | | | | | pctWdiv <= 38.01: 1 (4.0)

| | | | | | | | | pctWdiv > 38.01

| | | | | | | | | | pct2Par <= 73.65: 0 (7.0/1.0)

| | | | | | | | | | pct2Par > 73.65

| | | | | | | | | | | pctWhite <= 96.03: 1 (4.0/1.0)

| | | | | | | | | | | pctWhite > 96.03: 0 (2.0)

| | | | | | | | pctKidsBornNevrMarr > 2.47: 1 (17.0/1.0)

| | | | | | | pctAllDivorc > 13.71: 0 (8.0/1.0)

| | | | | | pctPopDenseHous > 3.27

| | | | | | | pctAllDivorc <= 9.2

| | | | | | | | pctWhite <= 76.76: 0 (3.0/1.0)

| | | | | | | | pctWhite > 76.76: 1 (3.0)

| | | | | | | pctAllDivorc > 9.2

| | | | | | | | pct2Par <= 68.13

| | | | | | | | | medFamIncome <= 30017: 1 (5.0/1.0)

| | | | | | | | | medFamIncome > 30017: 0 (3.0)

| | | | | | | | pct2Par > 68.13: 0 (35.0)

| | | | | pctKidsBornNevrMarr > 7.15: 1 (5.0)

| | | | med Income > 31063

| | | | | pctKidsBornNevrMarr <= 3.79

| | | | | | pctPopDenseHous <= 8.88

| | | | | | | pctHousOwnerOccup <= 60.24

| | | | | | | | med Income <= 35039: 1 (4.0)

| | | | | | | | med Income > 35039: 0 (5.0/1.0)

| | | | | | | pctHousOwnerOccup > 60.24: 0 (5.0)

| | | | | | pctPopDenseHous > 8.88

| | | | | | | pctWdiv <= 38.24

| | | | | | | | pctAllDivorc <= 11.8: 1 (2.0)

| | | | | | | | pctAllDivorc > 11.8: 0 (2.0)

| | | | | | | pctWdiv > 38.24: 1 (8.0)

| | | | | pctKidsBornNevrMarr > 3.79: 1 (15.0)

| | persPoverty > 13026

| | | med Income <= 36058

| | | | pctWhite <= 89.38: 0 (27.0)

| | | | pctWhite > 89.38

| | | | | pctWhite <= 90.93: 1 (2.0)

| | | | | pctWhite > 90.93: 0 (3.0)

| | | med Income > 36058: 1 (4.0/1.0)

pct2Par > 75.8: 1 (585.0/46.0)

Number of Leaves : 31

Size of the tree : 61

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 489 81.6361 %

Incorrectly Classified Instances 110 18.3639 %

Kappa statistic 0.5756

Mean absolute error 0.2536

Root mean squared error 0.3926

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.667 0.108 0.757 0.667 0.709 0.578 0.801 0.660 0

0.892 0.333 0.841 0.892 0.866 0.578 0.801 0.853 1

Weighted Avg. 0.816 0.258 0.813 0.816 0.813 0.578 0.801 0.788

=== Confusion Matrix ===

a b <-- classified as

134 67 | a = 0

43 355 | b = 1

## NaiveBayes Model

=== Classifier model ===

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

============================================

pctWhite

mean 74.9498 89.1821

std. dev. 18.1747 12.469

weight sum 410 810

precision 0.0922 0.0922

med Income

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctWdiv

mean 36.9869 47.8489

std. dev. 10.6441 12.1074

weight sum 410 810

precision 0.0682 0.0682

medFamIncome

mean 32592.7223 44150.013

std. dev. 9954.894 15163.6477

weight sum 410 810

precision 107.7628 107.7628

persPoverty

mean 19166.2482 2499.0162

std. dev. 84839.4888 4191.4031

weight sum 410 810

precision 1236.5321 1236.5321

pctUnemploy

mean 7.4912 5.2522

std. dev. 3.2298 2.3249

weight sum 410 810

precision 0.0417 0.0417

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pct2Par

mean 66.2155 78.5709

std. dev. 9.4865 7.8828

weight sum 410 810

precision 0.0677 0.0677

pctKidsBornNevrMarr

mean 4.9822 2.0151

std. dev. 3.69 1.9649

weight sum 410 810

precision 0.0476 0.0476

pctPersOwnOccup

mean 58.4915 71.0758

std. dev. 11.2675 13.4708

weight sum 410 810

precision 0.0699 0.0699

pctPopDenseHous

mean 5.7037 3.3992

std. dev. 5.6841 5.5516

weight sum 410 810

precision 0.0943 0.0943

pctHousOwnerOccup

mean 56.2603 67.7035

std. dev. 11.3042 13.5429

weight sum 410 810

precision 0.0688 0.0688

pctHousWOphone

mean 6.7071 2.9217

std. dev. 4.1118 3.4473

weight sum 410 810

precision 0.0345 0.0345

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 492 82.1369 %

Incorrectly Classified Instances 107 17.8631 %

Kappa statistic 0.6038

Mean absolute error 0.1813

Root mean squared error 0.39

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.756 0.146 0.724 0.756 0.740 0.604 0.884 0.786 0

0.854 0.244 0.874 0.854 0.864 0.604 0.884 0.932 1

Weighted Avg. 0.821 0.211 0.824 0.821 0.822 0.604 0.884 0.883

=== Confusion Matrix ===

a b <-- classified as

152 49 | a = 0

58 340 | b = 1

## IBk (KNN) Model

=== Classifier model ===

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 494 82.4708 %

Incorrectly Classified Instances 105 17.5292 %

Kappa statistic 0.6045

Mean absolute error 0.2515

Root mean squared error 0.3596

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.126 0.745 0.726 0.736 0.605 0.875 0.770 0

0.874 0.274 0.864 0.874 0.869 0.605 0.875 0.912 1

Weighted Avg. 0.825 0.224 0.824 0.825 0.824 0.605 0.875 0.865

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

50 348 | b = 1

## Bagging with J48 Model

=== Model information ===

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.trees.J48 -C 0.25 -M 2

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 500 83.4725 %

Incorrectly Classified Instances 99 16.5275 %

Kappa statistic 0.6243

Mean absolute error 0.2455

Root mean squared error 0.357

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.111 0.768 0.726 0.747 0.625 0.877 0.799 0

0.889 0.274 0.866 0.889 0.877 0.625 0.877 0.917 1

Weighted Avg. 0.835 0.219 0.833 0.835 0.834 0.625 0.877 0.878

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

44 354 | b = 1

## Bagging with NaiveBayes Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.bayes.NaiveBayes

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 496 82.8047 %

Incorrectly Classified Instances 103 17.1953 %

Kappa statistic 0.6167

Mean absolute error 0.1815

Root mean squared error 0.3861

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.756 0.136 0.738 0.756 0.747 0.617 0.886 0.795 0

0.864 0.244 0.875 0.864 0.870 0.617 0.886 0.933 1

Weighted Avg. 0.828 0.208 0.829 0.828 0.829 0.617 0.886 0.887

=== Confusion Matrix ===

a b <-- classified as

152 49 | a = 0

54 344 | b = 1

## Bagging with IBk (KNN) Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.bayes.NaiveBayes

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 496 82.8047 %

Incorrectly Classified Instances 103 17.1953 %

Kappa statistic 0.6167

Mean absolute error 0.1815

Root mean squared error 0.3861

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.756 0.136 0.738 0.756 0.747 0.617 0.886 0.795 0

0.864 0.244 0.875 0.864 0.870 0.617 0.886 0.933 1

Weighted Avg. 0.828 0.208 0.829 0.828 0.829 0.617 0.886 0.887

=== Confusion Matrix ===

a b <-- classified as

152 49 | a = 0

54 344 | b = 1

## AdaBoostM1 with J48 Model

=== Model information ===

Filename: info\_gain\_adaboostm1\_j48.model

Scheme: weka.classifiers.meta.AdaBoostM1 -P 100 -S 1 -I 10 -W weka.classifiers.trees.J48 -- -C 0.25 -M 2

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Attributes: 14

pctWhite

med Income

pctWdiv

medFamIncome

persPoverty

pctUnemploy

pctAllDivorc

pct2Par

pctKidsBornNevrMarr

pctPersOwnOccup

pctPopDenseHous

pctHousOwnerOccup

pctHousWOphone

Class

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

J48 pruned tree

------------------

pct2Par <= 75.8

| pct2Par <= 66.58

| | pctAllDivorc <= 14.3

| | | pctAllDivorc <= 8.84: 1 (10.0/1.0)

| | | pctAllDivorc > 8.84

| | | | pctKidsBornNevrMarr <= 3.24

| | | | | pctWhite <= 97.72

| | | | | | medFamIncome <= 33357: 1 (13.0/1.0)

| | | | | | medFamIncome > 33357: 0 (4.0/1.0)

| | | | | pctWhite > 97.72: 0 (3.0)

| | | | pctKidsBornNevrMarr > 3.24: 0 (127.0/27.0)

| | pctAllDivorc > 14.3: 0 (100.0/6.0)

| pct2Par > 66.58

| | persPoverty <= 13026

| | | persPoverty <= 3733: 1 (205.0/62.0)

| | | persPoverty > 3733

| | | | med Income <= 31063

| | | | | pctKidsBornNevrMarr <= 7.15

| | | | | | pctPopDenseHous <= 3.27

| | | | | | | pctAllDivorc <= 13.71

| | | | | | | | pctKidsBornNevrMarr <= 2.47

| | | | | | | | | pctWdiv <= 38.01: 1 (4.0)

| | | | | | | | | pctWdiv > 38.01

| | | | | | | | | | pct2Par <= 73.65: 0 (7.0/1.0)

| | | | | | | | | | pct2Par > 73.65

| | | | | | | | | | | pctWhite <= 96.03: 1 (4.0/1.0)

| | | | | | | | | | | pctWhite > 96.03: 0 (2.0)

| | | | | | | | pctKidsBornNevrMarr > 2.47: 1 (17.0/1.0)

| | | | | | | pctAllDivorc > 13.71: 0 (8.0/1.0)

| | | | | | pctPopDenseHous > 3.27

| | | | | | | pctAllDivorc <= 9.2

| | | | | | | | pctWhite <= 76.76: 0 (3.0/1.0)

| | | | | | | | pctWhite > 76.76: 1 (3.0)

| | | | | | | pctAllDivorc > 9.2

| | | | | | | | pct2Par <= 68.13

| | | | | | | | | medFamIncome <= 30017: 1 (5.0/1.0)

| | | | | | | | | medFamIncome > 30017: 0 (3.0)

| | | | | | | | pct2Par > 68.13: 0 (35.0)

| | | | | pctKidsBornNevrMarr > 7.15: 1 (5.0)

| | | | med Income > 31063

| | | | | pctKidsBornNevrMarr <= 3.79

| | | | | | pctPopDenseHous <= 8.88

| | | | | | | pctHousOwnerOccup <= 60.24

| | | | | | | | med Income <= 35039: 1 (4.0)

| | | | | | | | med Income > 35039: 0 (5.0/1.0)

| | | | | | | pctHousOwnerOccup > 60.24: 0 (5.0)

| | | | | | pctPopDenseHous > 8.88

| | | | | | | pctWdiv <= 38.24

| | | | | | | | pctAllDivorc <= 11.8: 1 (2.0)

| | | | | | | | pctAllDivorc > 11.8: 0 (2.0)

| | | | | | | pctWdiv > 38.24: 1 (8.0)

| | | | | pctKidsBornNevrMarr > 3.79: 1 (15.0)

| | persPoverty > 13026

| | | med Income <= 36058

| | | | pctWhite <= 89.38: 0 (27.0)

| | | | pctWhite > 89.38

| | | | | pctWhite <= 90.93: 1 (2.0)

| | | | | pctWhite > 90.93: 0 (3.0)

| | | med Income > 36058: 1 (4.0/1.0)

pct2Par > 75.8: 1 (585.0/46.0)

Number of Leaves : 31

Size of the tree : 61

Weight: 1.95

J48 pruned tree

------------------

pct2Par <= 81.18

| pctWhite <= 97.85

| | pct2Par <= 65.52

| | | persPoverty <= 32778

| | | | pctAllDivorc <= 14.1

| | | | | persPoverty <= 2833: 1 (43.54/4.0)

| | | | | persPoverty > 2833

| | | | | | medFamIncome <= 31959

| | | | | | | pctHousWOphone <= 5.29: 0 (8.58/1.14)

| | | | | | | pctHousWOphone > 5.29

| | | | | | | | medFamIncome <= 21787: 0 (6.85/1.14)

| | | | | | | | medFamIncome > 21787

| | | | | | | | | pctUnemploy <= 8.36

| | | | | | | | | | pct2Par <= 62.35: 0 (9.71/1.14)

| | | | | | | | | | pct2Par > 62.35

| | | | | | | | | | | pctWhite <= 72.81: 1 (12.61)

| | | | | | | | | | | pctWhite > 72.81

| | | | | | | | | | | | med Income <= 18404: 1 (4.01)

| | | | | | | | | | | | med Income > 18404: 0 (2.28)

| | | | | | | | | pctUnemploy > 8.36

| | | | | | | | | | med Income <= 20213

| | | | | | | | | | | pctHousWOphone <= 11.77: 0 (3.43)

| | | | | | | | | | | pctHousWOphone > 11.77: 1 (12.04)

| | | | | | | | | | med Income > 20213: 1 (36.69/0.57)

| | | | | | medFamIncome > 31959: 0 (11.42)

| | | | pctAllDivorc > 14.1

| | | | | pctUnemploy <= 7.66: 0 (17.71)

| | | | | pctUnemploy > 7.66

| | | | | | pctUnemploy <= 9.57

| | | | | | | pctHousWOphone <= 10.9

| | | | | | | | pctKidsBornNevrMarr <= 4.57: 0 (3.43)

| | | | | | | | pctKidsBornNevrMarr > 4.57

| | | | | | | | | persPoverty <= 11887

| | | | | | | | | | pctPersOwnOccup <= 57.37

| | | | | | | | | | | pctHousOwnerOccup <= 48.9: 1 (8.6/0.57)

| | | | | | | | | | | pctHousOwnerOccup > 48.9: 0 (2.28)

| | | | | | | | | | pctPersOwnOccup > 57.37: 1 (20.07)

| | | | | | | | | persPoverty > 11887: 0 (2.28)

| | | | | | | pctHousWOphone > 10.9: 0 (5.14)

| | | | | | pctUnemploy > 9.57: 0 (13.14)

| | | persPoverty > 32778: 0 (13.14)

| | pct2Par > 65.52

| | | pctAllDivorc <= 10.46

| | | | persPoverty <= 1290

| | | | | persPoverty <= 1178

| | | | | | pctWhite <= 80.52: 0 (4.58/0.57)

| | | | | | pctWhite > 80.52: 1 (21.13)

| | | | | persPoverty > 1178: 0 (28.09)

| | | | persPoverty > 1290

| | | | | pctKidsBornNevrMarr <= 1.42: 1 (17.72)

| | | | | pctKidsBornNevrMarr > 1.42

| | | | | | persPoverty <= 1788: 1 (8.57)

| | | | | | persPoverty > 1788

| | | | | | | persPoverty <= 2106: 0 (22.92/2.86)

| | | | | | | persPoverty > 2106

| | | | | | | | persPoverty <= 2895: 1 (9.14)

| | | | | | | | persPoverty > 2895

| | | | | | | | | pctHousOwnerOccup <= 61.96

| | | | | | | | | | med Income <= 23661

| | | | | | | | | | | pct2Par <= 76.19: 0 (14.31/1.71)

| | | | | | | | | | | pct2Par > 76.19: 1 (4.0)

| | | | | | | | | | med Income > 23661: 1 (18.86/1.71)

| | | | | | | | | pctHousOwnerOccup > 61.96: 0 (26.92/4.57)

| | | pctAllDivorc > 10.46: 0 (527.29/149.13)

| pctWhite > 97.85

| | pctPopDenseHous <= 0.79: 0 (9.74/1.71)

| | pctPopDenseHous > 0.79

| | | pct2Par <= 66.64: 0 (2.28/0.57)

| | | pct2Par > 66.64: 1 (30.84/0.57)

pct2Par > 81.18

| pctWhite <= 88.31

| | pctUnemploy <= 4.25

| | | pctUnemploy <= 2.82: 1 (5.71)

| | | pctUnemploy > 2.82

| | | | pctPersOwnOccup <= 80.63

| | | | | pctUnemploy <= 3.35: 0 (9.74/1.71)

| | | | | pctUnemploy > 3.35: 1 (6.28)

| | | | pctPersOwnOccup > 80.63: 0 (24.65/0.57)

| | pctUnemploy > 4.25: 1 (6.85)

| pctWhite > 88.31

| | persPoverty <= 486

| | | pctHousWOphone <= 1.21

| | | | pctHousWOphone <= 0.14

| | | | | pctHousWOphone <= 0.13

| | | | | | med Income <= 41372: 0 (4.58/0.57)

| | | | | | med Income > 41372: 1 (14.28)

| | | | | pctHousWOphone > 0.13: 0 (4.58/0.57)

| | | | pctHousWOphone > 0.14: 1 (47.98)

| | | pctHousWOphone > 1.21

| | | | pctHousWOphone <= 1.32: 0 (8.03)

| | | | pctHousWOphone > 1.32: 1 (2.86)

| | persPoverty > 486: 1 (101.1)

Number of Leaves : 47

Size of the tree : 93

Weight: 1.78

J48 pruned tree

------------------

pctAllDivorc <= 14.61

| pctWhite <= 85.9

| | med Income <= 31461

| | | pctWdiv <= 32.86: 1 (144.92/48.09)

| | | pctWdiv > 32.86

| | | | pctKidsBornNevrMarr <= 2.64

| | | | | pctWhite <= 85.19

| | | | | | pctHousOwnerOccup <= 62.94

| | | | | | | pctPersOwnOccup <= 59.01: 1 (2.99)

| | | | | | | pctPersOwnOccup > 59.01: 0 (2.68)

| | | | | | pctHousOwnerOccup > 62.94: 1 (12.25)

| | | | | pctWhite > 85.19: 0 (5.69/0.67)

| | | | pctKidsBornNevrMarr > 2.64

| | | | | pctUnemploy <= 3.68: 1 (4.33)

| | | | | pctUnemploy > 3.68

| | | | | | pctHousWOphone <= 2.75: 1 (4.33)

| | | | | | pctHousWOphone > 2.75

| | | | | | | pct2Par <= 64

| | | | | | | | pct2Par <= 63.19: 0 (13.65/0.33)

| | | | | | | | pct2Par > 63.19: 1 (8.36/0.67)

| | | | | | | pct2Par > 64

| | | | | | | | pctHousOwnerOccup <= 66.11: 0 (37.06)

| | | | | | | | pctHousOwnerOccup > 66.11

| | | | | | | | | pctUnemploy <= 6.97: 0 (5.35)

| | | | | | | | | pctUnemploy > 6.97: 1 (2.65)

| | med Income > 31461

| | | pctWdiv <= 60.64

| | | | pctHousOwnerOccup <= 80.31

| | | | | pct2Par <= 67.85

| | | | | | pct2Par <= 65.71: 0 (7.63)

| | | | | | pct2Par > 65.71: 1 (2.65/0.33)

| | | | | pct2Par > 67.85

| | | | | | pctWhite <= 70

| | | | | | | pctAllDivorc <= 11.34

| | | | | | | | pctWhite <= 61.09

| | | | | | | | | pctWhite <= 54.68: 0 (5.35/0.67)

| | | | | | | | | pctWhite > 54.68: 1 (11.27)

| | | | | | | | pctWhite > 61.09: 0 (12.38/0.67)

| | | | | | | pctAllDivorc > 11.34: 1 (16.56/0.67)

| | | | | | pctWhite > 70

| | | | | | | persPoverty <= 10591: 1 (115.03/6.02)

| | | | | | | persPoverty > 10591

| | | | | | | | medFamIncome <= 39769: 1 (8.61/0.33)

| | | | | | | | medFamIncome > 39769: 0 (5.69/0.33)

| | | | pctHousOwnerOccup > 80.31: 0 (11.04/1.67)

| | | pctWdiv > 60.64: 0 (16.06/2.0)

| pctWhite > 85.9

| | pctKidsBornNevrMarr <= 3.73

| | | pct2Par <= 82.71

| | | | pctWdiv <= 50.78

| | | | | pctPopDenseHous <= 1.09: 1 (26.93)

| | | | | pctPopDenseHous > 1.09

| | | | | | pct2Par <= 70.76

| | | | | | | pctPopDenseHous <= 2.59

| | | | | | | | pctPersOwnOccup <= 60.89: 1 (25.88/0.67)

| | | | | | | | pctPersOwnOccup > 60.89

| | | | | | | | | pctWdiv <= 40.55

| | | | | | | | | | pctWdiv <= 36.61

| | | | | | | | | | | persPoverty <= 7036: 0 (7.01)

| | | | | | | | | | | persPoverty > 7036: 1 (2.32/0.33)

| | | | | | | | | | pctWdiv > 36.61: 1 (15.57/0.67)

| | | | | | | | | pctWdiv > 40.55: 0 (13.05)

| | | | | | | pctPopDenseHous > 2.59

| | | | | | | | pctUnemploy <= 9.28: 0 (14.39)

| | | | | | | | pctUnemploy > 9.28: 1 (2.32/0.33)

| | | | | | pct2Par > 70.76

| | | | | | | pct2Par <= 79.72

| | | | | | | | persPoverty <= 1083: 1 (32.83)

| | | | | | | | persPoverty > 1083

| | | | | | | | | pctHousWOphone <= 0.97

| | | | | | | | | | pctWhite <= 93.96: 0 (7.03)

| | | | | | | | | | pctWhite > 93.96: 1 (2.99)

| | | | | | | | | pctHousWOphone > 0.97

| | | | | | | | | | persPoverty <= 1343

| | | | | | | | | | | pctWdiv <= 40.93: 1 (8.28)

| | | | | | | | | | | pctWdiv > 40.93: 0 (11.36/1.99)

| | | | | | | | | | persPoverty > 1343: 1 (167.16/21.75)

| | | | | | | pct2Par > 79.72

| | | | | | | | pctAllDivorc <= 10.84

| | | | | | | | | pctPersOwnOccup <= 89.35

| | | | | | | | | | pctPersOwnOccup <= 58.72: 0 (2.68/0.33)

| | | | | | | | | | pctPersOwnOccup > 58.72: 1 (16.28)

| | | | | | | | | pctPersOwnOccup > 89.35: 0 (2.34)

| | | | | | | | pctAllDivorc > 10.84

| | | | | | | | | med Income <= 36271: 0 (11.72)

| | | | | | | | | med Income > 36271

| | | | | | | | | | pctPopDenseHous <= 4: 1 (2.99)

| | | | | | | | | | pctPopDenseHous > 4: 0 (2.34)

| | | | pctWdiv > 50.78

| | | | | pctKidsBornNevrMarr <= 2.06

| | | | | | pct2Par <= 80.6

| | | | | | | pctAllDivorc <= 12.61

| | | | | | | | pctKidsBornNevrMarr <= 1.85

| | | | | | | | | pctAllDivorc <= 12.01

| | | | | | | | | | pctPopDenseHous <= 0.79: 0 (7.36/0.33)

| | | | | | | | | | pctPopDenseHous > 0.79

| | | | | | | | | | | pctPersOwnOccup <= 75.72

| | | | | | | | | | | | persPoverty <= 3056: 1 (16.25)

| | | | | | | | | | | | persPoverty > 3056: 0 (8.32/1.33)

| | | | | | | | | | | pctPersOwnOccup > 75.72

| | | | | | | | | | | | pctPersOwnOccup <= 77.48: 0 (9.37)

| | | | | | | | | | | | pctPersOwnOccup > 77.48

| | | | | | | | | | | | | pctWhite <= 94.21: 0 (2.34)

| | | | | | | | | | | | | pctWhite > 94.21: 1 (4.32)

| | | | | | | | | pctAllDivorc > 12.01: 0 (7.03)

| | | | | | | | pctKidsBornNevrMarr > 1.85: 1 (6.96)

| | | | | | | pctAllDivorc > 12.61: 1 (12.92/0.67)

| | | | | | pct2Par > 80.6: 1 (15.98)

| | | | | pctKidsBornNevrMarr > 2.06: 0 (15.73/1.33)

| | | pct2Par > 82.71

| | | | pctAllDivorc <= 4.6

| | | | | pctAllDivorc <= 4.48: 1 (3.34)

| | | | | pctAllDivorc > 4.48: 0 (4.69)

| | | | pctAllDivorc > 4.6

| | | | | pctKidsBornNevrMarr <= 0.81: 1 (52.36)

| | | | | pctKidsBornNevrMarr > 0.81

| | | | | | pct2Par <= 85.76: 1 (26.97)

| | | | | | pct2Par > 85.76

| | | | | | | pctHousWOphone <= 1.1

| | | | | | | | pctKidsBornNevrMarr <= 0.82: 0 (2.34)

| | | | | | | | pctKidsBornNevrMarr > 0.82: 1 (13.65)

| | | | | | | pctHousWOphone > 1.1: 0 (5.02/0.33)

| | pctKidsBornNevrMarr > 3.73: 1 (75.05/2.0)

pctAllDivorc > 14.61

| medFamIncome <= 25371: 0 (13.0)

| medFamIncome > 25371

| | persPoverty <= 10320

| | | pctKidsBornNevrMarr <= 1.12: 0 (7.36)

| | | pctKidsBornNevrMarr > 1.12

| | | | pctPersOwnOccup <= 62.84

| | | | | pctWhite <= 70.89

| | | | | | pctKidsBornNevrMarr <= 8.37: 1 (11.0)

| | | | | | pctKidsBornNevrMarr > 8.37: 0 (2.67)

| | | | | pctWhite > 70.89

| | | | | | pct2Par <= 66.86: 0 (10.35)

| | | | | | pct2Par > 66.86

| | | | | | | pctHousOwnerOccup <= 44.16: 0 (5.35)

| | | | | | | pctHousOwnerOccup > 44.16

| | | | | | | | pctHousOwnerOccup <= 55.38

| | | | | | | | | persPoverty <= 2338: 1 (11.92)

| | | | | | | | | persPoverty > 2338

| | | | | | | | | | pct2Par <= 67.77: 1 (3.97)

| | | | | | | | | | pct2Par > 67.77: 0 (5.69)

| | | | | | | | pctHousOwnerOccup > 55.38: 0 (4.69)

| | | | pctPersOwnOccup > 62.84: 1 (11.98/1.0)

| | persPoverty > 10320: 0 (10.01)

Number of Leaves : 74

Size of the tree : 147

Weight: 2.47

J48 pruned tree

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pct2Par <= 75.8

| pctWdiv <= 31.82

| | med Income <= 28745

| | | pctWhite <= 76.37

| | | | pctPersOwnOccup <= 54.04

| | | | | med Income <= 15938

| | | | | | pctWhite <= 55.19: 0 (4.62)

| | | | | | pctWhite > 55.19: 1 (2.35)

| | | | | med Income > 15938: 0 (106.06/2.0)

| | | | pctPersOwnOccup > 54.04

| | | | | pctPersOwnOccup <= 58.53

| | | | | | persPoverty <= 3872: 1 (6.14)

| | | | | | persPoverty > 3872

| | | | | | | pctWhite <= 64.62

| | | | | | | | pctKidsBornNevrMarr <= 9.09: 0 (12.96)

| | | | | | | | pctKidsBornNevrMarr > 9.09

| | | | | | | | | pctWhite <= 42.52: 0 (5.71/1.27)

| | | | | | | | | pctWhite > 42.52: 1 (3.81)

| | | | | | | pctWhite > 64.62: 1 (4.88/0.18)

| | | | | pctPersOwnOccup > 58.53

| | | | | | pctKidsBornNevrMarr <= 7.8

| | | | | | | pctAllDivorc <= 12.61

| | | | | | | | pctUnemploy <= 8.43: 1 (2.34)

| | | | | | | | pctUnemploy > 8.43: 0 (35.21/1.08)

| | | | | | | pctAllDivorc > 12.61: 0 (59.75)

| | | | | | pctKidsBornNevrMarr > 7.8

| | | | | | | pctHousOwnerOccup <= 61.69: 0 (14.59/1.27)

| | | | | | | pctHousOwnerOccup > 61.69: 1 (3.62)

| | | pctWhite > 76.37

| | | | pctKidsBornNevrMarr <= 1.33: 0 (16.42/0.18)

| | | | pctKidsBornNevrMarr > 1.33

| | | | | pctPersOwnOccup <= 64.92

| | | | | | pctPopDenseHous <= 3.38: 1 (6.67/1.09)

| | | | | | pctPopDenseHous > 3.38

| | | | | | | pctHousOwnerOccup <= 28.64: 1 (2.54)

| | | | | | | pctHousOwnerOccup > 28.64: 0 (19.7/2.16)

| | | | | pctPersOwnOccup > 64.92: 1 (5.39)

| | med Income > 28745

| | | pctPopDenseHous <= 10.74: 0 (2.49)

| | | pctPopDenseHous > 10.74

| | | | persPoverty <= 14251: 1 (12.2)

| | | | persPoverty > 14251: 0 (2.13)

| pctWdiv > 31.82

| | pct2Par <= 75.35

| | | pctKidsBornNevrMarr <= 8.19

| | | | pctAllDivorc <= 11.07

| | | | | pctWhite <= 94.91: 1 (59.32/11.05)

| | | | | pctWhite > 94.91

| | | | | | pctPopDenseHous <= 1.35: 1 (4.32)

| | | | | | pctPopDenseHous > 1.35

| | | | | | | pctKidsBornNevrMarr <= 2.02: 1 (3.78/1.26)

| | | | | | | pctKidsBornNevrMarr > 2.02: 0 (9.71/0.36)

| | | | pctAllDivorc > 11.07

| | | | | pctWdiv <= 34.81

| | | | | | pctWhite <= 81.81

| | | | | | | pctUnemploy <= 8.01

| | | | | | | | pctHousWOphone <= 5.6: 1 (3.61/0.18)

| | | | | | | | pctHousWOphone > 5.6: 0 (13.09/1.08)

| | | | | | | pctUnemploy > 8.01: 1 (8.64/0.9)

| | | | | | pctWhite > 81.81: 1 (26.12/2.0)

| | | | | pctWdiv > 34.81

| | | | | | pctUnemploy <= 3.99

| | | | | | | pctAllDivorc <= 13.48: 1 (23.04/1.27)

| | | | | | | pctAllDivorc > 13.48

| | | | | | | | pctWhite <= 93.18

| | | | | | | | | pctWdiv <= 46.43

| | | | | | | | | | med Income <= 34006: 0 (2.35)

| | | | | | | | | | med Income > 34006: 1 (2.16)

| | | | | | | | | pctWdiv > 46.43: 0 (5.27)

| | | | | | | | pctWhite > 93.18: 1 (2.35)

| | | | | | pctUnemploy > 3.99

| | | | | | | pct2Par <= 73.58

| | | | | | | | pctAllDivorc <= 11.23: 0 (21.26/1.26)

| | | | | | | | pctAllDivorc > 11.23

| | | | | | | | | persPoverty <= 2461

| | | | | | | | | | pctWdiv <= 51.9

| | | | | | | | | | | pctPersOwnOccup <= 73.23

| | | | | | | | | | | | pct2Par <= 64.7: 0 (4.84/1.27)

| | | | | | | | | | | | pct2Par > 64.7: 1 (40.08/3.45)

| | | | | | | | | | | pctPersOwnOccup > 73.23: 0 (3.81)

| | | | | | | | | | pctWdiv > 51.9: 0 (4.28)

| | | | | | | | | persPoverty > 2461

| | | | | | | | | | pctUnemploy <= 6.83

| | | | | | | | | | | pctAllDivorc <= 11.7: 1 (4.68/0.18)

| | | | | | | | | | | pctAllDivorc > 11.7

| | | | | | | | | | | | pctKidsBornNevrMarr <= 1.8: 0 (26.21)

| | | | | | | | | | | | pctKidsBornNevrMarr > 1.8

| | | | | | | | | | | | | persPoverty <= 7877

| | | | | | | | | | | | | | pctKidsBornNevrMarr <= 2.4: 1 (4.49/0.18)

| | | | | | | | | | | | | | pctKidsBornNevrMarr > 2.4

| | | | | | | | | | | | | | | pctPopDenseHous <= 9.14: 0 (16.28/2.16)

| | | | | | | | | | | | | | | pctPopDenseHous > 9.14: 1 (2.16)

| | | | | | | | | | | | | persPoverty > 7877: 0 (18.89)

| | | | | | | | | | pctUnemploy > 6.83

| | | | | | | | | | | pct2Par <= 62.29: 0 (7.51)

| | | | | | | | | | | pct2Par > 62.29

| | | | | | | | | | | | pctAllDivorc <= 14.37

| | | | | | | | | | | | | pctWdiv <= 35.67: 0 (6.25)

| | | | | | | | | | | | | pctWdiv > 35.67

| | | | | | | | | | | | | | pctWdiv <= 37.88: 1 (12.08/0.54)

| | | | | | | | | | | | | | pctWdiv > 37.88

| | | | | | | | | | | | | | | pctAllDivorc <= 12.56: 1 (9.19/1.45)

| | | | | | | | | | | | | | | pctAllDivorc > 12.56: 0 (15.16/2.34)

| | | | | | | | | | | | pctAllDivorc > 14.37: 1 (13.16/0.9)

| | | | | | | pct2Par > 73.58

| | | | | | | | pctKidsBornNevrMarr <= 3.41

| | | | | | | | | med Income <= 24788: 0 (51.7)

| | | | | | | | | med Income > 24788

| | | | | | | | | | pctPopDenseHous <= 2.73: 1 (9.34/1.08)

| | | | | | | | | | pctPopDenseHous > 2.73

| | | | | | | | | | | pctWhite <= 88.96: 0 (24.26)

| | | | | | | | | | | pctWhite > 88.96

| | | | | | | | | | | | pctAllDivorc <= 13.55: 1 (2.16)

| | | | | | | | | | | | pctAllDivorc > 13.55: 0 (3.81)

| | | | | | | | pctKidsBornNevrMarr > 3.41: 1 (5.39)

| | | pctKidsBornNevrMarr > 8.19: 0 (24.89/1.26)

| | pct2Par > 75.35

| | | med Income <= 32857: 0 (48.34/0.72)

| | | med Income > 32857

| | | | pctHousWOphone <= 0.97: 0 (2.54)

| | | | pctHousWOphone > 0.97: 1 (6.12/1.27)

pct2Par > 75.8

| pctWdiv <= 32.47

| | pctWhite <= 66.29: 1 (5.72)

| | pctWhite > 66.29: 0 (34.09/1.62)

| pctWdiv > 32.47

| | pctUnemploy <= 5.13

| | | pctUnemploy <= 5.12: 1 (201.67/45.77)

| | | pctUnemploy > 5.12: 0 (16.04/1.08)

| | pctUnemploy > 5.13

| | | pctKidsBornNevrMarr <= 1.61: 1 (43.3)

| | | pctKidsBornNevrMarr > 1.61

| | | | pctWdiv <= 40.04: 1 (15.91)

| | | | pctWdiv > 40.04

| | | | | pctWhite <= 79.77: 0 (3.81)

| | | | | pctWhite > 79.77

| | | | | | pctKidsBornNevrMarr <= 1.65

| | | | | | | pctUnemploy <= 5.54: 1 (2.52)

| | | | | | | pctUnemploy > 5.54: 0 (2.72/0.18)

| | | | | | pctKidsBornNevrMarr > 1.65: 1 (12.0)

Number of Leaves : 71

Size of the tree : 141

Weight: 2.48

J48 pruned tree

------------------

pctWdiv <= 17.39

| pctAllDivorc <= 13.54

| | med Income <= 23695

| | | pctWdiv <= 13.3: 0 (2.31)

| | | pctWdiv > 13.3: 1 (8.16)

| | med Income > 23695: 1 (12.92)

| pctAllDivorc > 13.54: 0 (2.03)

pctWdiv > 17.39

| pctHousWOphone <= 15.75

| | pctUnemploy <= 9.45

| | | pctUnemploy <= 5.09

| | | | pctHousOwnerOccup <= 50.86

| | | | | pct2Par <= 71.73: 0 (12.88/5.45)

| | | | | pct2Par > 71.73: 1 (19.47/1.48)

| | | | pctHousOwnerOccup > 50.86: 0 (471.99/98.41)

| | | pctUnemploy > 5.09

| | | | pct2Par <= 75.81

| | | | | pct2Par <= 72.06

| | | | | | pct2Par <= 71.46

| | | | | | | pctPopDenseHous <= 1.33: 1 (19.63/1.25)

| | | | | | | pctPopDenseHous > 1.33

| | | | | | | | pctHousWOphone <= 9.37

| | | | | | | | | pctHousWOphone <= 8.75

| | | | | | | | | | pct2Par <= 68.34

| | | | | | | | | | | persPoverty <= 8492

| | | | | | | | | | | | pctWhite <= 95.57

| | | | | | | | | | | | | pct2Par <= 67.27

| | | | | | | | | | | | | | pctUnemploy <= 8.82

| | | | | | | | | | | | | | | pctAllDivorc <= 13.28: 1 (14.4/3.68)

| | | | | | | | | | | | | | | pctAllDivorc > 13.28: 0 (10.72/1.27)

| | | | | | | | | | | | | | pctUnemploy > 8.82: 1 (13.72/0.1)

| | | | | | | | | | | | | pct2Par > 67.27: 1 (15.76)

| | | | | | | | | | | | pctWhite > 95.57: 0 (8.94/0.58)

| | | | | | | | | | | persPoverty > 8492: 0 (27.81/4.71)

| | | | | | | | | | pct2Par > 68.34

| | | | | | | | | | | pctPersOwnOccup <= 52.22: 1 (4.47/0.79)

| | | | | | | | | | | pctPersOwnOccup > 52.22

| | | | | | | | | | | | medFamIncome <= 30760

| | | | | | | | | | | | | pctPersOwnOccup <= 63.82: 0 (3.41/0.1)

| | | | | | | | | | | | | pctPersOwnOccup > 63.82: 1 (2.92)

| | | | | | | | | | | | medFamIncome > 30760

| | | | | | | | | | | | | pctUnemploy <= 5.77: 1 (2.54/0.79)

| | | | | | | | | | | | | pctUnemploy > 5.77: 0 (41.75/0.68)

| | | | | | | | | pctHousWOphone > 8.75

| | | | | | | | | | pct2Par <= 69.84: 1 (25.65/0.39)

| | | | | | | | | | pct2Par > 69.84: 0 (2.45/0.58)

| | | | | | | | pctHousWOphone > 9.37

| | | | | | | | | pctAllDivorc <= 12.46

| | | | | | | | | | medFamIncome <= 26654: 1 (3.81)

| | | | | | | | | | medFamIncome > 26654: 0 (3.8/1.27)

| | | | | | | | | pctAllDivorc > 12.46: 0 (58.83/6.47)

| | | | | | pct2Par > 71.46: 1 (27.09/1.35)

| | | | | pct2Par > 72.06

| | | | | | medFamIncome <= 28117: 0 (43.78/1.27)

| | | | | | medFamIncome > 28117

| | | | | | | pctPopDenseHous <= 1.27: 1 (5.76)

| | | | | | | pctPopDenseHous > 1.27

| | | | | | | | pctPopDenseHous <= 1.41: 0 (15.79)

| | | | | | | | pctPopDenseHous > 1.41

| | | | | | | | | pctWhite <= 89.13

| | | | | | | | | | pctPopDenseHous <= 17.88

| | | | | | | | | | | pctHousWOphone <= 2.01: 0 (35.03/1.17)

| | | | | | | | | | | pctHousWOphone > 2.01

| | | | | | | | | | | | persPoverty <= 4159

| | | | | | | | | | | | | pctHousWOphone <= 6.51: 1 (5.94)

| | | | | | | | | | | | | pctHousWOphone > 6.51: 0 (4.12/1.36)

| | | | | | | | | | | | persPoverty > 4159

| | | | | | | | | | | | | med Income <= 32857: 0 (18.02)

| | | | | | | | | | | | | med Income > 32857

| | | | | | | | | | | | | | pctAllDivorc <= 11.92: 1 (2.33)

| | | | | | | | | | | | | | pctAllDivorc > 11.92: 0 (3.68/0.58)

| | | | | | | | | | pctPopDenseHous > 17.88: 1 (3.78)

| | | | | | | | | pctWhite > 89.13

| | | | | | | | | | med Income <= 22497: 0 (4.27/0.1)

| | | | | | | | | | med Income > 22497: 1 (14.93/2.07)

| | | | pct2Par > 75.81

| | | | | pctPopDenseHous <= 2.81: 1 (38.72/1.38)

| | | | | pctPopDenseHous > 2.81

| | | | | | pctPopDenseHous <= 4.11

| | | | | | | pctWhite <= 94.42: 0 (17.1/0.2)

| | | | | | | pctWhite > 94.42: 1 (2.23)

| | | | | | pctPopDenseHous > 4.11: 1 (17.53/2.75)

| | pctUnemploy > 9.45

| | | persPoverty <= 2633

| | | | pctWdiv <= 28.95: 0 (9.46)

| | | | pctWdiv > 28.95: 1 (7.8/1.47)

| | | persPoverty > 2633: 0 (119.44/8.2)

| pctHousWOphone > 15.75

| | pctPersOwnOccup <= 64.29

| | | pctUnemploy <= 8.93: 0 (2.31)

| | | pctUnemploy > 8.93: 1 (25.92/1.25)

| | pctPersOwnOccup > 64.29: 0 (4.62)

Number of Leaves : 47

Size of the tree : 93

Weight: 1.96

J48 pruned tree

------------------

pctUnemploy <= 5.04

| pctWdiv <= 70.39

| | pctPersOwnOccup <= 91.07

| | | pctPopDenseHous <= 0.74: 1 (33.05)

| | | pctPopDenseHous > 0.74

| | | | persPoverty <= 422: 1 (25.9)

| | | | persPoverty > 422

| | | | | pctUnemploy <= 2.4

| | | | | | pctHousOwnerOccup <= 55.68: 1 (6.65/0.39)

| | | | | | pctHousOwnerOccup > 55.68: 0 (25.51/1.98)

| | | | | pctUnemploy > 2.4

| | | | | | pctPopDenseHous <= 1.46

| | | | | | | pctWdiv <= 50.94: 1 (25.8/0.67)

| | | | | | | pctWdiv > 50.94

| | | | | | | | pctPersOwnOccup <= 82.63

| | | | | | | | | pctWdiv <= 51.62: 0 (18.11)

| | | | | | | | | pctWdiv > 51.62

| | | | | | | | | | pctKidsBornNevrMarr <= 0.65: 1 (7.88)

| | | | | | | | | | pctKidsBornNevrMarr > 0.65

| | | | | | | | | | | persPoverty <= 1234

| | | | | | | | | | | | pctWhite <= 95.09: 0 (33.27/0.4)

| | | | | | | | | | | | pctWhite > 95.09

| | | | | | | | | | | | | pctUnemploy <= 2.99: 0 (9.41)

| | | | | | | | | | | | | pctUnemploy > 2.99: 1 (6.73)

| | | | | | | | | | | persPoverty > 1234: 1 (13.34/0.39)

| | | | | | | | pctPersOwnOccup > 82.63: 1 (9.49)

| | | | | | pctPopDenseHous > 1.46

| | | | | | | pctUnemploy <= 3.14: 1 (42.16)

| | | | | | | pctUnemploy > 3.14

| | | | | | | | pctHousOwnerOccup <= 82.54

| | | | | | | | | pctPopDenseHous <= 2.01: 1 (65.35/2.78)

| | | | | | | | | pctPopDenseHous > 2.01

| | | | | | | | | | pctUnemploy <= 3.31

| | | | | | | | | | | pct2Par <= 71.9: 1 (2.36)

| | | | | | | | | | | pct2Par > 71.9: 0 (14.83/0.4)

| | | | | | | | | | pctUnemploy > 3.31

| | | | | | | | | | | pctHousWOphone <= 4.22

| | | | | | | | | | | | pctHousOwnerOccup <= 44.64

| | | | | | | | | | | | | pctUnemploy <= 3.8: 0 (5.56)

| | | | | | | | | | | | | pctUnemploy > 3.8: 1 (2.89/0.84)

| | | | | | | | | | | | pctHousOwnerOccup > 44.64

| | | | | | | | | | | | | med Income <= 41933

| | | | | | | | | | | | | | medFamIncome <= 46700

| | | | | | | | | | | | | | | pctPersOwnOccup <= 71.56: 1 (57.47/2.45)

| | | | | | | | | | | | | | | pctPersOwnOccup > 71.56

| | | | | | | | | | | | | | | | pct2Par <= 73.18: 0 (5.96)

| | | | | | | | | | | | | | | | pct2Par > 73.18

| | | | | | | | | | | | | | | | | pctAllDivorc <= 9.86

| | | | | | | | | | | | | | | | | | pctPersOwnOccup <= 76.48: 1 (3.54)

| | | | | | | | | | | | | | | | | | pctPersOwnOccup > 76.48: 0 (11.0/1.58)

| | | | | | | | | | | | | | | | | pctAllDivorc > 9.86: 1 (15.32)

| | | | | | | | | | | | | | medFamIncome > 46700: 0 (11.13/0.4)

| | | | | | | | | | | | | med Income > 41933: 1 (53.59/0.39)

| | | | | | | | | | | pctHousWOphone > 4.22

| | | | | | | | | | | | pctPopDenseHous <= 3.03: 1 (12.52/1.89)

| | | | | | | | | | | | pctPopDenseHous > 3.03

| | | | | | | | | | | | | pctKidsBornNevrMarr <= 2.4

| | | | | | | | | | | | | | pct2Par <= 79.13: 1 (10.42/0.66)

| | | | | | | | | | | | | | pct2Par > 79.13: 0 (9.41)

| | | | | | | | | | | | | pctKidsBornNevrMarr > 2.4: 0 (16.67/0.33)

| | | | | | | | pctHousOwnerOccup > 82.54: 0 (16.1/1.98)

| | pctPersOwnOccup > 91.07

| | | pctUnemploy <= 4.52

| | | | pctPersOwnOccup <= 91.75: 0 (19.62/0.79)

| | | | pctPersOwnOccup > 91.75

| | | | | pctKidsBornNevrMarr <= 0.18: 0 (9.81/0.4)

| | | | | pctKidsBornNevrMarr > 0.18: 1 (5.93)

| | | pctUnemploy > 4.52: 1 (3.94)

| pctWdiv > 70.39: 1 (26.54)

pctUnemploy > 5.04

| pctWdiv <= 46.08

| | pctWdiv <= 41.03

| | | pctUnemploy <= 11.76

| | | | pctUnemploy <= 10.62

| | | | | medFamIncome <= 25406

| | | | | | med Income <= 14555: 0 (4.63)

| | | | | | med Income > 14555

| | | | | | | pctUnemploy <= 8.67

| | | | | | | | med Income <= 19906: 0 (14.89/1.06)

| | | | | | | | med Income > 19906

| | | | | | | | | pctPersOwnOccup <= 57.06: 0 (2.16)

| | | | | | | | | pctPersOwnOccup > 57.06: 1 (14.83/0.45)

| | | | | | | pctUnemploy > 8.67: 1 (46.82/5.94)

| | | | | medFamIncome > 25406

| | | | | | medFamIncome <= 28639

| | | | | | | med Income <= 18253: 1 (4.62)

| | | | | | | med Income > 18253: 0 (66.46/8.09)

| | | | | | medFamIncome > 28639

| | | | | | | medFamIncome <= 29748

| | | | | | | | pctKidsBornNevrMarr <= 4.66: 1 (22.65/0.56)

| | | | | | | | pctKidsBornNevrMarr > 4.66: 0 (2.95/0.39)

| | | | | | | medFamIncome > 29748

| | | | | | | | pctKidsBornNevrMarr <= 3.4

| | | | | | | | | pctWdiv <= 28.65: 0 (17.99)

| | | | | | | | | pctWdiv > 28.65

| | | | | | | | | | pctWdiv <= 34.75

| | | | | | | | | | | pctPersOwnOccup <= 54.86: 0 (3.05)

| | | | | | | | | | | pctPersOwnOccup > 54.86: 1 (9.58/0.77)

| | | | | | | | | | pctWdiv > 34.75

| | | | | | | | | | | pctUnemploy <= 6.91: 0 (35.31/2.94)

| | | | | | | | | | | pctUnemploy > 6.91: 1 (6.5/2.38)

| | | | | | | | pctKidsBornNevrMarr > 3.4

| | | | | | | | | pctPersOwnOccup <= 68.49

| | | | | | | | | | persPoverty <= 5862

| | | | | | | | | | | medFamIncome <= 31379: 0 (6.09)

| | | | | | | | | | | medFamIncome > 31379: 1 (31.88/1.41)

| | | | | | | | | | persPoverty > 5862

| | | | | | | | | | | pctPersOwnOccup <= 61.27

| | | | | | | | | | | | pctPopDenseHous <= 22.26: 0 (23.51)

| | | | | | | | | | | | pctPopDenseHous > 22.26: 1 (3.47)

| | | | | | | | | | | pctPersOwnOccup > 61.27: 1 (16.29/3.01)

| | | | | | | | | pctPersOwnOccup > 68.49

| | | | | | | | | | pct2Par <= 75.73: 0 (17.15/0.33)

| | | | | | | | | | pct2Par > 75.73: 1 (2.36)

| | | | pctUnemploy > 10.62

| | | | | pctPopDenseHous <= 1.08: 1 (2.36)

| | | | | pctPopDenseHous > 1.08

| | | | | | pct2Par <= 71.46: 0 (34.45)

| | | | | | pct2Par > 71.46: 1 (2.04/0.66)

| | | pctUnemploy > 11.76

| | | | pctAllDivorc <= 13.82

| | | | | medFamIncome <= 21900: 0 (6.06/1.45)

| | | | | medFamIncome > 21900: 1 (37.09/4.61)

| | | | pctAllDivorc > 13.82: 0 (3.48)

| | pctWdiv > 41.03

| | | pctPopDenseHous <= 2.72: 1 (42.14/3.54)

| | | pctPopDenseHous > 2.72

| | | | med Income <= 23999: 0 (10.36/0.17)

| | | | med Income > 23999

| | | | | pctHousOwnerOccup <= 62.98: 1 (15.86/2.67)

| | | | | pctHousOwnerOccup > 62.98: 0 (7.05/1.49)

| pctWdiv > 46.08

| | pctHousOwnerOccup <= 70.96: 0 (64.08/10.66)

| | pctHousOwnerOccup > 70.96: 1 (4.59)

Number of Leaves : 68

Size of the tree : 135

Weight: 2.78

J48 pruned tree

------------------

pct2Par <= 75.53

| persPoverty <= 8701

| | pctWhite <= 65.09

| | | pctPersOwnOccup <= 41.21: 1 (7.17/1.41)

| | | pctPersOwnOccup > 41.21

| | | | pctUnemploy <= 5.49: 1 (4.97/0.69)

| | | | pctUnemploy > 5.49

| | | | | pctWhite <= 48.29

| | | | | | pctWhite <= 44.22: 0 (15.64/0.39)

| | | | | | pctWhite > 44.22: 1 (8.84/0.7)

| | | | | pctWhite > 48.29: 0 (55.62/3.19)

| | pctWhite > 65.09

| | | pctHousWOphone <= 8.64

| | | | pctPopDenseHous <= 1.28

| | | | | pct2Par <= 75.39: 1 (24.26/2.71)

| | | | | pct2Par > 75.39: 0 (2.46)

| | | | pctPopDenseHous > 1.28

| | | | | medFamIncome <= 45435

| | | | | | med Income <= 35681

| | | | | | | pctAllDivorc <= 15.04

| | | | | | | | pctHousWOphone <= 8.38

| | | | | | | | | pctPersOwnOccup <= 73.95

| | | | | | | | | | pctKidsBornNevrMarr <= 6.73

| | | | | | | | | | | pctUnemploy <= 7.57

| | | | | | | | | | | | persPoverty <= 5657

| | | | | | | | | | | | | pctWhite <= 97.91

| | | | | | | | | | | | | | persPoverty <= 4284

| | | | | | | | | | | | | | | pctPopDenseHous <= 1.38: 0 (11.73/0.18)

| | | | | | | | | | | | | | | pctPopDenseHous > 1.38

| | | | | | | | | | | | | | | | pctPersOwnOccup <= 57.61

| | | | | | | | | | | | | | | | | pctPersOwnOccup <= 43.18: 1 (4.48)

| | | | | | | | | | | | | | | | | pctPersOwnOccup > 43.18: 0 (22.98/1.81)

| | | | | | | | | | | | | | | | pctPersOwnOccup > 57.61

| | | | | | | | | | | | | | | | | pctPopDenseHous <= 2.84

| | | | | | | | | | | | | | | | | | persPoverty <= 758: 0 (7.98/1.25)

| | | | | | | | | | | | | | | | | | persPoverty > 758

| | | | | | | | | | | | | | | | | | | persPoverty <= 1661: 1 (23.2)

| | | | | | | | | | | | | | | | | | | persPoverty > 1661

| | | | | | | | | | | | | | | | | | | | pctPersOwnOccup <= 62.84

| | | | | | | | | | | | | | | | | | | | | pctAllDivorc <= 12.75: 1 (2.68)

| | | | | | | | | | | | | | | | | | | | | pctAllDivorc > 12.75: 0 (5.7)

| | | | | | | | | | | | | | | | | | | | pctPersOwnOccup > 62.84

| | | | | | | | | | | | | | | | | | | | | pctWhite <= 95.51: 1 (24.19/0.21)

| | | | | | | | | | | | | | | | | | | | | pctWhite > 95.51: 0 (3.64/1.25)

| | | | | | | | | | | | | | | | | pctPopDenseHous > 2.84

| | | | | | | | | | | | | | | | | | pctUnemploy <= 5.61

| | | | | | | | | | | | | | | | | | | persPoverty <= 2338: 1 (8.03)

| | | | | | | | | | | | | | | | | | | persPoverty > 2338: 0 (4.91)

| | | | | | | | | | | | | | | | | | pctUnemploy > 5.61: 0 (13.23/0.66)

| | | | | | | | | | | | | | persPoverty > 4284: 1 (19.15/0.78)

| | | | | | | | | | | | | pctWhite > 97.91: 0 (13.69/0.21)

| | | | | | | | | | | | persPoverty > 5657: 0 (20.92/1.01)

| | | | | | | | | | | pctUnemploy > 7.57

| | | | | | | | | | | | medFamIncome <= 26238

| | | | | | | | | | | | | medFamIncome <= 25285: 1 (2.02/0.42)

| | | | | | | | | | | | | medFamIncome > 25285: 0 (2.81)

| | | | | | | | | | | | medFamIncome > 26238: 1 (29.39/2.61)

| | | | | | | | | | pctKidsBornNevrMarr > 6.73: 0 (16.61/1.13)

| | | | | | | | | pctPersOwnOccup > 73.95: 0 (16.49/0.56)

| | | | | | | | pctHousWOphone > 8.38: 0 (17.32/0.18)

| | | | | | | pctAllDivorc > 15.04

| | | | | | | | pctWhite <= 70.56: 1 (2.73)

| | | | | | | | pctWhite > 70.56: 0 (25.08)

| | | | | | med Income > 35681

| | | | | | | pctWdiv <= 48.34: 1 (20.24/0.35)

| | | | | | | pctWdiv > 48.34

| | | | | | | | pctAllDivorc <= 11.01: 1 (2.21)

| | | | | | | | pctAllDivorc > 11.01: 0 (2.63)

| | | | | medFamIncome > 45435: 0 (33.21/4.28)

| | | pctHousWOphone > 8.64

| | | | pctHousWOphone <= 9.3: 1 (28.31/0.56)

| | | | pctHousWOphone > 9.3

| | | | | pct2Par <= 70.93

| | | | | | pct2Par <= 67.03

| | | | | | | pctWdiv <= 31.61

| | | | | | | | pctAllDivorc <= 14.08: 1 (8.16/2.1)

| | | | | | | | pctAllDivorc > 14.08: 0 (4.0)

| | | | | | | pctWdiv > 31.61: 1 (16.43/0.63)

| | | | | | pct2Par > 67.03

| | | | | | | pctHousWOphone <= 15.82

| | | | | | | | pctPopDenseHous <= 2.79

| | | | | | | | | pctKidsBornNevrMarr <= 1.82: 0 (2.71)

| | | | | | | | | pctKidsBornNevrMarr > 1.82: 1 (3.24/0.56)

| | | | | | | | pctPopDenseHous > 2.79: 0 (22.85)

| | | | | | | pctHousWOphone > 15.82: 1 (5.32/0.35)

| | | | | pct2Par > 70.93

| | | | | | pct2Par <= 75: 1 (38.01/1.26)

| | | | | | pct2Par > 75: 0 (2.46)

| persPoverty > 8701

| | pctHousWOphone <= 3.52

| | | pctUnemploy <= 5.27: 0 (12.8/0.35)

| | | pctUnemploy > 5.27: 1 (12.51/0.62)

| | pctHousWOphone > 3.52

| | | pctHousOwnerOccup <= 63.52

| | | | persPoverty <= 9796: 0 (24.66)

| | | | persPoverty > 9796

| | | | | persPoverty <= 9930: 1 (5.93/0.35)

| | | | | persPoverty > 9930: 0 (102.99/10.2)

| | | pctHousOwnerOccup > 63.52: 1 (6.42/1.56)

pct2Par > 75.53

| med Income <= 22661: 1 (29.94)

| med Income > 22661

| | pctKidsBornNevrMarr <= 2.49

| | | pctKidsBornNevrMarr <= 1.71

| | | | pctWdiv <= 38.39

| | | | | pctAllDivorc <= 10.85: 1 (2.48)

| | | | | pctAllDivorc > 10.85: 0 (13.22/1.78)

| | | | pctWdiv > 38.39

| | | | | pctKidsBornNevrMarr <= 0.76

| | | | | | pct2Par <= 80.62

| | | | | | | pctUnemploy <= 3.28: 0 (8.99/1.49)

| | | | | | | pctUnemploy > 3.28: 1 (8.39)

| | | | | | pct2Par > 80.62

| | | | | | | pctHousOwnerOccup <= 93.91: 1 (64.08)

| | | | | | | pctHousOwnerOccup > 93.91

| | | | | | | | pctKidsBornNevrMarr <= 0.18: 0 (5.21/0.21)

| | | | | | | | pctKidsBornNevrMarr > 0.18: 1 (3.1)

| | | | | pctKidsBornNevrMarr > 0.76

| | | | | | pctPersOwnOccup <= 91.07

| | | | | | | pctKidsBornNevrMarr <= 0.87: 1 (16.61)

| | | | | | | pctKidsBornNevrMarr > 0.87

| | | | | | | | pctAllDivorc <= 12.44

| | | | | | | | | pctAllDivorc <= 11.83

| | | | | | | | | | pctAllDivorc <= 11.13

| | | | | | | | | | | pctUnemploy <= 2.94: 1 (13.46)

| | | | | | | | | | | pctUnemploy > 2.94

| | | | | | | | | | | | pctWhite <= 77.25: 0 (6.9/0.42)

| | | | | | | | | | | | pctWhite > 77.25

| | | | | | | | | | | | | pctUnemploy <= 3.06: 0 (5.42/0.42)

| | | | | | | | | | | | | pctUnemploy > 3.06: 1 (82.92/24.84)

| | | | | | | | | | pctAllDivorc > 11.13: 1 (18.88)

| | | | | | | | | pctAllDivorc > 11.83: 0 (13.04/1.6)

| | | | | | | | pctAllDivorc > 12.44: 1 (14.25)

| | | | | | pctPersOwnOccup > 91.07: 0 (11.55/1.55)

| | | pctKidsBornNevrMarr > 1.71

| | | | pctKidsBornNevrMarr <= 2.14: 1 (50.0)

| | | | pctKidsBornNevrMarr > 2.14

| | | | | pctHousWOphone <= 1.12

| | | | | | persPoverty <= 750: 1 (5.33)

| | | | | | persPoverty > 750: 0 (10.39/1.46)

| | | | | pctHousWOphone > 1.12: 1 (16.39)

| | pctKidsBornNevrMarr > 2.49

| | | pctAllDivorc <= 8.3: 1 (8.62)

| | | pctAllDivorc > 8.3: 0 (37.85/11.96)

Number of Leaves : 73

Size of the tree : 145

Weight: 2.53

J48 pruned tree

------------------

pctKidsBornNevrMarr <= 0.87

| pctPopDenseHous <= 1.33

| | pctPopDenseHous <= 1.31: 1 (32.45/4.05)

| | pctPopDenseHous > 1.31: 0 (5.51/0.11)

| pctPopDenseHous > 1.33

| | pctAllDivorc <= 13.28: 1 (58.15)

| | pctAllDivorc > 13.28

| | | med Income <= 35374: 1 (3.08)

| | | med Income > 35374: 0 (2.15)

pctKidsBornNevrMarr > 0.87

| pctHousOwnerOccup <= 76.11

| | pctPersOwnOccup <= 76.07

| | | pctPersOwnOccup <= 72.26

| | | | pctHousWOphone <= 0.92

| | | | | med Income <= 39638: 0 (5.71/1.13)

| | | | | med Income > 39638

| | | | | | med Income <= 51524: 1 (60.32/0.8)

| | | | | | med Income > 51524

| | | | | | | pctPersOwnOccup <= 63.67: 0 (6.45/0.68)

| | | | | | | pctPersOwnOccup > 63.67: 1 (4.22)

| | | | pctHousWOphone > 0.92

| | | | | pct2Par <= 79.99

| | | | | | pct2Par <= 76.86

| | | | | | | pctUnemploy <= 3.86

| | | | | | | | pctHousOwnerOccup <= 58.9: 1 (26.57/0.11)

| | | | | | | | pctHousOwnerOccup > 58.9

| | | | | | | | | pctKidsBornNevrMarr <= 2.27: 0 (4.96)

| | | | | | | | | pctKidsBornNevrMarr > 2.27: 1 (2.7)

| | | | | | | pctUnemploy > 3.86

| | | | | | | | pctPopDenseHous <= 29.63

| | | | | | | | | pctPopDenseHous <= 4.57

| | | | | | | | | | pctAllDivorc <= 9.12: 1 (24.63/1.59)

| | | | | | | | | | pctAllDivorc > 9.12

| | | | | | | | | | | pct2Par <= 76.11

| | | | | | | | | | | | pctAllDivorc <= 14.41

| | | | | | | | | | | | | pctAllDivorc <= 14

| | | | | | | | | | | | | | pctKidsBornNevrMarr <= 1.17: 1 (13.52)

| | | | | | | | | | | | | | pctKidsBornNevrMarr > 1.17

| | | | | | | | | | | | | | | persPoverty <= 19860

| | | | | | | | | | | | | | | | pct2Par <= 66.81

| | | | | | | | | | | | | | | | | pctWhite <= 95.19

| | | | | | | | | | | | | | | | | | pctUnemploy <= 5.68: 0 (16.9)

| | | | | | | | | | | | | | | | | | pctUnemploy > 5.68

| | | | | | | | | | | | | | | | | | | persPoverty <= 3196: 1 (12.36/0.1)

| | | | | | | | | | | | | | | | | | | persPoverty > 3196

| | | | | | | | | | | | | | | | | | | | pctWdiv <= 39.06

| | | | | | | | | | | | | | | | | | | | | pct2Par <= 62.35: 0 (7.0)

| | | | | | | | | | | | | | | | | | | | | pct2Par > 62.35: 1 (6.23)

| | | | | | | | | | | | | | | | | | | | pctWdiv > 39.06: 0 (10.48)

| | | | | | | | | | | | | | | | | pctWhite > 95.19: 0 (27.57/0.11)

| | | | | | | | | | | | | | | | pct2Par > 66.81

| | | | | | | | | | | | | | | | | pctKidsBornNevrMarr <= 1.41: 0 (10.25)

| | | | | | | | | | | | | | | | | pctKidsBornNevrMarr > 1.41

| | | | | | | | | | | | | | | | | | pctWhite <= 89.13

| | | | | | | | | | | | | | | | | | | persPoverty <= 9348

| | | | | | | | | | | | | | | | | | | | pctHousOwnerOccup <= 58.98

| | | | | | | | | | | | | | | | | | | | | pctHousOwnerOccup <= 53.99

| | | | | | | | | | | | | | | | | | | | | | pctPersOwnOccup <= 55.27: 0 (2.68)

| | | | | | | | | | | | | | | | | | | | | | pctPersOwnOccup > 55.27: 1 (2.89)

| | | | | | | | | | | | | | | | | | | | | pctHousOwnerOccup > 53.99: 0 (8.98/0.1)

| | | | | | | | | | | | | | | | | | | | pctHousOwnerOccup > 58.98

| | | | | | | | | | | | | | | | | | | | | med Income <= 25053

| | | | | | | | | | | | | | | | | | | | | | persPoverty <= 3406: 0 (8.01/1.45)

| | | | | | | | | | | | | | | | | | | | | | persPoverty > 3406: 1 (3.36)

| | | | | | | | | | | | | | | | | | | | | med Income > 25053: 1 (9.64)

| | | | | | | | | | | | | | | | | | | persPoverty > 9348: 0 (8.95)

| | | | | | | | | | | | | | | | | | pctWhite > 89.13

| | | | | | | | | | | | | | | | | | | pctPopDenseHous <= 4.08

| | | | | | | | | | | | | | | | | | | | pctPersOwnOccup <= 69.74

| | | | | | | | | | | | | | | | | | | | | pctKidsBornNevrMarr <= 2.55

| | | | | | | | | | | | | | | | | | | | | | med Income <= 25797

| | | | | | | | | | | | | | | | | | | | | | | medFamIncome <= 30236: 1 (10.97/0.3)

| | | | | | | | | | | | | | | | | | | | | | | medFamIncome > 30236

| | | | | | | | | | | | | | | | | | | | | | | | pctUnemploy <= 6.51: 0 (5.72/0.02)

| | | | | | | | | | | | | | | | | | | | | | | | pctUnemploy > 6.51: 1 (2.69/0.8)

| | | | | | | | | | | | | | | | | | | | | | med Income > 25797: 1 (17.19/0.19)

| | | | | | | | | | | | | | | | | | | | | pctKidsBornNevrMarr > 2.55: 1 (36.7)

| | | | | | | | | | | | | | | | | | | | pctPersOwnOccup > 69.74: 0 (7.22/0.19)

| | | | | | | | | | | | | | | | | | | pctPopDenseHous > 4.08: 0 (7.83/0.2)

| | | | | | | | | | | | | | | persPoverty > 19860: 1 (21.31/1.36)

| | | | | | | | | | | | | pctAllDivorc > 14: 1 (27.54/2.09)

| | | | | | | | | | | | pctAllDivorc > 14.41

| | | | | | | | | | | | | pctHousWOphone <= 1.61: 1 (2.76)

| | | | | | | | | | | | | pctHousWOphone > 1.61: 0 (52.38/9.87)

| | | | | | | | | | | pct2Par > 76.11

| | | | | | | | | | | | pctWdiv <= 46.03: 1 (2.77)

| | | | | | | | | | | | pctWdiv > 46.03: 0 (26.87)

| | | | | | | | | pctPopDenseHous > 4.57

| | | | | | | | | | persPoverty <= 2470

| | | | | | | | | | | pct2Par <= 68.87

| | | | | | | | | | | | pctHousWOphone <= 13.03: 0 (5.89)

| | | | | | | | | | | | pctHousWOphone > 13.03: 1 (2.09)

| | | | | | | | | | | pct2Par > 68.87

| | | | | | | | | | | | pctWhite <= 80.92: 1 (10.44)

| | | | | | | | | | | | pctWhite > 80.92

| | | | | | | | | | | | | pctPopDenseHous <= 7.74: 1 (2.29/0.11)

| | | | | | | | | | | | | pctPopDenseHous > 7.74: 0 (2.21)

| | | | | | | | | | persPoverty > 2470

| | | | | | | | | | | pctHousOwnerOccup <= 44.07

| | | | | | | | | | | | pctWhite <= 48.29: 0 (7.64)

| | | | | | | | | | | | pctWhite > 48.29

| | | | | | | | | | | | | pctPopDenseHous <= 6.29: 0 (2.48)

| | | | | | | | | | | | | pctPopDenseHous > 6.29: 1 (14.04/2.08)

| | | | | | | | | | | pctHousOwnerOccup > 44.07: 0 (171.66/26.87)

| | | | | | | | pctPopDenseHous > 29.63

| | | | | | | | | med Income <= 23695: 0 (3.23)

| | | | | | | | | med Income > 23695: 1 (26.58/1.33)

| | | | | | pct2Par > 76.86

| | | | | | | pctHousWOphone <= 6.08

| | | | | | | | pctPersOwnOccup <= 71.22: 1 (38.82/1.35)

| | | | | | | | pctPersOwnOccup > 71.22: 0 (3.47/0.79)

| | | | | | | pctHousWOphone > 6.08

| | | | | | | | pctHousOwnerOccup <= 61.01: 0 (4.14/0.11)

| | | | | | | | pctHousOwnerOccup > 61.01: 1 (2.6)

| | | | | pct2Par > 79.99

| | | | | | pctPopDenseHous <= 3.06

| | | | | | | pctPopDenseHous <= 1.08: 0 (2.7)

| | | | | | | pctPopDenseHous > 1.08: 1 (7.43)

| | | | | | pctPopDenseHous > 3.06: 0 (58.37/0.5)

| | | pctPersOwnOccup > 72.26

| | | | pct2Par <= 72.88: 0 (4.94/0.21)

| | | | pct2Par > 72.88

| | | | | pctPersOwnOccup <= 74.92: 1 (52.44)

| | | | | pctPersOwnOccup > 74.92

| | | | | | pctKidsBornNevrMarr <= 2.09: 1 (3.16)

| | | | | | pctKidsBornNevrMarr > 2.09: 0 (2.15)

| | pctPersOwnOccup > 76.07

| | | pctKidsBornNevrMarr <= 1.46

| | | | pct2Par <= 79.49: 0 (69.76/0.82)

| | | | pct2Par > 79.49

| | | | | persPoverty <= 443: 0 (18.47/0.22)

| | | | | persPoverty > 443: 1 (4.77)

| | | pctKidsBornNevrMarr > 1.46

| | | | pct2Par <= 73.71: 0 (4.86)

| | | | pct2Par > 73.71

| | | | | pctKidsBornNevrMarr <= 2.67: 1 (8.7)

| | | | | pctKidsBornNevrMarr > 2.67: 0 (2.7)

| pctHousOwnerOccup > 76.11

| | persPoverty <= 2106

| | | persPoverty <= 838: 1 (25.06/1.35)

| | | persPoverty > 838

| | | | med Income <= 43593: 0 (13.0/3.99)

| | | | med Income > 43593: 1 (9.78/1.35)

| | persPoverty > 2106: 1 (26.53)

Number of Leaves : 73

Size of the tree : 145

Weight: 2.86

J48 pruned tree

------------------

pctWdiv <= 44.32

| pct2Par <= 66.58

| | pctUnemploy <= 5.68: 0 (15.67/0.43)

| | pctUnemploy > 5.68

| | | pctPersOwnOccup <= 54.04: 0 (38.86/8.43)

| | | pctPersOwnOccup > 54.04

| | | | pctWhite <= 94.74

| | | | | medFamIncome <= 21900: 0 (12.32/0.88)

| | | | | medFamIncome > 21900

| | | | | | pctKidsBornNevrMarr <= 7.8

| | | | | | | pct2Par <= 60.64: 0 (10.98)

| | | | | | | pct2Par > 60.64

| | | | | | | | pctPopDenseHous <= 4.43

| | | | | | | | | pctKidsBornNevrMarr <= 6.04

| | | | | | | | | | pct2Par <= 62.56: 1 (32.35)

| | | | | | | | | | pct2Par > 62.56

| | | | | | | | | | | pctAllDivorc <= 14.32: 1 (7.43/0.94)

| | | | | | | | | | | pctAllDivorc > 14.32: 0 (2.98)

| | | | | | | | | pctKidsBornNevrMarr > 6.04: 0 (6.29/1.74)

| | | | | | | | pctPopDenseHous > 4.43: 0 (8.66)

| | | | | | pctKidsBornNevrMarr > 7.8

| | | | | | | pctPopDenseHous <= 6.11: 1 (37.88/0.71)

| | | | | | | pctPopDenseHous > 6.11

| | | | | | | | pctKidsBornNevrMarr <= 12.32: 0 (4.42)

| | | | | | | | pctKidsBornNevrMarr > 12.32: 1 (16.27/0.01)

| | | | pctWhite > 94.74: 0 (13.17/1.04)

| pct2Par > 66.58

| | persPoverty <= 9269

| | | pctHousOwnerOccup <= 49.59

| | | | pctPersOwnOccup <= 49.12: 1 (18.44/2.96)

| | | | pctPersOwnOccup > 49.12

| | | | | pctHousOwnerOccup <= 47.84: 1 (2.22/0.71)

| | | | | pctHousOwnerOccup > 47.84: 0 (15.47)

| | | pctHousOwnerOccup > 49.59: 1 (451.87/61.35)

| | persPoverty > 9269

| | | pctAllDivorc <= 11.8

| | | | pctHousWOphone <= 7.25

| | | | | persPoverty <= 9870: 0 (2.94/0.88)

| | | | | persPoverty > 9870: 1 (31.46/0.2)

| | | | pctHousWOphone > 7.25

| | | | | pctUnemploy <= 12.86: 0 (8.75)

| | | | | pctUnemploy > 12.86: 1 (3.49/1.25)

| | | pctAllDivorc > 11.8

| | | | pct2Par <= 66.7: 1 (4.47)

| | | | pct2Par > 66.7: 0 (35.62/0.86)

pctWdiv > 44.32

| pctWhite <= 98.8

| | pctWhite <= 97.8

| | | pctUnemploy <= 4.74

| | | | pct2Par <= 90.91

| | | | | pctPopDenseHous <= 10.72

| | | | | | persPoverty <= 1411

| | | | | | | persPoverty <= 1144

| | | | | | | | pct2Par <= 74.25: 0 (6.71/1.77)

| | | | | | | | pct2Par > 74.25: 1 (52.5/6.41)

| | | | | | | persPoverty > 1144

| | | | | | | | pct2Par <= 82.9: 0 (32.54/1.93)

| | | | | | | | pct2Par > 82.9: 1 (2.9)

| | | | | | persPoverty > 1411

| | | | | | | pct2Par <= 73.71

| | | | | | | | pctWdiv <= 47.33: 1 (10.69/0.01)

| | | | | | | | pctWdiv > 47.33: 0 (6.33/1.62)

| | | | | | | pct2Par > 73.71: 1 (63.92/1.95)

| | | | | pctPopDenseHous > 10.72: 0 (13.13)

| | | | pct2Par > 90.91: 0 (26.73/1.91)

| | | pctUnemploy > 4.74

| | | | pctAllDivorc <= 6.68

| | | | | pct2Par <= 75.42

| | | | | | medFamIncome <= 31959: 0 (2.77)

| | | | | | medFamIncome > 31959: 1 (2.11)

| | | | | pct2Par > 75.42: 1 (7.76)

| | | | pctAllDivorc > 6.68

| | | | | persPoverty <= 4631

| | | | | | persPoverty <= 3356

| | | | | | | pctKidsBornNevrMarr <= 1.12: 1 (6.27)

| | | | | | | pctKidsBornNevrMarr > 1.12

| | | | | | | | pctWdiv <= 52.03

| | | | | | | | | pct2Par <= 79.72

| | | | | | | | | | persPoverty <= 1500: 0 (7.81/1.02)

| | | | | | | | | | persPoverty > 1500: 1 (16.01/2.89)

| | | | | | | | | pct2Par > 79.72: 0 (21.15/0.2)

| | | | | | | | pctWdiv > 52.03: 0 (31.68/0.58)

| | | | | | persPoverty > 3356: 0 (42.79/0.48)

| | | | | persPoverty > 4631

| | | | | | pctWhite <= 87.15: 0 (5.57)

| | | | | | pctWhite > 87.15

| | | | | | | pctUnemploy <= 5.1: 0 (5.29/1.17)

| | | | | | | pctUnemploy > 5.1: 1 (11.09/0.11)

| | pctWhite > 97.8: 1 (25.99/1.32)

| pctWhite > 98.8: 0 (36.28/2.52)

Number of Leaves : 46

Size of the tree : 91

Weight: 2.33

J48 pruned tree

------------------

pctKidsBornNevrMarr <= 3.39

| pctPersOwnOccup <= 53.38

| | pctWhite <= 83.48

| | | pctPersOwnOccup <= 49.6: 0 (21.02/0.75)

| | | pctPersOwnOccup > 49.6: 1 (8.09)

| | pctWhite > 83.48: 1 (46.58/3.54)

| pctPersOwnOccup > 53.38

| | persPoverty <= 5429

| | | pctHousWOphone <= 15.75

| | | | pctUnemploy <= 9.08

| | | | | pctPopDenseHous <= 2.74

| | | | | | pctAllDivorc <= 12.89

| | | | | | | med Income <= 64338

| | | | | | | | pctWhite <= 84.93: 0 (25.36/1.12)

| | | | | | | | pctWhite > 84.93

| | | | | | | | | pctKidsBornNevrMarr <= 2.5

| | | | | | | | | | pctKidsBornNevrMarr <= 2.18

| | | | | | | | | | | pctHousOwnerOccup <= 59.6: 1 (11.76/0.97)

| | | | | | | | | | | pctHousOwnerOccup > 59.6: 0 (171.74/68.45)

| | | | | | | | | | pctKidsBornNevrMarr > 2.18

| | | | | | | | | | | pctHousOwnerOccup <= 64.39: 0 (2.68/0.83)

| | | | | | | | | | | pctHousOwnerOccup > 64.39: 1 (14.05)

| | | | | | | | | pctKidsBornNevrMarr > 2.5

| | | | | | | | | | med Income <= 37862: 0 (29.3/2.32)

| | | | | | | | | | med Income > 37862: 1 (2.76)

| | | | | | | med Income > 64338: 1 (15.17)

| | | | | | pctAllDivorc > 12.89

| | | | | | | pctAllDivorc <= 14.68: 1 (41.82/2.43)

| | | | | | | pctAllDivorc > 14.68

| | | | | | | | persPoverty <= 1126: 1 (4.03)

| | | | | | | | persPoverty > 1126: 0 (5.38)

| | | | | pctPopDenseHous > 2.74

| | | | | | pctKidsBornNevrMarr <= 0.94: 1 (9.08)

| | | | | | pctKidsBornNevrMarr > 0.94

| | | | | | | pctKidsBornNevrMarr <= 1.44: 0 (67.93/5.9)

| | | | | | | pctKidsBornNevrMarr > 1.44

| | | | | | | | pctHousWOphone <= 1.87: 1 (21.71/2.09)

| | | | | | | | pctHousWOphone > 1.87

| | | | | | | | | pctKidsBornNevrMarr <= 1.61: 1 (4.15)

| | | | | | | | | pctKidsBornNevrMarr > 1.61

| | | | | | | | | | pctWhite <= 73.19: 1 (5.08/0.56)

| | | | | | | | | | pctWhite > 73.19: 0 (68.06/4.93)

| | | | pctUnemploy > 9.08

| | | | | persPoverty <= 2578: 1 (3.45/0.69)

| | | | | persPoverty > 2578: 0 (63.45/0.92)

| | | pctHousWOphone > 15.75: 1 (25.14/0.88)

| | persPoverty > 5429

| | | pctWdiv <= 41.51

| | | | pctPopDenseHous <= 3.01

| | | | | pctHousWOphone <= 8.2: 0 (20.2/0.5)

| | | | | pctHousWOphone > 8.2: 1 (5.56/0.06)

| | | | pctPopDenseHous > 3.01: 0 (83.17/0.23)

| | | pctWdiv > 41.51

| | | | pctAllDivorc <= 13.51: 1 (8.11/2.35)

| | | | pctAllDivorc > 13.51: 0 (4.27)

pctKidsBornNevrMarr > 3.39

| pctAllDivorc <= 7.94: 1 (24.7/0.57)

| pctAllDivorc > 7.94

| | med Income <= 31250

| | | med Income <= 27293

| | | | pctHousWOphone <= 17.38

| | | | | pctKidsBornNevrMarr <= 5.3

| | | | | | pctAllDivorc <= 14.37

| | | | | | | med Income <= 27074

| | | | | | | | pctUnemploy <= 14.33

| | | | | | | | | pctWhite <= 89.3: 0 (68.71/3.05)

| | | | | | | | | pctWhite > 89.3

| | | | | | | | | | pctWhite <= 90.9: 1 (3.83)

| | | | | | | | | | pctWhite > 90.9: 0 (2.6/0.84)

| | | | | | | | pctUnemploy > 14.33: 1 (9.1/1.93)

| | | | | | | med Income > 27074: 1 (5.97)

| | | | | | pctAllDivorc > 14.37

| | | | | | | pctWhite <= 84.65: 0 (3.36)

| | | | | | | pctWhite > 84.65: 1 (15.83/0.2)

| | | | | pctKidsBornNevrMarr > 5.3

| | | | | | pctUnemploy <= 6.95

| | | | | | | pctUnemploy <= 4.01: 1 (2.37)

| | | | | | | pctUnemploy > 4.01: 0 (16.02/0.81)

| | | | | | pctUnemploy > 6.95

| | | | | | | pctHousWOphone <= 11.94: 1 (110.37/20.86)

| | | | | | | pctHousWOphone > 11.94

| | | | | | | | pctWhite <= 75.28: 0 (10.28/0.76)

| | | | | | | | pctWhite > 75.28: 1 (2.45/0.07)

| | | | pctHousWOphone > 17.38: 1 (17.88/0.06)

| | | med Income > 27293

| | | | persPoverty <= 1723: 1 (4.08)

| | | | persPoverty > 1723: 0 (42.6/0.77)

| | med Income > 31250

| | | pctWhite <= 54.68: 0 (10.01/1.25)

| | | pctWhite > 54.68

| | | | pct2Par <= 70.96

| | | | | pctWhite <= 65.61: 0 (5.14/0.03)

| | | | | pctWhite > 65.61: 1 (15.14/2.39)

| | | | pct2Par > 70.96: 1 (60.47/0.53)

Number of Leaves : 48

Size of the tree : 95

Weight: 2.1

Number of performed Iterations: 10

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 468 78.1302 %

Incorrectly Classified Instances 131 21.8698 %

Kappa statistic 0.5003

Mean absolute error 0.21

Root mean squared error 0.4356

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.637 0.146 0.688 0.637 0.661 0.501 0.841 0.739 0

0.854 0.363 0.823 0.854 0.838 0.501 0.841 0.887 1

Weighted Avg. 0.781 0.290 0.778 0.781 0.779 0.501 0.841 0.837

=== Confusion Matrix ===

a b <-- classified as

128 73 | a = 0

58 340 | b = 1

## AdaBoostM1 with NaiveBayes Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

============================================

pctWhite

mean 74.9498 89.1821

std. dev. 18.1747 12.469

weight sum 410 810

precision 0.0922 0.0922

med Income

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctWdiv

mean 36.9869 47.8489

std. dev. 10.6441 12.1074

weight sum 410 810

precision 0.0682 0.0682

medFamIncome

mean 32592.7223 44150.013

std. dev. 9954.894 15163.6477

weight sum 410 810

precision 107.7628 107.7628

persPoverty

mean 19166.2482 2499.0162

std. dev. 84839.4888 4191.4031

weight sum 410 810

precision 1236.5321 1236.5321

pctUnemploy

mean 7.4912 5.2522

std. dev. 3.2298 2.3249

weight sum 410 810

precision 0.0417 0.0417

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pct2Par

mean 66.2155 78.5709

std. dev. 9.4865 7.8828

weight sum 410 810

precision 0.0677 0.0677

pctKidsBornNevrMarr

mean 4.9822 2.0151

std. dev. 3.69 1.9649

weight sum 410 810

precision 0.0476 0.0476

pctPersOwnOccup

mean 58.4915 71.0758

std. dev. 11.2675 13.4708

weight sum 410 810

precision 0.0699 0.0699

pctPopDenseHous

mean 5.7037 3.3992

std. dev. 5.6841 5.5516

weight sum 410 810

precision 0.0943 0.0943

pctHousOwnerOccup

mean 56.2603 67.7035

std. dev. 11.3042 13.5429

weight sum 410 810

precision 0.0688 0.0688

pctHousWOphone

mean 6.7071 2.9217

std. dev. 4.1118 3.4473

weight sum 410 810

precision 0.0345 0.0345

Weight: 1.36

Naive Bayes Classifier

Class

Attribute 0 1

(0.41) (0.59)

============================================

pctWhite

mean 80.9715 83.8008

std. dev. 16.2644 16.4444

weight sum 495.0936 724.9064

precision 0.0922 0.0922

med Income

mean 30509.9799 34095.9758

std. dev. 10438.5713 13892.7029

weight sum 495.0936 724.9064

precision 96.3552 96.3552

pctWdiv

mean 41.68 42.8876

std. dev. 11.179 13.3678

weight sum 495.0936 724.9064

precision 0.0682 0.0682

medFamIncome

mean 36706.4283 39698.4585

std. dev. 11755.8673 14837.2793

weight sum 495.0936 724.9064

precision 107.7628 107.7628

persPoverty

mean 11569.1334 3825.9209

std. dev. 61771.6877 6125.6298

weight sum 495.0936 724.9064

precision 1236.5321 1236.5321

pctUnemploy

mean 6.4012 6.2743

std. dev. 2.8599 2.9023

weight sum 495.0936 724.9064

precision 0.0417 0.0417

pctAllDivorc

mean 12.2375 10.3623

std. dev. 2.68 2.7701

weight sum 495.0936 724.9064

precision 0.0215 0.0215

pct2Par

mean 70.288 75.2208

std. dev. 8.9847 9.1182

weight sum 495.0936 724.9064

precision 0.0677 0.0677

pctKidsBornNevrMarr

mean 3.6321 2.9463

std. dev. 3.1089 2.6639

weight sum 495.0936 724.9064

precision 0.0476 0.0476

pctPersOwnOccup

mean 62.3811 66.7208

std. dev. 12.0875 14.2843

weight sum 495.0936 724.9064

precision 0.0699 0.0699

pctPopDenseHous

mean 4.6148 5.3352

std. dev. 4.6737 8.2168

weight sum 495.0936 724.9064

precision 0.0943 0.0943

pctHousOwnerOccup

mean 59.6825 64.0415

std. dev. 12.1631 13.8849

weight sum 495.0936 724.9064

precision 0.0688 0.0688

pctHousWOphone

mean 4.9201 4.5813

std. dev. 3.855 4.5042

weight sum 495.0936 724.9064

precision 0.0345 0.0345

Weight: 0.56

Naive Bayes Classifier

Class

Attribute 0 1

(0.49) (0.51)

============================================

pctWhite

mean 82.556 82.7715

std. dev. 15.2064 16.8681

weight sum 592.8224 627.1776

precision 0.0922 0.0922

med Income

mean 31446.4121 33259.1304

std. dev. 10712.456 13644.1785

weight sum 592.8224 627.1776

precision 96.3552 96.3552

pctWdiv

mean 42.7507 42.1079

std. dev. 11.1646 13.1711

weight sum 592.8224 627.1776

precision 0.0682 0.0682

medFamIncome

mean 37732.6471 38880.2256

std. dev. 12079.7636 14510.6368

weight sum 592.8224 627.1776

precision 107.7628 107.7628

persPoverty

mean 9219.5809 4439.2708

std. dev. 52686.2102 7257.6316

weight sum 592.8224 627.1776

precision 1236.5321 1236.5321

pctUnemploy

mean 6.1865 6.4204

std. dev. 2.7716 2.8972

weight sum 592.8224 627.1776

precision 0.0417 0.0417

pctAllDivorc

mean 11.9278 10.6136

std. dev. 2.6405 2.8409

weight sum 592.8224 627.1776

precision 0.0215 0.0215

pct2Par

mean 71.643 74.1314

std. dev. 8.2778 9.6474

weight sum 592.8224 627.1776

precision 0.0677 0.0677

pctKidsBornNevrMarr

mean 3.2149 3.2428

std. dev. 2.7254 2.8881

weight sum 592.8224 627.1776

precision 0.0476 0.0476

pctPersOwnOccup

mean 63.5394 65.7108

std. dev. 12.1447 14.2501

weight sum 592.8224 627.1776

precision 0.0699 0.0699

pctPopDenseHous

mean 4.5501 5.2647

std. dev. 4.8314 7.9087

weight sum 592.8224 627.1776

precision 0.0943 0.0943

pctHousOwnerOccup

mean 60.7762 63.0659

std. dev. 12.2523 13.9006

weight sum 592.8224 627.1776

precision 0.0688 0.0688

pctHousWOphone

mean 4.5261 4.8383

std. dev. 3.7703 4.5229

weight sum 592.8224 627.1776

precision 0.0345 0.0345

Weight: 0.21

Naive Bayes Classifier

Class

Attribute 0 1

(0.52) (0.48)

============================================

pctWhite

mean 82.5433 82.7986

std. dev. 15.2828 16.6864

weight sum 631.7514 588.2486

precision 0.0922 0.0922

med Income

mean 31607.2794 33093.5546

std. dev. 10873.2482 13492.0697

weight sum 631.7514 588.2486

precision 96.3552 96.3552

pctWdiv

mean 42.8103 42.02

std. dev. 11.2607 13.0099

weight sum 631.7514 588.2486

precision 0.0682 0.0682

medFamIncome

mean 37898.0206 38721.3375

std. dev. 12270.0668 14338.7535

weight sum 631.7514 588.2486

precision 107.7628 107.7628

persPoverty

mean 8864.5654 4706.5375

std. dev. 53333.8609 7758.9769

weight sum 631.7514 588.2486

precision 1236.5321 1236.5321

pctUnemploy

mean 6.1773 6.4185

std. dev. 2.7986 2.8666

weight sum 631.7514 588.2486

precision 0.0417 0.0417

pctAllDivorc

mean 11.8415 10.6997

std. dev. 2.6454 2.8532

weight sum 631.7514 588.2486

precision 0.0215 0.0215

pct2Par

mean 71.8235 73.961

std. dev. 8.306 9.577

weight sum 631.7514 588.2486

precision 0.0677 0.0677

pctKidsBornNevrMarr

mean 3.1921 3.2591

std. dev. 2.717 2.8566

weight sum 631.7514 588.2486

precision 0.0476 0.0476

pctPersOwnOccup

mean 63.7784 65.4848

std. dev. 12.2822 14.1205

weight sum 631.7514 588.2486

precision 0.0699 0.0699

pctPopDenseHous

mean 4.5678 5.226

std. dev. 4.8977 7.8123

weight sum 631.7514 588.2486

precision 0.0943 0.0943

pctHousOwnerOccup

mean 61.023 62.827

std. dev. 12.3834 13.7905

weight sum 631.7514 588.2486

precision 0.0688 0.0688

pctHousWOphone

mean 4.513 4.8543

std. dev. 3.82 4.4747

weight sum 631.7514 588.2486

precision 0.0345 0.0345

Weight: 0.06

Number of performed Iterations: 4

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 492 82.1369 %

Incorrectly Classified Instances 107 17.8631 %

Kappa statistic 0.6038

Mean absolute error 0.2473

Root mean squared error 0.3616

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.756 0.146 0.724 0.756 0.740 0.604 0.841 0.724 0

0.854 0.244 0.874 0.854 0.864 0.604 0.841 0.870 1

Weighted Avg. 0.821 0.211 0.824 0.821 0.822 0.604 0.841 0.821

=== Confusion Matrix ===

a b <-- classified as

152 49 | a = 0

58 340 | b = 1

## AdaBoostM1 with IBk(KNN) Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 1.54

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.64

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.01

Number of performed Iterations: 3

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 494 82.4708 %

Incorrectly Classified Instances 105 17.5292 %

Kappa statistic 0.6045

Mean absolute error 0.2731

Root mean squared error 0.3838

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.126 0.745 0.726 0.736 0.605 0.814 0.673 0

0.874 0.274 0.864 0.874 0.869 0.605 0.814 0.855 1

Weighted Avg. 0.825 0.224 0.824 0.825 0.824 0.605 0.814 0.794

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

50 348 | b = 1

## Multilayer Perceptron Model

=== Classifier model ===

Sigmoid Node 0

Inputs Weights

Threshold 3.7294637967230986

Node 2 -4.144566300195445

Node 3 -2.083872712396218

Node 4 -2.5973668497493345

Node 5 2.0740697701284136

Node 6 -2.1705091037773507

Node 7 -6.276462980068537

Node 8 3.5675145277984193

Sigmoid Node 1

Inputs Weights

Threshold -3.72946979948305

Node 2 4.144585551791214

Node 3 2.083875923003097

Node 4 2.597371755078269

Node 5 -2.074078078962237

Node 6 2.170515007049862

Node 7 6.276480478250888

Node 8 -3.567527229362083

Sigmoid Node 2

Inputs Weights

Threshold -5.322674640060776

Attrib pctWhite 8.036576615728192

Attrib med Income 3.760787869547344

Attrib pctWdiv 0.7585297814363966

Attrib medFamIncome -1.4081257081919094

Attrib persPoverty 2.2474223156343465

Attrib pctUnemploy 7.525347917028511

Attrib pctAllDivorc -11.72789383494178

Attrib pct2Par 4.904306991055066

Attrib pctKidsBornNevrMarr -4.5353891266228405

Attrib pctPersOwnOccup -1.8596876542663878

Attrib pctPopDenseHous 1.8870475046009696

Attrib pctHousOwnerOccup -0.8776112968583231

Attrib pctHousWOphone -0.7696983482091461

Sigmoid Node 3

Inputs Weights

Threshold -10.742825894765714

Attrib pctWhite 8.215801208997764

Attrib med Income 3.3294587321967075

Attrib pctWdiv -2.1237725699393097

Attrib medFamIncome -11.126648902670874

Attrib persPoverty -0.7569900836851751

Attrib pctUnemploy 4.590877939059764

Attrib pctAllDivorc -11.571396210762925

Attrib pct2Par 14.312017806342968

Attrib pctKidsBornNevrMarr 4.811493209051324

Attrib pctPersOwnOccup -8.033063388192266

Attrib pctPopDenseHous -7.905894034550013

Attrib pctHousOwnerOccup -0.40107115701084706

Attrib pctHousWOphone 2.5284882240573285

Sigmoid Node 4

Inputs Weights

Threshold -5.288427946224416

Attrib pctWhite 10.305746966849732

Attrib med Income 16.558266940166288

Attrib pctWdiv -10.716574884570395

Attrib medFamIncome 3.187671148570564

Attrib persPoverty -3.9106646097356736

Attrib pctUnemploy -6.892804269200659

Attrib pctAllDivorc -0.28552273292914554

Attrib pct2Par 10.299274865975864

Attrib pctKidsBornNevrMarr 0.48440753552400906

Attrib pctPersOwnOccup -5.195694249306258

Attrib pctPopDenseHous 4.428779680128396

Attrib pctHousOwnerOccup 2.458861356167026

Attrib pctHousWOphone -2.8213854556185893

Sigmoid Node 5

Inputs Weights

Threshold -0.6286850260307879

Attrib pctWhite 1.3449094005898967

Attrib med Income -0.1723158801640113

Attrib pctWdiv 0.21388235589900115

Attrib medFamIncome 1.6140042995270762

Attrib persPoverty 1.0391804320985807

Attrib pctUnemploy -1.8638227060460952

Attrib pctAllDivorc -6.2028755914943465

Attrib pct2Par 0.8850461022480488

Attrib pctKidsBornNevrMarr 2.12098720826427

Attrib pctPersOwnOccup 4.29140911488883

Attrib pctPopDenseHous 0.5313768614310943

Attrib pctHousOwnerOccup 2.8751692045873667

Attrib pctHousWOphone -0.06506449405542572

Sigmoid Node 6

Inputs Weights

Threshold -4.461529387046818

Attrib pctWhite 1.963584994698942

Attrib med Income 7.001050294623177

Attrib pctWdiv -2.613098462257622

Attrib medFamIncome -1.8194483300481163

Attrib persPoverty -5.243038782634583

Attrib pctUnemploy 4.489119832434182

Attrib pctAllDivorc -12.374005564452037

Attrib pct2Par -4.9284493263855005

Attrib pctKidsBornNevrMarr 2.8139027064799804

Attrib pctPersOwnOccup 2.706543110880146

Attrib pctPopDenseHous -13.908477143633082

Attrib pctHousOwnerOccup 15.232391653916897

Attrib pctHousWOphone 3.95219171466031

Sigmoid Node 7

Inputs Weights

Threshold -5.587710297974249

Attrib pctWhite -5.883650318385829

Attrib med Income 8.095009963625758

Attrib pctWdiv 0.8556655136290691

Attrib medFamIncome -2.712318135359338

Attrib persPoverty -3.319219906980688

Attrib pctUnemploy -6.132267831821742

Attrib pctAllDivorc 5.851220044730899

Attrib pct2Par 6.8637517124063265

Attrib pctKidsBornNevrMarr 6.035146944223143

Attrib pctPersOwnOccup -2.6754809257024887

Attrib pctPopDenseHous 9.195962013932832

Attrib pctHousOwnerOccup 5.57974219457737

Attrib pctHousWOphone -8.987226837529862

Sigmoid Node 8

Inputs Weights

Threshold 1.8305694259367833

Attrib pctWhite 9.314364961710865

Attrib med Income 0.5273339889941007

Attrib pctWdiv -6.092471486940733

Attrib medFamIncome 0.9382538389126748

Attrib persPoverty -0.3023152382077092

Attrib pctUnemploy 0.9757857040192197

Attrib pctAllDivorc 0.27428210737918846

Attrib pct2Par -2.43600751200471

Attrib pctKidsBornNevrMarr -0.2075788633080545

Attrib pctPersOwnOccup 4.376517154718029

Attrib pctPopDenseHous 11.267293013832408

Attrib pctHousOwnerOccup -1.0708838236797726

Attrib pctHousWOphone -1.1918308093482166

Class 0

Input

Node 0

Class 1

Input

Node 1

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-3,5-12,14-15,17-19,21-27,29-32,34-41,43,45-50,52-67,70-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 14

=== Summary ===

Correctly Classified Instances 453 75.626 %

Incorrectly Classified Instances 146 24.374 %

Kappa statistic 0.4979

Mean absolute error 0.2682

Root mean squared error 0.3996

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.816 0.274 0.601 0.816 0.692 0.514 0.871 0.775 0

0.726 0.184 0.887 0.726 0.798 0.514 0.871 0.927 1

Weighted Avg. 0.756 0.214 0.791 0.756 0.763 0.514 0.871 0.876

=== Confusion Matrix ===

a b <-- classified as

164 37 | a = 0

109 289 | b = 1

# Test Results: CorrelationAttributeEval

## Description

The CorrelationAttributeEval evaluates attributes and ranks them based upon the strength of the correlation between the attribute and the class.

## Attributes Selected

pctBlack

pctWhite

med Income

pctWdiv

pctPubAsst

pctPoverty

pctUnemploy

pctAllDivorc

pctKids2Par

pctKidsBornNevrMarr

pctPersOwnOccup

pctSmallHousUnits

pctHousOwnerOccup

pctHousWOphone

Class

The attributes selected were all ranked highly by the selection method, although I did make some executive decisions to exclude some of the other highly ranked attributes that were different representations of the same indicator (e.g. pctPoverty and persPoverty) and attributes that are highly correlated (e.g. pctAllDivorc, pctFemDivorc, pctMaleDivorc, or pct2Par, pctKids-4w2Par,…and so on).

## J48 Model

=== Classifier model ===

J48 pruned tree

------------------

pctKids2Par <= 71.82

| pctKids2Par <= 59.16: 0 (171.0/27.0)

| pctKids2Par > 59.16

| | pctAllDivorc <= 12.77: 1 (220.0/84.0)

| | pctAllDivorc > 12.77

| | | pctSmallHousUnits <= 48.46

| | | | pctAllDivorc <= 14.78

| | | | | pctAllDivorc <= 12.97: 0 (6.0/1.0)

| | | | | pctAllDivorc > 12.97

| | | | | | pctKids2Par <= 67.94

| | | | | | | pctKids2Par <= 66.66

| | | | | | | | pctUnemploy <= 7.83

| | | | | | | | | pctWhite <= 83.15: 0 (4.0)

| | | | | | | | | pctWhite > 83.15: 1 (3.0)

| | | | | | | | pctUnemploy > 7.83: 1 (10.0)

| | | | | | | pctKids2Par > 66.66: 0 (4.0)

| | | | | | pctKids2Par > 67.94: 1 (10.0)

| | | | pctAllDivorc > 14.78: 0 (4.0)

| | | pctSmallHousUnits > 48.46

| | | | pctHousWOphone <= 3.98

| | | | | pctWdiv <= 49.37

| | | | | | pctWhite <= 92.31

| | | | | | | pctPersOwnOccup <= 52.36

| | | | | | | | pctPubAsst <= 5.02: 0 (2.0)

| | | | | | | | pctPubAsst > 5.02: 1 (11.0/1.0)

| | | | | | | pctPersOwnOccup > 52.36: 0 (9.0/1.0)

| | | | | | pctWhite > 92.31: 1 (8.0)

| | | | | pctWdiv > 49.37: 0 (7.0)

| | | | pctHousWOphone > 3.98: 0 (101.0/22.0)

pctKids2Par > 71.82

| pctBlack <= 7.11

| | pctAllDivorc <= 11.88

| | | pctPoverty <= 9.5: 1 (455.0/18.0)

| | | pctPoverty > 9.5

| | | | pctWdiv <= 47.6: 1 (42.0/1.0)

| | | | pctWdiv > 47.6

| | | | | pctPubAsst <= 5.34: 1 (11.0)

| | | | | pctPubAsst > 5.34

| | | | | | pctPubAsst <= 6.43: 0 (7.0)

| | | | | | pctPubAsst > 6.43

| | | | | | | pctWhite <= 95.53: 1 (5.0)

| | | | | | | pctWhite > 95.53

| | | | | | | | pctKidsBornNevrMarr <= 1.63: 1 (3.0)

| | | | | | | | pctKidsBornNevrMarr > 1.63: 0 (4.0)

| | pctAllDivorc > 11.88

| | | pctPoverty <= 13.98

| | | | pctSmallHousUnits <= 42.4: 1 (16.0)

| | | | pctSmallHousUnits > 42.4

| | | | | pctAllDivorc <= 12.43

| | | | | | pctBlack <= 0.73: 1 (2.0)

| | | | | | pctBlack > 0.73: 0 (8.0/1.0)

| | | | | pctAllDivorc > 12.43

| | | | | | pctKidsBornNevrMarr <= 0.77: 0 (2.0)

| | | | | | pctKidsBornNevrMarr > 0.77

| | | | | | | pctBlack <= 4.62: 1 (31.0/3.0)

| | | | | | | pctBlack > 4.62: 0 (2.0)

| | | pctPoverty > 13.98: 0 (6.0/1.0)

| pctBlack > 7.11

| | pctWdiv <= 60.64

| | | pctUnemploy <= 3.54: 1 (13.0)

| | | pctUnemploy > 3.54

| | | | pctUnemploy <= 3.76: 0 (4.0)

| | | | pctUnemploy > 3.76

| | | | | pctSmallHousUnits <= 58.01

| | | | | | pctAllDivorc <= 9.56: 1 (12.0)

| | | | | | pctAllDivorc > 9.56

| | | | | | | pctPersOwnOccup <= 65.6: 0 (6.0/1.0)

| | | | | | | pctPersOwnOccup > 65.6

| | | | | | | | pctHousWOphone <= 1.21: 0 (2.0)

| | | | | | | | pctHousWOphone > 1.21: 1 (12.0/1.0)

| | | | | pctSmallHousUnits > 58.01: 0 (3.0)

| | pctWdiv > 60.64: 0 (4.0)

Number of Leaves : 37

Size of the tree : 73

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 467 77.9633 %

Incorrectly Classified Instances 132 22.0367 %

Kappa statistic 0.4921

Mean absolute error 0.2739

Root mean squared error 0.4179

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.617 0.138 0.693 0.617 0.653 0.494 0.786 0.600 0

0.862 0.383 0.817 0.862 0.839 0.494 0.786 0.850 1

Weighted Avg. 0.780 0.301 0.775 0.780 0.776 0.494 0.786 0.766

=== Confusion Matrix ===

a b <-- classified as

124 77 | a = 0

55 343 | b = 1

## NaiveBayes Model

=== Classifier model ===

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

============================================

pctBlack

mean 16.6775 4.7559

std. dev. 18.461 8.4149

weight sum 410 810

precision 0.1229 0.1229

pctWhite

mean 74.9498 89.1821

std. dev. 18.1747 12.469

weight sum 410 810

precision 0.0922 0.0922

med Income

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctWdiv

mean 36.9869 47.8489

std. dev. 10.6441 12.1074

weight sum 410 810

precision 0.0682 0.0682

pctPubAsst

mean 9.3876 5.3268

std. dev. 5.2609 3.7398

weight sum 410 810

precision 0.056 0.056

pctPoverty

mean 17.0078 8.7312

std. dev. 8.1777 7.4395

weight sum 410 810

precision 0.0603 0.0603

pctUnemploy

mean 7.4912 5.2522

std. dev. 3.2298 2.3249

weight sum 410 810

precision 0.0417 0.0417

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pctKids2Par

mean 62.1493 76.4552

std. dev. 10.9557 8.9928

weight sum 410 810

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 4.9822 2.0151

std. dev. 3.69 1.9649

weight sum 410 810

precision 0.0476 0.0476

pctPersOwnOccup

mean 58.4915 71.0758

std. dev. 11.2675 13.4708

weight sum 410 810

precision 0.0699 0.0699

pctSmallHousUnits

mean 52.7817 41.5841

std. dev. 10.8605 13.4828

weight sum 410 810

precision 0.0829 0.0829

pctHousOwnerOccup

mean 56.2603 67.7035

std. dev. 11.3042 13.5429

weight sum 410 810

precision 0.0688 0.0688

pctHousWOphone

mean 6.7071 2.9217

std. dev. 4.1118 3.4473

weight sum 410 810

precision 0.0345 0.0345

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 484 80.8013 %

Incorrectly Classified Instances 115 19.1987 %

Kappa statistic 0.5843

Mean absolute error 0.1986

Root mean squared error 0.4123

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.786 0.181 0.687 0.786 0.733 0.588 0.872 0.759 0

0.819 0.214 0.883 0.819 0.850 0.588 0.872 0.926 1

Weighted Avg. 0.808 0.203 0.818 0.808 0.811 0.588 0.872 0.870

=== Confusion Matrix ===

a b <-- classified as

158 43 | a = 0

72 326 | b = 1

## IBk (KNN) Model

=== Classifier model ===

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 489 81.6361 %

Incorrectly Classified Instances 110 18.3639 %

Kappa statistic 0.5912

Mean absolute error 0.2551

Root mean squared error 0.3612

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.741 0.146 0.720 0.741 0.730 0.591 0.873 0.760 0

0.854 0.259 0.867 0.854 0.861 0.591 0.873 0.910 1

Weighted Avg. 0.816 0.221 0.818 0.816 0.817 0.591 0.873 0.860

=== Confusion Matrix ===

a b <-- classified as

149 52 | a = 0

58 340 | b = 1

## Bagging with J48 Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.trees.J48 -C 0.25 -M 2

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 490 81.803 %

Incorrectly Classified Instances 109 18.197 %

Kappa statistic 0.5832

Mean absolute error 0.2531

Root mean squared error 0.363

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.687 0.116 0.750 0.687 0.717 0.584 0.875 0.783 0

0.884 0.313 0.848 0.884 0.866 0.584 0.875 0.924 1

Weighted Avg. 0.818 0.247 0.815 0.818 0.816 0.584 0.875 0.877

=== Confusion Matrix ===

a b <-- classified as

138 63 | a = 0

46 352 | b = 1

## Bagging with NaiveBayes Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.bayes.NaiveBayes

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 485 80.9683 %

Incorrectly Classified Instances 114 19.0317 %

Kappa statistic 0.5894

Mean absolute error 0.1997

Root mean squared error 0.4111

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.796 0.183 0.687 0.796 0.737 0.593 0.873 0.765 0

0.817 0.204 0.888 0.817 0.851 0.593 0.873 0.926 1

Weighted Avg. 0.810 0.197 0.820 0.810 0.813 0.593 0.873 0.872

=== Confusion Matrix ===

a b <-- classified as

160 41 | a = 0

73 325 | b = 1

## Bagging with IBk (KNN) Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.lazy.IBk -K 10 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last\""

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 492 82.1369 %

Incorrectly Classified Instances 107 17.8631 %

Kappa statistic 0.5908

Mean absolute error 0.2545

Root mean squared error 0.3597

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.692 0.113 0.755 0.692 0.722 0.592 0.877 0.781 0

0.887 0.308 0.851 0.887 0.868 0.592 0.877 0.926 1

Weighted Avg. 0.821 0.243 0.819 0.821 0.819 0.592 0.877 0.878

=== Confusion Matrix ===

a b <-- classified as

139 62 | a = 0

45 353 | b = 1

## AdaBoostM1 with J48 Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

J48 pruned tree

------------------

pctKids2Par <= 71.82

| pctKids2Par <= 59.16: 0 (171.0/27.0)

| pctKids2Par > 59.16

| | pctAllDivorc <= 12.77: 1 (220.0/84.0)

| | pctAllDivorc > 12.77

| | | pctSmallHousUnits <= 48.46

| | | | pctAllDivorc <= 14.78

| | | | | pctAllDivorc <= 12.97: 0 (6.0/1.0)

| | | | | pctAllDivorc > 12.97

| | | | | | pctKids2Par <= 67.94

| | | | | | | pctKids2Par <= 66.66

| | | | | | | | pctUnemploy <= 7.83

| | | | | | | | | pctWhite <= 83.15: 0 (4.0)

| | | | | | | | | pctWhite > 83.15: 1 (3.0)

| | | | | | | | pctUnemploy > 7.83: 1 (10.0)

| | | | | | | pctKids2Par > 66.66: 0 (4.0)

| | | | | | pctKids2Par > 67.94: 1 (10.0)

| | | | pctAllDivorc > 14.78: 0 (4.0)

| | | pctSmallHousUnits > 48.46

| | | | pctHousWOphone <= 3.98

| | | | | pctWdiv <= 49.37

| | | | | | pctWhite <= 92.31

| | | | | | | pctPersOwnOccup <= 52.36

| | | | | | | | pctPubAsst <= 5.02: 0 (2.0)

| | | | | | | | pctPubAsst > 5.02: 1 (11.0/1.0)

| | | | | | | pctPersOwnOccup > 52.36: 0 (9.0/1.0)

| | | | | | pctWhite > 92.31: 1 (8.0)

| | | | | pctWdiv > 49.37: 0 (7.0)

| | | | pctHousWOphone > 3.98: 0 (101.0/22.0)

pctKids2Par > 71.82

| pctBlack <= 7.11

| | pctAllDivorc <= 11.88

| | | pctPoverty <= 9.5: 1 (455.0/18.0)

| | | pctPoverty > 9.5

| | | | pctWdiv <= 47.6: 1 (42.0/1.0)

| | | | pctWdiv > 47.6

| | | | | pctPubAsst <= 5.34: 1 (11.0)

| | | | | pctPubAsst > 5.34

| | | | | | pctPubAsst <= 6.43: 0 (7.0)

| | | | | | pctPubAsst > 6.43

| | | | | | | pctWhite <= 95.53: 1 (5.0)

| | | | | | | pctWhite > 95.53

| | | | | | | | pctKidsBornNevrMarr <= 1.63: 1 (3.0)

| | | | | | | | pctKidsBornNevrMarr > 1.63: 0 (4.0)

| | pctAllDivorc > 11.88

| | | pctPoverty <= 13.98

| | | | pctSmallHousUnits <= 42.4: 1 (16.0)

| | | | pctSmallHousUnits > 42.4

| | | | | pctAllDivorc <= 12.43

| | | | | | pctBlack <= 0.73: 1 (2.0)

| | | | | | pctBlack > 0.73: 0 (8.0/1.0)

| | | | | pctAllDivorc > 12.43

| | | | | | pctKidsBornNevrMarr <= 0.77: 0 (2.0)

| | | | | | pctKidsBornNevrMarr > 0.77

| | | | | | | pctBlack <= 4.62: 1 (31.0/3.0)

| | | | | | | pctBlack > 4.62: 0 (2.0)

| | | pctPoverty > 13.98: 0 (6.0/1.0)

| pctBlack > 7.11

| | pctWdiv <= 60.64

| | | pctUnemploy <= 3.54: 1 (13.0)

| | | pctUnemploy > 3.54

| | | | pctUnemploy <= 3.76: 0 (4.0)

| | | | pctUnemploy > 3.76

| | | | | pctSmallHousUnits <= 58.01

| | | | | | pctAllDivorc <= 9.56: 1 (12.0)

| | | | | | pctAllDivorc > 9.56

| | | | | | | pctPersOwnOccup <= 65.6: 0 (6.0/1.0)

| | | | | | | pctPersOwnOccup > 65.6

| | | | | | | | pctHousWOphone <= 1.21: 0 (2.0)

| | | | | | | | pctHousWOphone > 1.21: 1 (12.0/1.0)

| | | | | pctSmallHousUnits > 58.01: 0 (3.0)

| | pctWdiv > 60.64: 0 (4.0)

Number of Leaves : 37

Size of the tree : 73

Weight: 1.88

J48 pruned tree

------------------

pctKids2Par <= 71.82

| pctAllDivorc <= 12.92

| | pctKids2Par <= 59.46

| | | pctWhite <= 53.97: 0 (6.34)

| | | pctWhite > 53.97

| | | | pctPoverty <= 16.7: 0 (4.61)

| | | | pctPoverty > 16.7

| | | | | pctKidsBornNevrMarr <= 8.48

| | | | | | pctHousOwnerOccup <= 60.05: 1 (36.77/2.31)

| | | | | | pctHousOwnerOccup > 60.05: 0 (2.31/0.58)

| | | | | pctKidsBornNevrMarr > 8.48

| | | | | | pctKidsBornNevrMarr <= 10.5: 0 (4.61)

| | | | | | pctKidsBornNevrMarr > 10.5: 1 (4.92/0.58)

| | pctKids2Par > 59.46

| | | pctPoverty <= 14.66

| | | | pctSmallHousUnits <= 53.05

| | | | | pctAllDivorc <= 12.18: 0 (112.01/17.87)

| | | | | pctAllDivorc > 12.18

| | | | | | pctPersOwnOccup <= 59.01: 0 (8.11/0.58)

| | | | | | pctPersOwnOccup > 59.01

| | | | | | | pctAllDivorc <= 12.74: 1 (9.22)

| | | | | | | pctAllDivorc > 12.74: 0 (2.31/0.58)

| | | | pctSmallHousUnits > 53.05

| | | | | pctKids2Par <= 67.02

| | | | | | pctPoverty <= 13.95: 0 (19.67/4.04)

| | | | | | pctPoverty > 13.95: 1 (2.88)

| | | | | pctKids2Par > 67.02: 1 (11.53)

| | | pctPoverty > 14.66

| | | | pctKidsBornNevrMarr <= 2.25

| | | | | pctSmallHousUnits <= 53.3: 1 (9.22/1.15)

| | | | | pctSmallHousUnits > 53.3: 0 (25.48/2.88)

| | | | pctKidsBornNevrMarr > 2.25: 0 (199.46/20.18)

| pctAllDivorc > 12.92

| | pctAllDivorc <= 14.98: 1 (228.65/76.68)

| | pctAllDivorc > 14.98

| | | pctPubAsst <= 9.33

| | | | medIncome <= 21352: 1 (11.3)

| | | | medIncome > 21352

| | | | | pctSmallHousUnits <= 55.57

| | | | | | pctAllDivorc <= 15.65: 0 (4.61)

| | | | | | pctAllDivorc > 15.65: 1 (11.87/0.58)

| | | | | pctSmallHousUnits > 55.57: 0 (20.49/2.31)

| | | pctPubAsst > 9.33: 0 (25.95)

pctKids2Par > 71.82

| pctPoverty <= 2.15: 1 (39.21)

| pctPoverty > 2.15

| | pctPersOwnOccup <= 91.07

| | | pctAllDivorc <= 10.73

| | | | pctKidsBornNevrMarr <= 1.01

| | | | | pctWhite <= 99: 1 (94.56)

| | | | | pctWhite > 99

| | | | | | pctWhite <= 99.04: 0 (3.77)

| | | | | | pctWhite > 99.04: 1 (4.04)

| | | | pctKidsBornNevrMarr > 1.01

| | | | | pctKids2Par <= 86.66

| | | | | | pctKidsBornNevrMarr <= 2.49

| | | | | | | pctAllDivorc <= 7.75

| | | | | | | | pctAllDivorc <= 7.66: 1 (21.91/3.46)

| | | | | | | | pctAllDivorc > 7.66: 0 (9.26/1.73)

| | | | | | | pctAllDivorc > 7.75: 1 (87.94/3.46)

| | | | | | pctKidsBornNevrMarr > 2.49

| | | | | | | pctKids2Par <= 76.28: 1 (12.11/2.31)

| | | | | | | pctKids2Par > 76.28

| | | | | | | | pctPubAsst <= 4.21: 1 (3.46/0.58)

| | | | | | | | pctPubAsst > 4.21: 0 (8.68)

| | | | | pctKids2Par > 86.66

| | | | | | pctBlack <= 0.7: 0 (7.53)

| | | | | | pctBlack > 0.7: 1 (3.46)

| | | pctAllDivorc > 10.73

| | | | pctBlack <= 0.54: 1 (19.33/1.15)

| | | | pctBlack > 0.54

| | | | | pctBlack <= 0.82

| | | | | | pctKidsBornNevrMarr <= 1.56: 0 (21.13/1.73)

| | | | | | pctKidsBornNevrMarr > 1.56: 1 (3.46/0.58)

| | | | | pctBlack > 0.82

| | | | | | pctKids2Par <= 79.31

| | | | | | | pctPoverty <= 3.65: 0 (8.68/0.58)

| | | | | | | pctPoverty > 3.65: 1 (64.65/23.4)

| | | | | | pctKids2Par > 79.31: 1 (9.22)

| | pctPersOwnOccup > 91.07

| | | pctUnemploy <= 4.52

| | | | pctKids2Par <= 89.65

| | | | | pctSmallHousUnits <= 13.88

| | | | | | pctPoverty <= 2.33: 0 (3.77)

| | | | | | pctPoverty > 2.33: 1 (2.31)

| | | | | pctSmallHousUnits > 13.88: 0 (18.83)

| | | | pctKids2Par > 89.65: 1 (4.61)

| | | pctUnemploy > 4.52: 1 (5.77)

Number of Leaves : 45

Size of the tree : 89

Weight: 1.83

J48 pruned tree

------------------

pctKidsBornNevrMarr <= 0.87

| pctAllDivorc <= 4.6

| | pctAllDivorc <= 4.28: 1 (2.34)

| | pctAllDivorc > 4.28: 0 (7.56/1.0)

| pctAllDivorc > 4.6

| | pctWdiv <= 57.16

| | | pctUnemploy <= 4.44

| | | | pctSmallHousUnits <= 41.46

| | | | | pctPersOwnOccup <= 90.71: 1 (11.05)

| | | | | pctPersOwnOccup > 90.71: 0 (2.19)

| | | | pctSmallHousUnits > 41.46

| | | | | pctHousWOphone <= 3.02: 0 (9.87/1.0)

| | | | | pctHousWOphone > 3.02: 1 (2.75)

| | | pctUnemploy > 4.44: 1 (24.12)

| | pctWdiv > 57.16: 1 (45.66)

pctKidsBornNevrMarr > 0.87

| pctAllDivorc <= 10.87: 1 (323.32/125.45)

| pctAllDivorc > 10.87

| | pctWhite <= 89.38

| | | pctSmallHousUnits <= 41.03

| | | | pctPubAsst <= 6.93

| | | | | medIncome <= 38124: 0 (14.46/1.34)

| | | | | medIncome > 38124: 1 (2.68)

| | | | pctPubAsst > 6.93

| | | | | pctKids2Par <= 46.99: 0 (4.16)

| | | | | pctKids2Par > 46.99: 1 (16.65/0.33)

| | | pctSmallHousUnits > 41.03

| | | | pctWdiv <= 46.03

| | | | | pctPoverty <= 10.79

| | | | | | pctSmallHousUnits <= 43.15: 0 (13.57)

| | | | | | pctSmallHousUnits > 43.15

| | | | | | | pctHousWOphone <= 1.64: 1 (11.1)

| | | | | | | pctHousWOphone > 1.64

| | | | | | | | pctKids2Par <= 62.89: 0 (8.86/0.33)

| | | | | | | | pctKids2Par > 62.89

| | | | | | | | | pctHousOwnerOccup <= 60.35

| | | | | | | | | | medIncome <= 35856: 1 (8.51/1.34)

| | | | | | | | | | medIncome > 35856: 0 (11.27/0.67)

| | | | | | | | | pctHousOwnerOccup > 60.35: 1 (10.76/0.33)

| | | | | pctPoverty > 10.79

| | | | | | pctBlack <= 54.83

| | | | | | | pctPersOwnOccup <= 41.35

| | | | | | | | pctHousWOphone <= 7.18

| | | | | | | | | pctSmallHousUnits <= 74.6: 0 (7.35)

| | | | | | | | | pctSmallHousUnits > 74.6: 1 (2.75)

| | | | | | | | pctHousWOphone > 7.18: 1 (11.93/1.0)

| | | | | | | pctPersOwnOccup > 41.35

| | | | | | | | pctHousOwnerOccup <= 49.35: 0 (53.28/1.0)

| | | | | | | | pctHousOwnerOccup > 49.35

| | | | | | | | | pctUnemploy <= 8.13

| | | | | | | | | | pctAllDivorc <= 11.8

| | | | | | | | | | | pctWhite <= 68.7: 1 (6.34)

| | | | | | | | | | | pctWhite > 68.7

| | | | | | | | | | | | pctUnemploy <= 6.26

| | | | | | | | | | | | | pctPersOwnOccup <= 59.58: 0 (2.19)

| | | | | | | | | | | | | pctPersOwnOccup > 59.58: 1 (4.49)

| | | | | | | | | | | | pctUnemploy > 6.26: 0 (8.74)

| | | | | | | | | | pctAllDivorc > 11.8

| | | | | | | | | | | pctWhite <= 69.63: 0 (50.34)

| | | | | | | | | | | pctWhite > 69.63

| | | | | | | | | | | | pctSmallHousUnits <= 50.19: 0 (54.08/2.01)

| | | | | | | | | | | | pctSmallHousUnits > 50.19

| | | | | | | | | | | | | pctHousWOphone <= 12.32

| | | | | | | | | | | | | | pctWhite <= 70.67: 1 (4.37)

| | | | | | | | | | | | | | pctWhite > 70.67

| | | | | | | | | | | | | | | pctWhite <= 87.42

| | | | | | | | | | | | | | | | pctWdiv <= 28.65: 1 (2.52/0.33)

| | | | | | | | | | | | | | | | pctWdiv > 28.65: 0 (45.64)

| | | | | | | | | | | | | | | pctWhite > 87.42

| | | | | | | | | | | | | | | | pctBlack <= 7.74: 0 (4.49)

| | | | | | | | | | | | | | | | pctBlack > 7.74: 1 (7.23/0.33)

| | | | | | | | | | | | | pctHousWOphone > 12.32: 1 (4.6)

| | | | | | | | | pctUnemploy > 8.13

| | | | | | | | | | pctUnemploy <= 9.82

| | | | | | | | | | | pctUnemploy <= 9.18

| | | | | | | | | | | | pctKidsBornNevrMarr <= 5.94

| | | | | | | | | | | | | pctKidsBornNevrMarr <= 3.74

| | | | | | | | | | | | | | medIncome <= 19906: 1 (2.86)

| | | | | | | | | | | | | | medIncome > 19906: 0 (17.62/0.33)

| | | | | | | | | | | | | pctKidsBornNevrMarr > 3.74

| | | | | | | | | | | | | | pctPubAsst <= 11.27: 0 (6.34/2.19)

| | | | | | | | | | | | | | pctPubAsst > 11.27: 1 (13.35)

| | | | | | | | | | | | pctKidsBornNevrMarr > 5.94: 0 (11.17)

| | | | | | | | | | | pctUnemploy > 9.18

| | | | | | | | | | | | pctWhite <= 82.95: 1 (18.28/0.67)

| | | | | | | | | | | | pctWhite > 82.95: 0 (2.86/0.33)

| | | | | | | | | | pctUnemploy > 9.82

| | | | | | | | | | | pctBlack <= 49.59

| | | | | | | | | | | | pctWhite <= 69.89: 0 (24.11)

| | | | | | | | | | | | pctWhite > 69.89

| | | | | | | | | | | | | pctWhite <= 72.11: 1 (2.41)

| | | | | | | | | | | | | pctWhite > 72.11

| | | | | | | | | | | | | | pctPersOwnOccup <= 52.94: 1 (2.19)

| | | | | | | | | | | | | | pctPersOwnOccup > 52.94: 0 (16.88/0.33)

| | | | | | | | | | | pctBlack > 49.59: 1 (4.37)

| | | | | | pctBlack > 54.83: 0 (24.79)

| | | | pctWdiv > 46.03: 0 (51.72/3.01)

| | pctWhite > 89.38

| | | pctBlack <= 7.73

| | | | pctSmallHousUnits <= 23.62: 0 (13.57)

| | | | pctSmallHousUnits > 23.62

| | | | | pctKids2Par <= 70.95

| | | | | | pctWdiv <= 48.54

| | | | | | | pctPersOwnOccup <= 70.97

| | | | | | | | pctPoverty <= 18.66

| | | | | | | | | pctHousWOphone <= 8.2

| | | | | | | | | | pctWdiv <= 43.65

| | | | | | | | | | | pctAllDivorc <= 12.87

| | | | | | | | | | | | pctBlack <= 0.78: 0 (4.71/0.33)

| | | | | | | | | | | | pctBlack > 0.78: 1 (12.06)

| | | | | | | | | | | pctAllDivorc > 12.87: 0 (27.98/3.19)

| | | | | | | | | | pctWdiv > 43.65: 1 (9.76)

| | | | | | | | | pctHousWOphone > 8.2: 1 (12.39)

| | | | | | | | pctPoverty > 18.66

| | | | | | | | | pctSmallHousUnits <= 61.04: 0 (21.69/1.0)

| | | | | | | | | pctSmallHousUnits > 61.04: 1 (2.86/0.67)

| | | | | | | pctPersOwnOccup > 70.97: 0 (10.94)

| | | | | | pctWdiv > 48.54: 0 (19.69/0.33)

| | | | | pctKids2Par > 70.95

| | | | | | pctKidsBornNevrMarr <= 1.67

| | | | | | | pctAllDivorc <= 11.19: 0 (8.97/0.33)

| | | | | | | pctAllDivorc > 11.19

| | | | | | | | pctSmallHousUnits <= 45.9: 1 (10.18)

| | | | | | | | pctSmallHousUnits > 45.9

| | | | | | | | | pctPubAsst <= 2.78: 1 (4.09/0.33)

| | | | | | | | | pctPubAsst > 2.78: 0 (15.7/3.01)

| | | | | | pctKidsBornNevrMarr > 1.67: 1 (26.21/2.08)

| | | pctBlack > 7.73: 1 (19.06/0.67)

Number of Leaves : 65

Size of the tree : 129

Weight: 1.92

J48 pruned tree

------------------

pctKidsBornNevrMarr <= 0.87: 1 (67.2/10.09)

pctKidsBornNevrMarr > 0.87

| pctAllDivorc <= 10.85

| | pctKids2Par <= 81.03

| | | pctKidsBornNevrMarr <= 6.13: 0 (497.34/71.82)

| | | pctKidsBornNevrMarr > 6.13

| | | | pctPersOwnOccup <= 54.65

| | | | | pctKidsBornNevrMarr <= 7.97: 1 (3.89)

| | | | | pctKidsBornNevrMarr > 7.97

| | | | | | pctBlack <= 0.79: 1 (3.57)

| | | | | | pctBlack > 0.79: 0 (34.66/1.44)

| | | | pctPersOwnOccup > 54.65: 1 (9.71)

| | pctKids2Par > 81.03

| | | pctPubAsst <= 2.79

| | | | pctBlack <= 0.7: 0 (26.14/0.38)

| | | | pctBlack > 0.7

| | | | | pctBlack <= 12.88: 1 (8.67)

| | | | | pctBlack > 12.88: 0 (8.35/0.19)

| | | pctPubAsst > 2.79: 1 (12.51)

| pctAllDivorc > 10.85

| | pctKids2Par <= 57.6: 0 (105.43/16.28)

| | pctKids2Par > 57.6

| | | medIncome <= 42431

| | | | pctWhite <= 89.38

| | | | | pctKids2Par <= 58.72

| | | | | | medIncome <= 23584: 1 (11.28/0.19)

| | | | | | medIncome > 23584

| | | | | | | pctPoverty <= 14.79: 1 (3.95/0.19)

| | | | | | | pctPoverty > 14.79: 0 (4.34)

| | | | | pctKids2Par > 58.72

| | | | | | pctPersOwnOccup <= 65.58: 0 (190.17/47.77)

| | | | | | pctPersOwnOccup > 65.58: 1 (48.52/22.05)

| | | | pctWhite > 89.38

| | | | | pctSmallHousUnits <= 29.09: 0 (9.22/0.19)

| | | | | pctSmallHousUnits > 29.09

| | | | | | pctPoverty <= 13.68

| | | | | | | pctPersOwnOccup <= 66.67

| | | | | | | | pctWdiv <= 50.24

| | | | | | | | | pctAllDivorc <= 14.68: 1 (34.71)

| | | | | | | | | pctAllDivorc > 14.68

| | | | | | | | | | pctWhite <= 91.28: 1 (2.44)

| | | | | | | | | | pctWhite > 91.28: 0 (2.34/0.19)

| | | | | | | | pctWdiv > 50.24: 0 (6.91/1.89)

| | | | | | | pctPersOwnOccup > 66.67

| | | | | | | | medIncome <= 25982: 1 (5.39)

| | | | | | | | medIncome > 25982

| | | | | | | | | pctPoverty <= 8.03

| | | | | | | | | | pctWdiv <= 48.82: 1 (7.02)

| | | | | | | | | | pctWdiv > 48.82: 0 (4.91/1.15)

| | | | | | | | | pctPoverty > 8.03: 0 (14.69/1.15)

| | | | | | pctPoverty > 13.68

| | | | | | | pctSmallHousUnits <= 52.01

| | | | | | | | pctWdiv <= 37.44: 1 (16.86/1.25)

| | | | | | | | pctWdiv > 37.44

| | | | | | | | | pctPoverty <= 14.44: 0 (4.82)

| | | | | | | | | pctPoverty > 14.44

| | | | | | | | | | pctWdiv <= 40.62: 1 (4.4)

| | | | | | | | | | pctWdiv > 40.62: 0 (3.83)

| | | | | | | pctSmallHousUnits > 52.01

| | | | | | | | pctKids2Par <= 67.87

| | | | | | | | | pctKidsBornNevrMarr <= 1.75: 0 (5.34)

| | | | | | | | | pctKidsBornNevrMarr > 1.75

| | | | | | | | | | pctKidsBornNevrMarr <= 2.52: 1 (5.2)

| | | | | | | | | | pctKidsBornNevrMarr > 2.52

| | | | | | | | | | | pctUnemploy <= 7.31: 1 (3.95/1.38)

| | | | | | | | | | | pctUnemploy > 7.31: 0 (8.34)

| | | | | | | | pctKids2Par > 67.87: 0 (16.99/0.19)

| | | medIncome > 42431

| | | | pctWdiv <= 51.51: 1 (13.74/0.19)

| | | | pctWdiv > 51.51

| | | | | pctPoverty <= 5.1: 1 (8.02/1.19)

| | | | | pctPoverty > 5.1: 0 (5.15/0.38)

Number of Leaves : 37

Size of the tree : 73

Weight: 1.76

J48 pruned tree

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pctPersOwnOccup <= 65.93

| pctSmallHousUnits <= 71.3

| | pctHousOwnerOccup <= 39.98

| | | pctWhite <= 76.72

| | | | pctWdiv <= 32.57: 1 (14.71/1.51)

| | | | pctWdiv > 32.57: 0 (5.29/0.73)

| | | pctWhite > 76.72: 1 (28.77/0.77)

| | pctHousOwnerOccup > 39.98

| | | pctHousOwnerOccup <= 47.57

| | | | pctKidsBornNevrMarr <= 4.19

| | | | | pctBlack <= 1.79: 0 (19.21/1.87)

| | | | | pctBlack > 1.79

| | | | | | pctKids2Par <= 65.51: 0 (2.54)

| | | | | | pctKids2Par > 65.51: 1 (25.51/0.7)

| | | | pctKidsBornNevrMarr > 4.19

| | | | | pctAllDivorc <= 9.34: 1 (2.2)

| | | | | pctAllDivorc > 9.34: 0 (38.63/1.3)

| | | pctHousOwnerOccup > 47.57

| | | | pctAllDivorc <= 9.75

| | | | | medIncome <= 17489: 1 (13.73)

| | | | | medIncome > 17489

| | | | | | pctHousWOphone <= 7.33

| | | | | | | pctKids2Par <= 69.27: 1 (22.92)

| | | | | | | pctKids2Par > 69.27

| | | | | | | | pctKidsBornNevrMarr <= 1.59: 1 (6.76)

| | | | | | | | pctKidsBornNevrMarr > 1.59

| | | | | | | | | pctAllDivorc <= 5.92: 1 (4.81)

| | | | | | | | | pctAllDivorc > 5.92

| | | | | | | | | | pctAllDivorc <= 8.02: 0 (20.4)

| | | | | | | | | | pctAllDivorc > 8.02

| | | | | | | | | | | pctPubAsst <= 5.95: 1 (2.61)

| | | | | | | | | | | pctPubAsst > 5.95: 0 (10.87/1.3)

| | | | | | pctHousWOphone > 7.33: 0 (37.47/0.7)

| | | | pctAllDivorc > 9.75

| | | | | pctAllDivorc <= 10.48: 1 (33.74)

| | | | | pctAllDivorc > 10.48

| | | | | | pctHousWOphone <= 1.34

| | | | | | | pctKids2Par <= 77.07

| | | | | | | | pctPersOwnOccup <= 59.81: 1 (2.77)

| | | | | | | | pctPersOwnOccup > 59.81: 0 (27.8/0.65)

| | | | | | | pctKids2Par > 77.07: 1 (8.19)

| | | | | | pctHousWOphone > 1.34: 1 (376.33/133.13)

| pctSmallHousUnits > 71.3

| | pctAllDivorc <= 10.59: 0 (27.45/1.51)

| | pctAllDivorc > 10.59

| | | pctBlack <= 12.06

| | | | medIncome <= 24215: 0 (2.23)

| | | | medIncome > 24215: 1 (11.98/0.85)

| | | pctBlack > 12.06: 0 (4.86)

pctPersOwnOccup > 65.93

| pctHousWOphone <= 11.17

| | pctWhite <= 89.38

| | | pctPubAsst <= 2.71: 0 (44.41/3.65)

| | | pctPubAsst > 2.71

| | | | pctWdiv <= 54.85

| | | | | pctPubAsst <= 6.11

| | | | | | pctHousWOphone <= 1.3

| | | | | | | medIncome <= 39437: 0 (23.09/0.22)

| | | | | | | medIncome > 39437

| | | | | | | | pctKids2Par <= 79.25: 1 (4.25)

| | | | | | | | pctKids2Par > 79.25: 0 (11.03/1.21)

| | | | | | pctHousWOphone > 1.3: 1 (27.57/0.76)

| | | | | pctPubAsst > 6.11

| | | | | | pctPubAsst <= 10.41: 0 (66.43/4.11)

| | | | | | pctPubAsst > 10.41: 1 (7.26/0.81)

| | | | pctWdiv > 54.85: 1 (11.57)

| | pctWhite > 89.38

| | | pctWhite <= 93.83: 1 (45.7/4.45)

| | | pctWhite > 93.83

| | | | pctUnemploy <= 5.2

| | | | | pctPoverty <= 2.31: 1 (6.79)

| | | | | pctPoverty > 2.31

| | | | | | pctUnemploy <= 3.04: 0 (32.15/3.8)

| | | | | | pctUnemploy > 3.04

| | | | | | | pctPersOwnOccup <= 91.07

| | | | | | | | pctKidsBornNevrMarr <= 0.93: 1 (13.05)

| | | | | | | | pctKidsBornNevrMarr > 0.93

| | | | | | | | | pctHousWOphone <= 3.16

| | | | | | | | | | pctAllDivorc <= 9.8

| | | | | | | | | | | pctPersOwnOccup <= 76.28

| | | | | | | | | | | | pctPersOwnOccup <= 68.71: 0 (4.78)

| | | | | | | | | | | | pctPersOwnOccup > 68.71: 1 (8.4)

| | | | | | | | | | | pctPersOwnOccup > 76.28

| | | | | | | | | | | | pctSmallHousUnits <= 41.67

| | | | | | | | | | | | | pctHousOwnerOccup <= 71.49: 0 (5.03)

| | | | | | | | | | | | | pctHousOwnerOccup > 71.49: 1 (8.11)

| | | | | | | | | | | | pctSmallHousUnits > 41.67: 0 (15.61/0.76)

| | | | | | | | | | pctAllDivorc > 9.8: 1 (14.03/2.24)

| | | | | | | | | pctHousWOphone > 3.16: 0 (13.34/0.88)

| | | | | | | pctPersOwnOccup > 91.07: 0 (14.1/0.56)

| | | | pctUnemploy > 5.2

| | | | | pctKidsBornNevrMarr <= 2.31: 1 (37.57/2.13)

| | | | | pctKidsBornNevrMarr > 2.31

| | | | | | pctHousWOphone <= 3.71: 0 (13.15/1.42)

| | | | | | pctHousWOphone > 3.71: 1 (5.39)

| pctHousWOphone > 11.17: 0 (35.38/1.3)

Number of Leaves : 49

Size of the tree : 97

Weight: 1.8

J48 pruned tree

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pctAllDivorc <= 10.46: 1 (332.42/141.47)

pctAllDivorc > 10.46

| medIncome <= 32659

| | pctPersOwnOccup <= 40.41

| | | pctBlack <= 40.76: 1 (18.68/3.06)

| | | pctBlack > 40.76: 0 (6.36)

| | pctPersOwnOccup > 40.41

| | | pctHousOwnerOccup <= 62.91

| | | | pctUnemploy <= 8.82

| | | | | medIncome <= 31461

| | | | | | pctHousOwnerOccup <= 53.39

| | | | | | | medIncome <= 30512: 0 (107.85/1.41)

| | | | | | | medIncome > 30512

| | | | | | | | pctHousWOphone <= 3.3: 1 (3.07)

| | | | | | | | pctHousWOphone > 3.3: 0 (3.08)

| | | | | | pctHousOwnerOccup > 53.39

| | | | | | | pctWhite <= 86.42

| | | | | | | | pctPoverty <= 16.09: 0 (80.18/0.81)

| | | | | | | | pctPoverty > 16.09

| | | | | | | | | pctSmallHousUnits <= 41.03: 1 (7.42/2.46)

| | | | | | | | | pctSmallHousUnits > 41.03

| | | | | | | | | | pctUnemploy <= 6.38

| | | | | | | | | | | medIncome <= 23839: 1 (5.22)

| | | | | | | | | | | medIncome > 23839

| | | | | | | | | | | | pctWhite <= 75.56: 0 (8.02)

| | | | | | | | | | | | pctWhite > 75.56: 1 (2.36)

| | | | | | | | | | pctUnemploy > 6.38

| | | | | | | | | | | pctAllDivorc <= 15.25: 0 (56.16/0.43)

| | | | | | | | | | | pctAllDivorc > 15.25: 1 (3.34/0.86)

| | | | | | | pctWhite > 86.42

| | | | | | | | pctBlack <= 10.49

| | | | | | | | | pctSmallHousUnits <= 51.8

| | | | | | | | | | pctUnemploy <= 6.66

| | | | | | | | | | | medIncome <= 26409: 0 (14.34/1.8)

| | | | | | | | | | | medIncome > 26409: 1 (6.76/0.43)

| | | | | | | | | | pctUnemploy > 6.66: 1 (4.76)

| | | | | | | | | pctSmallHousUnits > 51.8: 0 (59.47/3.95)

| | | | | | | | pctBlack > 10.49: 1 (10.42)

| | | | | medIncome > 31461

| | | | | | pctUnemploy <= 6.11: 0 (14.56/1.72)

| | | | | | pctUnemploy > 6.11: 1 (8.98)

| | | | pctUnemploy > 8.82

| | | | | pctPoverty <= 14.7

| | | | | | medIncome <= 28070: 1 (10.85)

| | | | | | medIncome > 28070: 0 (2.46)

| | | | | pctPoverty > 14.7

| | | | | | pctHousWOphone <= 11.74

| | | | | | | pctPubAsst <= 20.09

| | | | | | | | pctUnemploy <= 9.57

| | | | | | | | | pctUnemploy <= 9.35: 0 (20.04/1.21)

| | | | | | | | | pctUnemploy > 9.35

| | | | | | | | | | pctPubAsst <= 13.24: 1 (5.39)

| | | | | | | | | | pctPubAsst > 13.24: 0 (2.52)

| | | | | | | | pctUnemploy > 9.57: 0 (63.1)

| | | | | | | pctPubAsst > 20.09

| | | | | | | | pctAllDivorc <= 13.22: 1 (7.71/0.4)

| | | | | | | | pctAllDivorc > 13.22: 0 (3.64)

| | | | | | pctHousWOphone > 11.74

| | | | | | | pctAllDivorc <= 13.71

| | | | | | | | pctHousOwnerOccup <= 59.78

| | | | | | | | | pctBlack <= 1.55: 0 (2.46)

| | | | | | | | | pctBlack > 1.55: 1 (17.54)

| | | | | | | | pctHousOwnerOccup > 59.78: 0 (3.64)

| | | | | | | pctAllDivorc > 13.71: 0 (6.96)

| | | pctHousOwnerOccup > 62.91

| | | | pctWdiv <= 28.16: 0 (19.24/0.13)

| | | | pctWdiv > 28.16

| | | | | medIncome <= 28070

| | | | | | pctSmallHousUnits <= 42.61: 1 (7.02)

| | | | | | pctSmallHousUnits > 42.61

| | | | | | | pctBlack <= 9.4

| | | | | | | | pctAllDivorc <= 10.56: 0 (5.72)

| | | | | | | | pctAllDivorc > 10.56

| | | | | | | | | pctPoverty <= 23.4

| | | | | | | | | | medIncome <= 22807

| | | | | | | | | | | pctPersOwnOccup <= 68.49

| | | | | | | | | | | | pctUnemploy <= 6.75: 0 (2.99)

| | | | | | | | | | | | pctUnemploy > 6.75: 1 (15.07/0.41)

| | | | | | | | | | | pctPersOwnOccup > 68.49: 0 (8.06/0.54)

| | | | | | | | | | medIncome > 22807: 1 (17.86/0.41)

| | | | | | | | | pctPoverty > 23.4: 0 (5.06)

| | | | | | | pctBlack > 9.4

| | | | | | | | pctAllDivorc <= 14.9

| | | | | | | | | pctWdiv <= 28.29: 1 (2.48)

| | | | | | | | | pctWdiv > 28.29: 0 (31.96/2.17)

| | | | | | | | pctAllDivorc > 14.9: 1 (2.93)

| | | | | medIncome > 28070: 0 (36.91/3.98)

| medIncome > 32659

| | pctKids2Par <= 79.31

| | | pctKidsBornNevrMarr <= 3.36

| | | | pctKids2Par <= 73.41

| | | | | pctHousWOphone <= 1.11

| | | | | | pctWdiv <= 49.59: 1 (2.15)

| | | | | | pctWdiv > 49.59: 0 (2.08/0.45)

| | | | | pctHousWOphone > 1.11: 0 (41.51/2.5)

| | | | pctKids2Par > 73.41

| | | | | pctPubAsst <= 3.72

| | | | | | pctAllDivorc <= 12.77

| | | | | | | pctAllDivorc <= 10.73: 1 (3.82)

| | | | | | | pctAllDivorc > 10.73

| | | | | | | | pctPoverty <= 7.87: 0 (28.25/3.76)

| | | | | | | | pctPoverty > 7.87: 1 (2.6)

| | | | | | pctAllDivorc > 12.77: 1 (5.68/0.38)

| | | | | pctPubAsst > 3.72: 1 (13.15/0.41)

| | | pctKidsBornNevrMarr > 3.36

| | | | pctHousWOphone <= 1.02: 0 (5.79)

| | | | pctHousWOphone > 1.02

| | | | | pctKids2Par <= 64.34

| | | | | | pctBlack <= 9.04: 1 (2.74)

| | | | | | pctBlack > 9.04: 0 (7.4/0.41)

| | | | | pctKids2Par > 64.34

| | | | | | pctWdiv <= 35.24

| | | | | | | pctAllDivorc <= 11.91: 1 (5.53)

| | | | | | | pctAllDivorc > 11.91: 0 (5.55/0.38)

| | | | | | pctWdiv > 35.24: 1 (29.46/0.4)

| | pctKids2Par > 79.31: 1 (9.28)

Number of Leaves : 59

Size of the tree : 117

Weight: 1.78

J48 pruned tree

------------------

pctAllDivorc <= 10.35

| pctWhite <= 88.42

| | pctWhite <= 66.29

| | | pctBlack <= 0.68: 1 (13.18)

| | | pctBlack > 0.68

| | | | pctPubAsst <= 5.26: 1 (4.33)

| | | | pctPubAsst > 5.26

| | | | | pctHousWOphone <= 9.51: 0 (64.18/0.68)

| | | | | pctHousWOphone > 9.51: 1 (4.62/1.55)

| | pctWhite > 66.29

| | | pctWhite <= 75.37: 0 (104.95/2.4)

| | | pctWhite > 75.37

| | | | pctPubAsst <= 2.14: 0 (57.15/0.91)

| | | | pctPubAsst > 2.14

| | | | | pctBlack <= 16.84

| | | | | | pctAllDivorc <= 9.53

| | | | | | | pctWdiv <= 44.61: 1 (6.87)

| | | | | | | pctWdiv > 44.61

| | | | | | | | pctKidsBornNevrMarr <= 2.1: 1 (3.25)

| | | | | | | | pctKidsBornNevrMarr > 2.1: 0 (31.25/1.81)

| | | | | | pctAllDivorc > 9.53: 0 (53.37/2.07)

| | | | | pctBlack > 16.84: 1 (5.95)

| pctWhite > 88.42

| | pctKids2Par <= 73.68

| | | medIncome <= 40431: 1 (15.3)

| | | medIncome > 40431: 0 (10.15)

| | pctKids2Par > 73.68

| | | medIncome <= 41372: 0 (182.42/26.41)

| | | medIncome > 41372

| | | | pctBlack <= 0.83

| | | | | pctWhite <= 96.59: 0 (20.03/1.31)

| | | | | pctWhite > 96.59: 1 (4.39)

| | | | pctBlack > 0.83: 1 (13.64)

pctAllDivorc > 10.35

| medIncome <= 31665: 0 (476.54/142.68)

| medIncome > 31665: 1 (148.42/65.97)

Number of Leaves : 19

Size of the tree : 37

Weight: 1.38

J48 pruned tree

------------------

medIncome <= 31441

| pctAllDivorc <= 10.29

| | pctWhite <= 79.88

| | | pctSmallHousUnits <= 49.96

| | | | pctPoverty <= 26.53: 0 (3.86)

| | | | pctPoverty > 26.53: 1 (4.62)

| | | pctSmallHousUnits > 49.96

| | | | pctWhite <= 69.23

| | | | | pctBlack <= 0.67: 1 (5.4)

| | | | | pctBlack > 0.67: 0 (35.79/2.07)

| | | | pctWhite > 69.23: 0 (78.44/1.84)

| | pctWhite > 79.88

| | | pctWdiv <= 47.6: 1 (22.75)

| | | pctWdiv > 47.6

| | | | pctPubAsst <= 7.5

| | | | | pctPubAsst <= 5.47: 1 (8.78)

| | | | | pctPubAsst > 5.47

| | | | | | pctKids2Par <= 73.04: 1 (3.35)

| | | | | | pctKids2Par > 73.04

| | | | | | | pctKidsBornNevrMarr <= 1.63

| | | | | | | | pctPubAsst <= 6.05: 0 (6.23/0.19)

| | | | | | | | pctPubAsst > 6.05: 1 (2.39)

| | | | | | | pctKidsBornNevrMarr > 1.63: 0 (43.09)

| | | | pctPubAsst > 7.5: 1 (11.39)

| pctAllDivorc > 10.29

| | pctPersOwnOccup <= 64.79

| | | pctPersOwnOccup <= 64.12

| | | | pctUnemploy <= 3.83: 1 (19.17)

| | | | pctUnemploy > 3.83

| | | | | pctWhite <= 89.37

| | | | | | pctWdiv <= 32.86

| | | | | | | pctAllDivorc <= 13.95

| | | | | | | | pctSmallHousUnits <= 44.58

| | | | | | | | | pctAllDivorc <= 13.55: 0 (11.07/0.62)

| | | | | | | | | pctAllDivorc > 13.55: 1 (3.67)

| | | | | | | | pctSmallHousUnits > 44.58

| | | | | | | | | pctWhite <= 65.15

| | | | | | | | | | pctWhite <= 62.68

| | | | | | | | | | | pctBlack <= 56.66

| | | | | | | | | | | | pctHousWOphone <= 10

| | | | | | | | | | | | | pctWhite <= 48.29: 1 (11.76/0.97)

| | | | | | | | | | | | | pctWhite > 48.29: 0 (5.62/0.55)

| | | | | | | | | | | | pctHousWOphone > 10: 1 (19.24/0.46)

| | | | | | | | | | | pctBlack > 56.66: 0 (3.6)

| | | | | | | | | | pctWhite > 62.68: 0 (6.19/0.55)

| | | | | | | | | pctWhite > 65.15: 1 (63.1/6.92)

| | | | | | | pctAllDivorc > 13.95

| | | | | | | | pctKids2Par <= 45.35: 0 (11.66)

| | | | | | | | pctKids2Par > 45.35

| | | | | | | | | pctUnemploy <= 7.53: 0 (9.82)

| | | | | | | | | pctUnemploy > 7.53

| | | | | | | | | | pctUnemploy <= 9.85

| | | | | | | | | | | pctSmallHousUnits <= 50.72: 1 (18.16)

| | | | | | | | | | | pctSmallHousUnits > 50.72

| | | | | | | | | | | | pctWdiv <= 32.14: 0 (4.92)

| | | | | | | | | | | | pctWdiv > 32.14: 1 (3.6)

| | | | | | | | | | pctUnemploy > 9.85: 0 (4.49)

| | | | | | pctWdiv > 32.86

| | | | | | | pctPersOwnOccup <= 57.49: 0 (29.3)

| | | | | | | pctPersOwnOccup > 57.49

| | | | | | | | pctKids2Par <= 64.34

| | | | | | | | | medIncome <= 26311

| | | | | | | | | | pctKids2Par <= 62.89

| | | | | | | | | | | pctAllDivorc <= 12.34: 1 (15.16/0.97)

| | | | | | | | | | | pctAllDivorc > 12.34

| | | | | | | | | | | | medIncome <= 25983: 0 (17.18/0.62)

| | | | | | | | | | | | medIncome > 25983: 1 (3.6)

| | | | | | | | | | pctKids2Par > 62.89: 1 (14.71/0.14)

| | | | | | | | | medIncome > 26311: 0 (6.08)

| | | | | | | | pctKids2Par > 64.34: 0 (13.2)

| | | | | pctWhite > 89.37

| | | | | | pctWdiv <= 48.82

| | | | | | | pctKidsBornNevrMarr <= 1.78

| | | | | | | | pctKids2Par <= 69.27: 0 (4.08)

| | | | | | | | pctKids2Par > 69.27: 1 (3.11)

| | | | | | | pctKidsBornNevrMarr > 1.78

| | | | | | | | pctUnemploy <= 6.26: 1 (36.73/0.31)

| | | | | | | | pctUnemploy > 6.26

| | | | | | | | | pctBlack <= 0.42: 0 (3.16)

| | | | | | | | | pctBlack > 0.42

| | | | | | | | | | pctPubAsst <= 8.9: 1 (17.24/0.14)

| | | | | | | | | | pctPubAsst > 8.9

| | | | | | | | | | | pctAllDivorc <= 12.15: 1 (5.77)

| | | | | | | | | | | pctAllDivorc > 12.15: 0 (7.46/0.81)

| | | | | | pctWdiv > 48.82: 0 (5.96/1.1)

| | | pctPersOwnOccup > 64.12: 0 (20.19/1.11)

| | pctPersOwnOccup > 64.79: 1 (151.34/31.62)

medIncome > 31441

| pctWhite <= 96.03: 0 (366.67/85.7)

| pctWhite > 96.03

| | pctPubAsst <= 3.67

| | | pctBlack <= 0.83: 0 (47.31/11.14)

| | | pctBlack > 0.83: 1 (6.83/0.59)

| | pctPubAsst > 3.67: 1 (22.78/0.95)

Number of Leaves : 48

Size of the tree : 95

Weight: 1.97

J48 pruned tree

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medIncome <= 31583

| pctPersOwnOccup <= 64.34

| | pctPoverty <= 12.29

| | | pctPersOwnOccup <= 55.2

| | | | pctKidsBornNevrMarr <= 3.37: 0 (7.24/0.48)

| | | | pctKidsBornNevrMarr > 3.37: 1 (7.29/0.54)

| | | pctPersOwnOccup > 55.2: 1 (36.1/4.29)

| | pctPoverty > 12.29

| | | pctBlack <= 2.48

| | | | pctUnemploy <= 9.97

| | | | | medIncome <= 20810: 1 (11.04/1.92)

| | | | | medIncome > 20810

| | | | | | medIncome <= 24131: 0 (20.18/1.4)

| | | | | | medIncome > 24131

| | | | | | | pctBlack <= 0.62: 1 (10.51/0.99)

| | | | | | | pctBlack > 0.62

| | | | | | | | pctHousOwnerOccup <= 49.04: 1 (5.94/1.1)

| | | | | | | | pctHousOwnerOccup > 49.04: 0 (12.38/0.31)

| | | | pctUnemploy > 9.97: 0 (38.89/3.07)

| | | pctBlack > 2.48

| | | | pctKidsBornNevrMarr <= 2.57: 1 (23.0/1.75)

| | | | pctKidsBornNevrMarr > 2.57

| | | | | pctAllDivorc <= 8.48: 1 (11.9/0.55)

| | | | | pctAllDivorc > 8.48

| | | | | | pctWhite <= 89.13

| | | | | | | pctWdiv <= 41.36

| | | | | | | | pctWdiv <= 40.72

| | | | | | | | | pctUnemploy <= 5.82: 0 (14.56)

| | | | | | | | | pctUnemploy > 5.82

| | | | | | | | | | pctPoverty <= 16.57: 1 (22.99/4.5)

| | | | | | | | | | pctPoverty > 16.57: 0 (110.2/44.48)

| | | | | | | | pctWdiv > 40.72: 1 (7.85)

| | | | | | | pctWdiv > 41.36: 0 (17.89)

| | | | | | pctWhite > 89.13: 1 (16.04/1.91)

| pctPersOwnOccup > 64.34

| | pctSmallHousUnits <= 43.99

| | | pctUnemploy <= 7.25

| | | | pctSmallHousUnits <= 42.31

| | | | | pctSmallHousUnits <= 39.72

| | | | | | pctAllDivorc <= 13.25: 1 (5.6)

| | | | | | pctAllDivorc > 13.25: 0 (3.52)

| | | | | pctSmallHousUnits > 39.72: 0 (15.41/0.48)

| | | | pctSmallHousUnits > 42.31: 1 (8.34/0.64)

| | | pctUnemploy > 7.25: 1 (16.95)

| | pctSmallHousUnits > 43.99

| | | pctPubAsst <= 5.39

| | | | pctSmallHousUnits <= 48.54: 1 (9.28)

| | | | pctSmallHousUnits > 48.54

| | | | | pctWhite <= 96.06

| | | | | | pctPubAsst <= 4.78

| | | | | | | pctAllDivorc <= 14.1: 0 (16.31/0.69)

| | | | | | | pctAllDivorc > 14.1: 1 (2.05)

| | | | | | pctPubAsst > 4.78: 1 (2.64)

| | | | | pctWhite > 96.06: 1 (4.86)

| | | pctPubAsst > 5.39: 0 (181.19/40.65)

medIncome > 31583

| pctPubAsst <= 11.68

| | pctPoverty <= 5.96

| | | pctPoverty <= 2.15: 1 (20.16)

| | | pctPoverty > 2.15

| | | | pctKidsBornNevrMarr <= 1.25

| | | | | pctKidsBornNevrMarr <= 1.1

| | | | | | pctAllDivorc <= 12.13

| | | | | | | pctBlack <= 0.83

| | | | | | | | pctBlack <= 0.78

| | | | | | | | | pctUnemploy <= 2.82: 1 (18.82)

| | | | | | | | | pctUnemploy > 2.82

| | | | | | | | | | pctBlack <= 0.57

| | | | | | | | | | | pctUnemploy <= 2.98: 0 (11.48/1.18)

| | | | | | | | | | | pctUnemploy > 2.98

| | | | | | | | | | | | pctAllDivorc <= 5.95: 0 (8.05/1.93)

| | | | | | | | | | | | pctAllDivorc > 5.95: 1 (9.14)

| | | | | | | | | | pctBlack > 0.57: 1 (10.39)

| | | | | | | | pctBlack > 0.78: 0 (9.99/1.82)

| | | | | | | pctBlack > 0.83: 1 (30.14)

| | | | | | pctAllDivorc > 12.13: 0 (10.11/2.03)

| | | | | pctKidsBornNevrMarr > 1.1

| | | | | | pctHousWOphone <= 1.3: 0 (20.78/2.83)

| | | | | | pctHousWOphone > 1.3: 1 (4.97)

| | | | pctKidsBornNevrMarr > 1.25

| | | | | pctAllDivorc <= 7.51

| | | | | | pctBlack <= 13.99

| | | | | | | pctUnemploy <= 3.28: 0 (3.52/0.08)

| | | | | | | pctUnemploy > 3.28: 1 (2.08)

| | | | | | pctBlack > 13.99: 0 (3.44)

| | | | | pctAllDivorc > 7.51

| | | | | | pctPoverty <= 4.91: 1 (76.21)

| | | | | | pctPoverty > 4.91

| | | | | | | pctHousOwnerOccup <= 77.39

| | | | | | | | pctAllDivorc <= 11.07: 1 (29.87/0.34)

| | | | | | | | pctAllDivorc > 11.07

| | | | | | | | | pctUnemploy <= 4.67: 1 (4.15/0.99)

| | | | | | | | | pctUnemploy > 4.67: 0 (4.08)

| | | | | | | pctHousOwnerOccup > 77.39

| | | | | | | | pctPoverty <= 5.26: 0 (9.11)

| | | | | | | | pctPoverty > 5.26: 1 (2.3)

| | pctPoverty > 5.96

| | | pctWdiv <= 50.49

| | | | pctSmallHousUnits <= 29.21

| | | | | pctKidsBornNevrMarr <= 3

| | | | | | pctAllDivorc <= 10.85: 1 (2.57)

| | | | | | pctAllDivorc > 10.85: 0 (4.33)

| | | | | pctKidsBornNevrMarr > 3: 0 (7.06)

| | | | pctSmallHousUnits > 29.21

| | | | | pctPoverty <= 6.08

| | | | | | medIncome <= 35856: 1 (4.38)

| | | | | | medIncome > 35856: 0 (11.42/0.01)

| | | | | pctPoverty > 6.08

| | | | | | pctAllDivorc <= 10.68: 1 (38.79/0.55)

| | | | | | pctAllDivorc > 10.68

| | | | | | | pctKids2Par <= 62.96: 0 (8.0/0.57)

| | | | | | | pctKids2Par > 62.96

| | | | | | | | pctKidsBornNevrMarr <= 4

| | | | | | | | | pctPoverty <= 11.13

| | | | | | | | | | pctBlack <= 8.7

| | | | | | | | | | | pctSmallHousUnits <= 42.51: 1 (18.28)

| | | | | | | | | | | pctSmallHousUnits > 42.51

| | | | | | | | | | | | pctPersOwnOccup <= 61.69

| | | | | | | | | | | | | pctBlack <= 1.76: 1 (23.68)

| | | | | | | | | | | | | pctBlack > 1.76

| | | | | | | | | | | | | | pctBlack <= 2.55: 0 (6.87/0.57)

| | | | | | | | | | | | | | pctBlack > 2.55

| | | | | | | | | | | | | | | pctPersOwnOccup <= 43.88: 0 (2.5/0.57)

| | | | | | | | | | | | | | | pctPersOwnOccup > 43.88: 1 (13.58)

| | | | | | | | | | | | pctPersOwnOccup > 61.69

| | | | | | | | | | | | | pctPersOwnOccup <= 65.08: 0 (6.99)

| | | | | | | | | | | | | pctPersOwnOccup > 65.08

| | | | | | | | | | | | | | pctKidsBornNevrMarr <= 1.22: 0 (2.17/0.18)

| | | | | | | | | | | | | | pctKidsBornNevrMarr > 1.22: 1 (2.1)

| | | | | | | | | | pctBlack > 8.7

| | | | | | | | | | | pctPersOwnOccup <= 65.6: 0 (6.67)

| | | | | | | | | | | pctPersOwnOccup > 65.6: 1 (2.41)

| | | | | | | | | pctPoverty > 11.13: 0 (9.8/0.57)

| | | | | | | | pctKidsBornNevrMarr > 4

| | | | | | | | | pctWdiv <= 28.39: 0 (2.74/0.61)

| | | | | | | | | pctWdiv > 28.39: 1 (38.89)

| | | pctWdiv > 50.49

| | | | pctKids2Par <= 74.78: 0 (30.75/0.57)

| | | | pctKids2Par > 74.78

| | | | | pctPoverty <= 6.6: 0 (9.04/1.64)

| | | | | pctPoverty > 6.6: 1 (12.11)

| pctPubAsst > 11.68: 1 (25.9)

Number of Leaves : 72

Size of the tree : 143

Weight: 2.15

J48 pruned tree

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pctPubAsst <= 20.05

| pctPoverty <= 4.92: 1 (160.63/29.03)

| pctPoverty > 4.92

| | pctKidsBornNevrMarr <= 8.88

| | | pctPubAsst <= 7.26

| | | | pctUnemploy <= 7.56

| | | | | pctPoverty <= 9.26

| | | | | | pctBlack <= 4.62

| | | | | | | pctBlack <= 2.95

| | | | | | | | pctWhite <= 83.17: 1 (15.19)

| | | | | | | | pctWhite > 83.17

| | | | | | | | | pctKids2Par <= 71.98

| | | | | | | | | | pctKidsBornNevrMarr <= 1.69: 1 (2.16/0.33)

| | | | | | | | | | pctKidsBornNevrMarr > 1.69: 0 (11.54/0.61)

| | | | | | | | | pctKids2Par > 71.98

| | | | | | | | | | pctPersOwnOccup <= 80.43: 1 (61.53/12.61)

| | | | | | | | | | pctPersOwnOccup > 80.43: 0 (8.71/2.25)

| | | | | | | pctBlack > 2.95: 1 (21.38)

| | | | | | pctBlack > 4.62

| | | | | | | pctWdiv <= 51.21

| | | | | | | | pctKidsBornNevrMarr <= 3.24: 0 (25.02/9.47)

| | | | | | | | pctKidsBornNevrMarr > 3.24

| | | | | | | | | pctWhite <= 66.81

| | | | | | | | | | pctWhite <= 50.33: 1 (2.01)

| | | | | | | | | | pctWhite > 50.33: 0 (4.31)

| | | | | | | | | pctWhite > 66.81: 1 (20.99)

| | | | | | | pctWdiv > 51.21: 0 (12.64/0.33)

| | | | | pctPoverty > 9.26

| | | | | | pctHousWOphone <= 7.95

| | | | | | | pctAllDivorc <= 9.49

| | | | | | | | pctPubAsst <= 6.31

| | | | | | | | | pctWhite <= 97.37: 1 (14.22)

| | | | | | | | | pctWhite > 97.37: 0 (3.87/0.03)

| | | | | | | | pctPubAsst > 6.31: 0 (8.38/0.39)

| | | | | | | pctAllDivorc > 9.49

| | | | | | | | pctKidsBornNevrMarr <= 2.64

| | | | | | | | | pctBlack <= 8

| | | | | | | | | | pctSmallHousUnits <= 43.04: 1 (2.72)

| | | | | | | | | | pctSmallHousUnits > 43.04: 0 (41.06/8.33)

| | | | | | | | | pctBlack > 8: 1 (3.19)

| | | | | | | | pctKidsBornNevrMarr > 2.64: 0 (45.25/1.77)

| | | | | | pctHousWOphone > 7.95

| | | | | | | pctPubAsst <= 6.27

| | | | | | | | pctPubAsst <= 5.34

| | | | | | | | | pctPubAsst <= 4.72: 1 (2.65)

| | | | | | | | | pctPubAsst > 4.72: 0 (4.9)

| | | | | | | | pctPubAsst > 5.34: 1 (27.77/0.68)

| | | | | | | pctPubAsst > 6.27

| | | | | | | | pctPubAsst <= 6.7: 0 (7.47/0.18)

| | | | | | | | pctPubAsst > 6.7: 1 (2.18/0.66)

| | | | pctUnemploy > 7.56: 1 (22.29/0.98)

| | | pctPubAsst > 7.26

| | | | pctKidsBornNevrMarr <= 1.86

| | | | | pctKids2Par <= 74.2

| | | | | | pctKidsBornNevrMarr <= 1.01: 1 (4.36)

| | | | | | pctKidsBornNevrMarr > 1.01

| | | | | | | pctUnemploy <= 5.51: 1 (3.41)

| | | | | | | pctUnemploy > 5.51

| | | | | | | | pctWhite <= 97.66: 0 (27.9/1.04)

| | | | | | | | pctWhite > 97.66: 1 (5.4/2.15)

| | | | | pctKids2Par > 74.2: 1 (8.59)

| | | | pctKidsBornNevrMarr > 1.86

| | | | | pctBlack <= 0.38

| | | | | | pctKids2Par <= 73.11

| | | | | | | pctWhite <= 64.75: 1 (2.68)

| | | | | | | pctWhite > 64.75: 0 (17.9)

| | | | | | pctKids2Par > 73.11: 1 (4.48)

| | | | | pctBlack > 0.38

| | | | | | pctWhite <= 55.61

| | | | | | | medIncome <= 28289: 0 (16.92/1.33)

| | | | | | | medIncome > 28289: 1 (7.29)

| | | | | | pctWhite > 55.61

| | | | | | | pctBlack <= 25.13

| | | | | | | | pctBlack <= 18.19

| | | | | | | | | pctPersOwnOccup <= 61.54

| | | | | | | | | | pctHousWOphone <= 12.72

| | | | | | | | | | | pctHousWOphone <= 4.1

| | | | | | | | | | | | pctHousOwnerOccup <= 55.68: 1 (26.42/1.53)

| | | | | | | | | | | | pctHousOwnerOccup > 55.68

| | | | | | | | | | | | | pctPoverty <= 10.74

| | | | | | | | | | | | | | pctBlack <= 2.54: 0 (2.64/0.32)

| | | | | | | | | | | | | | pctBlack > 2.54: 1 (2.23)

| | | | | | | | | | | | | pctPoverty > 10.74: 0 (5.0)

| | | | | | | | | | | pctHousWOphone > 4.1

| | | | | | | | | | | | pctPubAsst <= 10.55: 0 (22.76/1.86)

| | | | | | | | | | | | pctPubAsst > 10.55

| | | | | | | | | | | | | pctUnemploy <= 9.08

| | | | | | | | | | | | | | pctAllDivorc <= 14.85: 1 (15.86/1.11)

| | | | | | | | | | | | | | pctAllDivorc > 14.85: 0 (6.55)

| | | | | | | | | | | | | pctUnemploy > 9.08

| | | | | | | | | | | | | | pctAllDivorc <= 8.59: 1 (2.36)

| | | | | | | | | | | | | | pctAllDivorc > 8.59: 0 (15.94/0.18)

| | | | | | | | | | pctHousWOphone > 12.72

| | | | | | | | | | | pctAllDivorc <= 12.15: 0 (3.41/1.09)

| | | | | | | | | | | pctAllDivorc > 12.15: 1 (42.34)

| | | | | | | | | pctPersOwnOccup > 61.54

| | | | | | | | | | pctPersOwnOccup <= 68.71

| | | | | | | | | | | pctPoverty <= 15.49: 1 (64.61/0.05)

| | | | | | | | | | | pctPoverty > 15.49

| | | | | | | | | | | | medIncome <= 25040

| | | | | | | | | | | | | pctPoverty <= 23.4

| | | | | | | | | | | | | | pctPoverty <= 17.15

| | | | | | | | | | | | | | | medIncome <= 22279: 1 (3.58/0.36)

| | | | | | | | | | | | | | | medIncome > 22279: 0 (2.75)

| | | | | | | | | | | | | | pctPoverty > 17.15

| | | | | | | | | | | | | | | pctHousOwnerOccup <= 65.1: 1 (58.27)

| | | | | | | | | | | | | | | pctHousOwnerOccup > 65.1

| | | | | | | | | | | | | | | | pctHousWOphone <= 11.46: 0 (4.27/0.26)

| | | | | | | | | | | | | | | | pctHousWOphone > 11.46: 1 (19.72)

| | | | | | | | | | | | | pctPoverty > 23.4

| | | | | | | | | | | | | | pctAllDivorc <= 9.69: 1 (2.36)

| | | | | | | | | | | | | | pctAllDivorc > 9.69: 0 (5.06)

| | | | | | | | | | | | medIncome > 25040: 0 (5.95/1.09)

| | | | | | | | | | pctPersOwnOccup > 68.71

| | | | | | | | | | | pctPubAsst <= 13.56

| | | | | | | | | | | | pctAllDivorc <= 11.45

| | | | | | | | | | | | | pctWdiv <= 30.67: 0 (2.02)

| | | | | | | | | | | | | pctWdiv > 30.67: 1 (3.72)

| | | | | | | | | | | | pctAllDivorc > 11.45: 0 (14.77/0.94)

| | | | | | | | | | | pctPubAsst > 13.56: 1 (11.87)

| | | | | | | | pctBlack > 18.19

| | | | | | | | | medIncome <= 19433: 1 (5.03/0.91)

| | | | | | | | | medIncome > 19433: 0 (15.94)

| | | | | | | pctBlack > 25.13

| | | | | | | | pctPoverty <= 30.22: 1 (84.35/6.32)

| | | | | | | | pctPoverty > 30.22: 0 (4.7/1.41)

| | pctKidsBornNevrMarr > 8.88

| | | pctWhite <= 31.19: 0 (4.78)

| | | pctWhite > 31.19

| | | | pctWdiv <= 27.54: 1 (67.99/2.29)

| | | | pctWdiv > 27.54: 0 (4.89/1.25)

pctPubAsst > 20.05

| pctPubAsst <= 20.54: 1 (26.34)

| pctPubAsst > 20.54

| | pctPubAsst <= 21.11: 0 (2.95)

| | pctPubAsst > 21.11: 1 (27.54/1.54)

Number of Leaves : 69

Size of the tree : 137

Weight: 2.48

Number of performed Iterations: 10

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 469 78.2972 %

Incorrectly Classified Instances 130 21.7028 %

Kappa statistic 0.5109

Mean absolute error 0.2159

Root mean squared error 0.4319

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.667 0.158 0.680 0.667 0.673 0.511 0.843 0.735 0

0.842 0.333 0.833 0.842 0.838 0.511 0.843 0.900 1

Weighted Avg. 0.783 0.275 0.782 0.783 0.782 0.511 0.843 0.845

=== Confusion Matrix ===

a b <-- classified as

134 67 | a = 0

63 335 | b = 1

## AdaBoostM1 with NaiveBayes Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

============================================

pctBlack

mean 16.6775 4.7559

std. dev. 18.461 8.4149

weight sum 410 810

precision 0.1229 0.1229

pctWhite

mean 74.9498 89.1821

std. dev. 18.1747 12.469

weight sum 410 810

precision 0.0922 0.0922

medIncome

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctWdiv

mean 36.9869 47.8489

std. dev. 10.6441 12.1074

weight sum 410 810

precision 0.0682 0.0682

pctPubAsst

mean 9.3876 5.3268

std. dev. 5.2609 3.7398

weight sum 410 810

precision 0.056 0.056

pctPoverty

mean 17.0078 8.7312

std. dev. 8.1777 7.4395

weight sum 410 810

precision 0.0603 0.0603

pctUnemploy

mean 7.4912 5.2522

std. dev. 3.2298 2.3249

weight sum 410 810

precision 0.0417 0.0417

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pctKids2Par

mean 62.1493 76.4552

std. dev. 10.9557 8.9928

weight sum 410 810

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 4.9822 2.0151

std. dev. 3.69 1.9649

weight sum 410 810

precision 0.0476 0.0476

pctPersOwnOccup

mean 58.4915 71.0758

std. dev. 11.2675 13.4708

weight sum 410 810

precision 0.0699 0.0699

pctSmallHousUnits

mean 52.7817 41.5841

std. dev. 10.8605 13.4828

weight sum 410 810

precision 0.0829 0.0829

pctHousOwnerOccup

mean 56.2603 67.7035

std. dev. 11.3042 13.5429

weight sum 410 810

precision 0.0688 0.0688

pctHousWOphone

mean 6.7071 2.9217

std. dev. 4.1118 3.4473

weight sum 410 810

precision 0.0345 0.0345

Weight: 1.29

Naive Bayes Classifier

Class

Attribute 0 1

(0.37) (0.63)

============================================

pctBlack

mean 11.6393 7.5952

std. dev. 15.8697 11.61

weight sum 448.9343 771.0657

precision 0.1229 0.1229

pctWhite

mean 80.6252 84.1269

std. dev. 16.6188 16.1464

weight sum 448.9343 771.0657

precision 0.0922 0.0922

medIncome

mean 30527.8831 33722.4867

std. dev. 10526.1127 13780.5073

weight sum 448.9343 771.0657

precision 96.3552 96.3552

pctWdiv

mean 41.6403 42.8475

std. dev. 11.4347 12.9667

weight sum 448.9343 771.0657

precision 0.0682 0.0682

pctPubAsst

mean 7.5346 7.1458

std. dev. 4.7901 4.7162

weight sum 448.9343 771.0657

precision 0.056 0.056

pctPoverty

mean 13.7316 12.0459

std. dev. 8.0227 8.8049

weight sum 448.9343 771.0657

precision 0.0603 0.0603

pctUnemploy

mean 6.4264 6.252

std. dev. 2.9503 2.8141

weight sum 448.9343 771.0657

precision 0.0417 0.0417

pctAllDivorc

mean 12.2654 10.4281

std. dev. 2.7397 2.7762

weight sum 448.9343 771.0657

precision 0.0215 0.0215

pctKids2Par

mean 66.9675 72.0611

std. dev. 10.7818 10.2944

weight sum 448.9343 771.0657

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.7375 2.9066

std. dev. 3.236 2.5719

weight sum 448.9343 771.0657

precision 0.0476 0.0476

pctPersOwnOccup

mean 62.3132 66.5289

std. dev. 12.0662 14.1865

weight sum 448.9343 771.0657

precision 0.0699 0.0699

pctSmallHousUnits

mean 50.2557 45.1568

std. dev. 11.8695 13.4196

weight sum 448.9343 771.0657

precision 0.0829 0.0829

pctHousOwnerOccup

mean 59.5871 63.8175

std. dev. 12.1069 13.8441

weight sum 448.9343 771.0657

precision 0.0688 0.0688

pctHousWOphone

mean 5.0015 4.5819

std. dev. 3.9515 4.3785

weight sum 448.9343 771.0657

precision 0.0345 0.0345

Weight: 0.23

Naive Bayes Classifier

Class

Attribute 0 1

(0.37) (0.63)

============================================

pctBlack

mean 10.8576 8.1859

std. dev. 15.2869 12.0751

weight sum 454.5328 765.4672

precision 0.1229 0.1229

pctWhite

mean 81.4257 83.1214

std. dev. 16.2009 16.6306

weight sum 454.5328 765.4672

precision 0.0922 0.0922

medIncome

mean 31189.8568 32934.1416

std. dev. 10771.4205 13481.5717

weight sum 454.5328 765.4672

precision 96.3552 96.3552

pctWdiv

mean 42.365 41.9514

std. dev. 11.4821 12.8609

weight sum 454.5328 765.4672

precision 0.0682 0.0682

pctPubAsst

mean 7.2588 7.483

std. dev. 4.6768 4.7842

weight sum 454.5328 765.4672

precision 0.056 0.056

pctPoverty

mean 13.2299 12.5741

std. dev. 7.9766 8.7739

weight sum 454.5328 765.4672

precision 0.0603 0.0603

pctUnemploy

mean 6.2637 6.4199

std. dev. 2.8947 2.8421

weight sum 454.5328 765.4672

precision 0.0417 0.0417

pctAllDivorc

mean 12.096 10.6065

std. dev. 2.7638 2.7783

weight sum 454.5328 765.4672

precision 0.0215 0.0215

pctKids2Par

mean 67.8315 71.1598

std. dev. 10.6035 10.3577

weight sum 454.5328 765.4672

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.5338 3.1013

std. dev. 3.1186 2.6555

weight sum 454.5328 765.4672

precision 0.0476 0.0476

pctPersOwnOccup

mean 63.0207 65.588

std. dev. 12.1639 14.1455

weight sum 454.5328 765.4672

precision 0.0699 0.0699

pctSmallHousUnits

mean 49.6982 45.9054

std. dev. 12.0075 13.2768

weight sum 454.5328 765.4672

precision 0.0829 0.0829

pctHousOwnerOccup

mean 60.2322 62.9883

std. dev. 12.2292 13.757

weight sum 454.5328 765.4672

precision 0.0688 0.0688

pctHousWOphone

mean 4.7432 4.8623

std. dev. 3.9114 4.4225

weight sum 454.5328 765.4672

precision 0.0345 0.0345

Weight: 0.34

Naive Bayes Classifier

Class

Attribute 0 1

(0.39) (0.61)

============================================

pctBlack

mean 9.8248 9.1855

std. dev. 14.3697 12.8525

weight sum 470.1457 749.8543

precision 0.1229 0.1229

pctWhite

mean 82.3455 82.1388

std. dev. 15.7017 16.8518

weight sum 470.1457 749.8543

precision 0.0922 0.0922

medIncome

mean 31928.4802 32138.4918

std. dev. 11088.6512 12982.3357

weight sum 470.1457 749.8543

precision 96.3552 96.3552

pctWdiv

mean 43.149 41.0451

std. dev. 11.6358 12.5378

weight sum 470.1457 749.8543

precision 0.0682 0.0682

pctPubAsst

mean 6.9991 7.761

std. dev. 4.5586 4.7561

weight sum 470.1457 749.8543

precision 0.056 0.056

pctPoverty

mean 12.76 13.006

std. dev. 7.9752 8.5973

weight sum 470.1457 749.8543

precision 0.0603 0.0603

pctUnemploy

mean 6.1197 6.5413

std. dev. 2.8768 2.793

weight sum 470.1457 749.8543

precision 0.0417 0.0417

pctAllDivorc

mean 11.8042 10.8882

std. dev. 2.7788 2.7837

weight sum 470.1457 749.8543

precision 0.0215 0.0215

pctKids2Par

mean 68.9536 70.0472

std. dev. 10.2952 10.405

weight sum 470.1457 749.8543

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.2896 3.3555

std. dev. 2.9355 2.7646

weight sum 470.1457 749.8543

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.0437 64.5736

std. dev. 12.3296 13.8424

weight sum 470.1457 749.8543

precision 0.0699 0.0699

pctSmallHousUnits

mean 48.82 46.6952

std. dev. 12.2098 12.9376

weight sum 470.1457 749.8543

precision 0.0829 0.0829

pctHousOwnerOccup

mean 61.1958 62.0655

std. dev. 12.4205 13.4376

weight sum 470.1457 749.8543

precision 0.0688 0.0688

pctHousWOphone

mean 4.4904 5.1119

std. dev. 3.8931 4.3609

weight sum 470.1457 749.8543

precision 0.0345 0.0345

Weight: 0.57

Naive Bayes Classifier

Class

Attribute 0 1

(0.42) (0.58)

============================================

pctBlack

mean 9.6477 9.4605

std. dev. 14.081 13.1079

weight sum 514.159 705.841

precision 0.1229 0.1229

pctWhite

mean 82.0729 82.3569

std. dev. 15.7441 16.4852

weight sum 514.159 705.841

precision 0.0922 0.0922

medIncome

mean 31864.0677 31941.1319

std. dev. 11697.8854 12165.1537

weight sum 514.159 705.841

precision 96.3552 96.3552

pctWdiv

mean 42.7606 41.1231

std. dev. 12.2204 11.8154

weight sum 514.159 705.841

precision 0.0682 0.0682

pctPubAsst

mean 7.2823 7.5492

std. dev. 4.8344 4.4771

weight sum 514.159 705.841

precision 0.056 0.056

pctPoverty

mean 13.2537 12.6051

std. dev. 8.4848 8.0659

weight sum 514.159 705.841

precision 0.0603 0.0603

pctUnemploy

mean 6.3156 6.3729

std. dev. 3.036 2.666

weight sum 514.159 705.841

precision 0.0417 0.0417

pctAllDivorc

mean 11.4365 11.2314

std. dev. 2.8649 2.7604

weight sum 514.159 705.841

precision 0.0215 0.0215

pctKids2Par

mean 69.3414 69.5991

std. dev. 10.5098 9.9308

weight sum 514.159 705.841

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.2815 3.3901

std. dev. 2.907 2.6601

weight sum 514.159 705.841

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.8355 63.8286

std. dev. 12.9602 13.1703

weight sum 514.159 705.841

precision 0.0699 0.0699

pctSmallHousUnits

mean 47.8643 47.5247

std. dev. 12.697 12.347

weight sum 514.159 705.841

precision 0.0829 0.0829

pctHousOwnerOccup

mean 62.1729 61.1856

std. dev. 12.9892 12.8461

weight sum 514.159 705.841

precision 0.0688 0.0688

pctHousWOphone

mean 4.6708 4.9719

std. dev. 4.1433 4.1217

weight sum 514.159 705.841

precision 0.0345 0.0345

Weight: 0.26

Naive Bayes Classifier

Class

Attribute 0 1

(0.46) (0.54)

============================================

pctBlack

mean 9.2769 9.7157

std. dev. 13.344 13.7836

weight sum 564.6964 655.3036

precision 0.1229 0.1229

pctWhite

mean 82.4428 82.1475

std. dev. 15.2303 17.0149

weight sum 564.6964 655.3036

precision 0.0922 0.0922

medIncome

mean 31703.4749 32264.5567

std. dev. 11300.0209 12602.2927

weight sum 564.6964 655.3036

precision 96.3552 96.3552

pctWdiv

mean 42.6733 41.4029

std. dev. 11.7391 12.3475

weight sum 564.6964 655.3036

precision 0.0682 0.0682

pctPubAsst

mean 7.1913 7.5689

std. dev. 4.6021 4.6671

weight sum 564.6964 655.3036

precision 0.056 0.056

pctPoverty

mean 13.1365 12.6185

std. dev. 8.167 8.3523

weight sum 564.6964 655.3036

precision 0.0603 0.0603

pctUnemploy

mean 6.2589 6.3921

std. dev. 2.8778 2.7801

weight sum 564.6964 655.3036

precision 0.0417 0.0417

pctAllDivorc

mean 11.4672 11.1324

std. dev. 2.7934 2.8357

weight sum 564.6964 655.3036

precision 0.0215 0.0215

pctKids2Par

mean 69.4875 69.7407

std. dev. 9.9915 10.383

weight sum 564.6964 655.3036

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.2114 3.4097

std. dev. 2.737 2.7717

weight sum 564.6964 655.3036

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.6853 64.2453

std. dev. 12.7322 13.4622

weight sum 564.6964 655.3036

precision 0.0699 0.0699

pctSmallHousUnits

mean 48.0088 47.0863

std. dev. 12.4363 12.6874

weight sum 564.6964 655.3036

precision 0.0829 0.0829

pctHousOwnerOccup

mean 61.995 61.6125

std. dev. 12.7474 13.1456

weight sum 564.6964 655.3036

precision 0.0688 0.0688

pctHousWOphone

mean 4.6195 4.9399

std. dev. 4.0321 4.2049

weight sum 564.6964 655.3036

precision 0.0345 0.0345

Weight: 0.21

Naive Bayes Classifier

Class

Attribute 0 1

(0.45) (0.55)

============================================

pctBlack

mean 9.8532 9.3093

std. dev. 13.9484 13.2275

weight sum 553.5526 666.4474

precision 0.1229 0.1229

pctWhite

mean 81.6371 82.8866

std. dev. 15.7754 16.4106

weight sum 553.5526 666.4474

precision 0.0922 0.0922

medIncome

mean 31749.6442 32033.1923

std. dev. 11681.355 12159.713

weight sum 553.5526 666.4474

precision 96.3552 96.3552

pctWdiv

mean 42.2824 41.5289

std. dev. 12.0439 11.926

weight sum 553.5526 666.4474

precision 0.0682 0.0682

pctPubAsst

mean 7.3446 7.4658

std. dev. 4.7827 4.5229

weight sum 553.5526 666.4474

precision 0.056 0.056

pctPoverty

mean 13.403 12.4348

std. dev. 8.4562 8.0681

weight sum 553.5526 666.4474

precision 0.0603 0.0603

pctUnemploy

mean 6.3593 6.3324

std. dev. 2.9709 2.7189

weight sum 553.5526 666.4474

precision 0.0417 0.0417

pctAllDivorc

mean 11.4373 11.243

std. dev. 2.8471 2.7796

weight sum 553.5526 666.4474

precision 0.0215 0.0215

pctKids2Par

mean 69.2229 69.7966

std. dev. 10.4125 10.028

weight sum 553.5526 666.4474

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.3283 3.3273

std. dev. 2.8652 2.6737

weight sum 553.5526 666.4474

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.6342 64.223

std. dev. 13.188 12.9989

weight sum 553.5526 666.4474

precision 0.0699 0.0699

pctSmallHousUnits

mean 47.7642 47.3296

std. dev. 12.8831 12.3056

weight sum 553.5526 666.4474

precision 0.0829 0.0829

pctHousOwnerOccup

mean 62.0196 61.5178

std. dev. 13.2031 12.708

weight sum 553.5526 666.4474

precision 0.0688 0.0688

pctHousWOphone

mean 4.7576 4.888

std. dev. 4.1659 4.0905

weight sum 553.5526 666.4474

precision 0.0345 0.0345

Weight: 0.2

Naive Bayes Classifier

Class

Attribute 0 1

(0.48) (0.52)

============================================

pctBlack

mean 9.2769 9.81

std. dev. 13.2485 13.9245

weight sum 591.318 628.682

precision 0.1229 0.1229

pctWhite

mean 82.3407 82.2243

std. dev. 15.2609 16.9887

weight sum 591.318 628.682

precision 0.0922 0.0922

medIncome

mean 31982.7676 31777.3808

std. dev. 11579.1347 12196.2843

weight sum 591.318 628.682

precision 96.3552 96.3552

pctWdiv

mean 42.6479 41.1978

std. dev. 11.824 12.1526

weight sum 591.318 628.682

precision 0.0682 0.0682

pctPubAsst

mean 7.1403 7.6339

std. dev. 4.5763 4.674

weight sum 591.318 628.682

precision 0.056 0.056

pctPoverty

mean 13.0636 12.7966

std. dev. 8.1908 8.3642

weight sum 591.318 628.682

precision 0.0603 0.0603

pctUnemploy

mean 6.2411 6.4411

std. dev. 2.8589 2.8092

weight sum 591.318 628.682

precision 0.0417 0.0417

pctAllDivorc

mean 11.4005 11.2291

std. dev. 2.803 2.8098

weight sum 591.318 628.682

precision 0.0215 0.0215

pctKids2Par

mean 69.6911 69.4566

std. dev. 9.9911 10.2783

weight sum 591.318 628.682

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.1897 3.4425

std. dev. 2.7083 2.7879

weight sum 591.318 628.682

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.9069 63.9921

std. dev. 12.9277 13.2254

weight sum 591.318 628.682

precision 0.0699 0.0699

pctSmallHousUnits

mean 47.6027 47.4114

std. dev. 12.6198 12.4989

weight sum 591.318 628.682

precision 0.0829 0.0829

pctHousOwnerOccup

mean 62.2224 61.3467

std. dev. 12.9471 12.9323

weight sum 591.318 628.682

precision 0.0688 0.0688

pctHousWOphone

mean 4.6112 5.0016

std. dev. 4.0614 4.1793

weight sum 591.318 628.682

precision 0.0345 0.0345

Weight: 0.15

Naive Bayes Classifier

Class

Attribute 0 1

(0.47) (0.53)

============================================

pctBlack

mean 9.7624 9.3406

std. dev. 13.7034 13.4798

weight sum 577.9968 642.0032

precision 0.1229 0.1229

pctWhite

mean 81.6597 82.9839

std. dev. 15.6565 16.5509

weight sum 577.9968 642.0032

precision 0.0922 0.0922

medIncome

mean 31620.945 32132.6446

std. dev. 11557.0989 12162.0042

weight sum 577.9968 642.0032

precision 96.3552 96.3552

pctWdiv

mean 42.1611 41.7269

std. dev. 11.9041 12.0842

weight sum 577.9968 642.0032

precision 0.0682 0.0682

pctPubAsst

mean 7.349 7.4152

std. dev. 4.6943 4.5797

weight sum 577.9968 642.0032

precision 0.056 0.056

pctPoverty

mean 13.4445 12.3983

std. dev. 8.3624 8.2147

weight sum 577.9968 642.0032

precision 0.0603 0.0603

pctUnemploy

mean 6.3625 6.3122

std. dev. 2.9283 2.7618

weight sum 577.9968 642.0032

precision 0.0417 0.0417

pctAllDivorc

mean 11.4556 11.1955

std. dev. 2.8133 2.8147

weight sum 577.9968 642.0032

precision 0.0215 0.0215

pctKids2Par

mean 69.2203 69.9174

std. dev. 10.2021 10.204

weight sum 577.9968 642.0032

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.3089 3.3211

std. dev. 2.8026 2.7242

weight sum 577.9968 642.0032

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.4752 64.4168

std. dev. 13.025 13.1837

weight sum 577.9968 642.0032

precision 0.0699 0.0699

pctSmallHousUnits

mean 47.8519 47.1481

std. dev. 12.6211 12.5275

weight sum 577.9968 642.0032

precision 0.0829 0.0829

pctHousOwnerOccup

mean 61.856 61.6928

std. dev. 13.018 12.9107

weight sum 577.9968 642.0032

precision 0.0688 0.0688

pctHousWOphone

mean 4.7969 4.8335

std. dev. 4.1622 4.1091

weight sum 577.9968 642.0032

precision 0.0345 0.0345

Weight: 0.01

Naive Bayes Classifier

Class

Attribute 0 1

(0.47) (0.53)

============================================

pctBlack

mean 9.7369 9.3676

std. dev. 13.6791 13.5038

weight sum 578.9075 641.0925

precision 0.1229 0.1229

pctWhite

mean 81.6941 82.9495

std. dev. 15.6402 16.5671

weight sum 578.9075 641.0925

precision 0.0922 0.0922

medIncome

mean 31646.7326 32104.9407

std. dev. 11561.57 12156.2954

weight sum 578.9075 641.0925

precision 96.3552 96.3552

pctWdiv

mean 42.1907 41.6984

std. dev. 11.9003 12.0844

weight sum 578.9075 641.0925

precision 0.0682 0.0682

pctPubAsst

mean 7.3358 7.4265

std. dev. 4.6869 4.5847

weight sum 578.9075 641.0925

precision 0.056 0.056

pctPoverty

mean 13.4201 12.423

std. dev. 8.3538 8.2241

weight sum 578.9075 641.0925

precision 0.0603 0.0603

pctUnemploy

mean 6.3547 6.3193

std. dev. 2.9236 2.7649

weight sum 578.9075 641.0925

precision 0.0417 0.0417

pctAllDivorc

mean 11.4502 11.1999

std. dev. 2.8129 2.8153

weight sum 578.9075 641.0925

precision 0.0215 0.0215

pctKids2Par

mean 69.2526 69.8882

std. dev. 10.1895 10.2089

weight sum 578.9075 641.0925

precision 0.0706 0.0706

pctKidsBornNevrMarr

mean 3.3015 3.3276

std. dev. 2.7969 2.7278

weight sum 578.9075 641.0925

precision 0.0476 0.0476

pctPersOwnOccup

mean 64.5027 64.393

std. dev. 13.0229 13.1832

weight sum 578.9075 641.0925

precision 0.0699 0.0699

pctSmallHousUnits

mean 47.8275 47.167

std. dev. 12.6217 12.5244

weight sum 578.9075 641.0925

precision 0.0829 0.0829

pctHousOwnerOccup

mean 61.8792 61.6729

std. dev. 13.0174 12.9097

weight sum 578.9075 641.0925

precision 0.0688 0.0688

pctHousWOphone

mean 4.7845 4.8442

std. dev. 4.1567 4.1133

weight sum 578.9075 641.0925

precision 0.0345 0.0345

Weight: 0.03

Number of performed Iterations: 10

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 498 83.1386 %

Incorrectly Classified Instances 101 16.8614 %

Kappa statistic 0.6223

Mean absolute error 0.25

Root mean squared error 0.3597

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.751 0.128 0.748 0.751 0.749 0.622 0.865 0.749 0

0.872 0.249 0.874 0.872 0.873 0.622 0.865 0.910 1

Weighted Avg. 0.831 0.208 0.832 0.831 0.831 0.622 0.865 0.856

=== Confusion Matrix ===

a b <-- classified as

151 50 | a = 0

51 347 | b = 1

## AdaBoostM1 with IBk (KNN) Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 1.58

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.78

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.08

Number of performed Iterations: 3

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 489 81.6361 %

Incorrectly Classified Instances 110 18.3639 %

Kappa statistic 0.5912

Mean absolute error 0.2734

Root mean squared error 0.3954

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.741 0.146 0.720 0.741 0.730 0.591 0.811 0.643 0

0.854 0.259 0.867 0.854 0.861 0.591 0.811 0.860 1

Weighted Avg. 0.816 0.221 0.818 0.816 0.817 0.591 0.811 0.788

=== Confusion Matrix ===

a b <-- classified as

149 52 | a = 0

58 340 | b = 1

## Multilayer Perceptron Model

=== Classifier model ===

Sigmoid Node 0

Inputs Weights

Threshold 3.924146710366345

Node 2 -5.392922167587967

Node 3 -8.665835756034257

Node 4 -1.3729444077068313

Node 5 -3.286480111715946

Node 6 10.510551695043496

Node 7 -5.762721955625568

Node 8 -2.882044930975993

Node 9 -1.8076080440456237

Sigmoid Node 1

Inputs Weights

Threshold -3.924072681158471

Node 2 5.3925300779187255

Node 3 8.665485916981977

Node 4 1.37294179773586

Node 5 3.2864093165750083

Node 6 -10.510081211885906

Node 7 5.7629449919099835

Node 8 2.881991485844597

Node 9 1.8075750701963822

Sigmoid Node 2

Inputs Weights

Threshold 0.43547586009854533

Attrib pctBlack -0.47370656810472633

Attrib pctWhite -0.25669096821617887

Attrib medIncome 0.7515145312768768

Attrib pctWdiv -2.9838277925418346

Attrib pctPubAsst 5.955278637338446

Attrib pctPoverty -1.9263975857198286

Attrib pctUnemploy -1.7388021442564725

Attrib pctAllDivorc -0.3638099381038806

Attrib pctKids2Par -0.8979356967443837

Attrib pctKidsBornNevrMarr 7.829569083430919

Attrib pctPersOwnOccup -0.4009963608638896

Attrib pctSmallHousUnits -3.9830942340715914

Attrib pctHousOwnerOccup 0.3531381230390795

Attrib pctHousWOphone -2.480928967527655

Sigmoid Node 3

Inputs Weights

Threshold -11.003802446814888

Attrib pctBlack 1.065863818447599

Attrib pctWhite 6.923737275440907

Attrib medIncome 18.047444335785684

Attrib pctWdiv 0.01080628176158516

Attrib pctPubAsst 1.4204013101482325

Attrib pctPoverty -3.6565426828508163

Attrib pctUnemploy -12.611093719984527

Attrib pctAllDivorc -5.808458936232738

Attrib pctKids2Par 3.7489881128809945

Attrib pctKidsBornNevrMarr 1.61563178005385

Attrib pctPersOwnOccup -8.448170073273639

Attrib pctSmallHousUnits 11.990710558053745

Attrib pctHousOwnerOccup -4.940344653567878

Attrib pctHousWOphone -1.1514662590006113

Sigmoid Node 4

Inputs Weights

Threshold -6.64317752905242

Attrib pctBlack -3.4567845153324215

Attrib pctWhite 5.445757865920526

Attrib medIncome 4.926460697178632

Attrib pctWdiv -4.36906008627738

Attrib pctPubAsst 9.429806191073093

Attrib pctPoverty -5.952710207213011

Attrib pctUnemploy -2.991722751081641

Attrib pctAllDivorc -8.155163377755887

Attrib pctKids2Par 3.798143132674509

Attrib pctKidsBornNevrMarr -0.28744430390107967

Attrib pctPersOwnOccup -4.199367972447366

Attrib pctSmallHousUnits -0.690126277022113

Attrib pctHousOwnerOccup -0.5114953475741437

Attrib pctHousWOphone -4.583329130201858

Sigmoid Node 5

Inputs Weights

Threshold -6.239180041911851

Attrib pctBlack 9.34279054129841

Attrib pctWhite 13.854924719376573

Attrib medIncome -5.919737509178263

Attrib pctWdiv 3.039395785315688

Attrib pctPubAsst -3.668565192523144

Attrib pctPoverty -5.137019119878926

Attrib pctUnemploy 5.700024176548175

Attrib pctAllDivorc -5.431059079805639

Attrib pctKids2Par 1.8178376043513647

Attrib pctKidsBornNevrMarr -6.432838337354298

Attrib pctPersOwnOccup -4.659312169926825

Attrib pctSmallHousUnits -3.802067272460457

Attrib pctHousOwnerOccup 0.06146057350460837

Attrib pctHousWOphone 9.75256112913751

Sigmoid Node 6

Inputs Weights

Threshold 5.724691297761987

Attrib pctBlack 6.954480256455347

Attrib pctWhite 1.6712972251194935

Attrib medIncome 7.422086637697567

Attrib pctWdiv 14.352437136223696

Attrib pctPubAsst -0.29443056786632155

Attrib pctPoverty 3.538064417307956

Attrib pctUnemploy 3.2214259112606354

Attrib pctAllDivorc 4.829988930939517

Attrib pctKids2Par -7.423077649688127

Attrib pctKidsBornNevrMarr -3.2770350398174863

Attrib pctPersOwnOccup 0.06922037259000886

Attrib pctSmallHousUnits 2.026961026017252

Attrib pctHousOwnerOccup -7.896109082340359

Attrib pctHousWOphone 0.16762182461440034

Sigmoid Node 7

Inputs Weights

Threshold -2.5642517478793656

Attrib pctBlack -0.3792503267856339

Attrib pctWhite 3.421907730648994

Attrib medIncome 0.38650072081974557

Attrib pctWdiv -0.6624676006149685

Attrib pctPubAsst 2.9747562690735037

Attrib pctPoverty 4.567598943234308

Attrib pctUnemploy -4.947319450154323

Attrib pctAllDivorc -6.589976041212212

Attrib pctKids2Par -1.98440113103131

Attrib pctKidsBornNevrMarr 5.723220316451396

Attrib pctPersOwnOccup -3.4838636857152108

Attrib pctSmallHousUnits -4.122064405637814

Attrib pctHousOwnerOccup -2.4706122618612736

Attrib pctHousWOphone 3.371013149720366

Sigmoid Node 8

Inputs Weights

Threshold -2.043385536706196

Attrib pctBlack -1.2151146764138359

Attrib pctWhite -5.081614178657609

Attrib medIncome 2.9872108570451124

Attrib pctWdiv -10.984551051533456

Attrib pctPubAsst 0.561927937870178

Attrib pctPoverty -15.793408504664951

Attrib pctUnemploy 1.5556605550329567

Attrib pctAllDivorc -0.7712157306072628

Attrib pctKids2Par 8.454757563305218

Attrib pctKidsBornNevrMarr 10.549024761489676

Attrib pctPersOwnOccup 0.11657973516703264

Attrib pctSmallHousUnits 3.100025680039737

Attrib pctHousOwnerOccup 7.411474335541796

Attrib pctHousWOphone 2.4381490695648975

Sigmoid Node 9

Inputs Weights

Threshold -2.086469008986598

Attrib pctBlack -0.8521047202912574

Attrib pctWhite -0.43363953502137903

Attrib medIncome -2.4988904737773767

Attrib pctWdiv 2.2342792227106174

Attrib pctPubAsst 7.7531759659483415

Attrib pctPoverty -5.5767159488185865

Attrib pctUnemploy -4.198136401077442

Attrib pctAllDivorc -8.11899361316501

Attrib pctKids2Par -4.119189976075282

Attrib pctKidsBornNevrMarr -2.574630127269301

Attrib pctPersOwnOccup 2.682574744955857

Attrib pctSmallHousUnits -8.685723697918757

Attrib pctHousOwnerOccup 12.398277905385942

Attrib pctHousWOphone -4.774673601827608

Class 0

Input

Node 0

Class 1

Input

Node 1

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17,19-28,30-32,34-41,43-44,46-50,52-67,69,71-73,75-77,79-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 487 81.3022 %

Incorrectly Classified Instances 112 18.6978 %

Kappa statistic 0.5838

Mean absolute error 0.2289

Root mean squared error 0.371

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.736 0.148 0.715 0.736 0.725 0.584 0.866 0.783 0

0.852 0.264 0.865 0.852 0.858 0.584 0.866 0.911 1

Weighted Avg. 0.813 0.225 0.815 0.813 0.814 0.584 0.866 0.868

=== Confusion Matrix ===

a b <-- classified as

148 53 | a = 0

59 339 | b = 1

# Test Results: GainRatioAttribute Eval Model

## Description

The GainRatioAttributeEval evaluates attributes and ranks them based upon the gain ratio relative to the class.

## Attributes Selected

pctBlack

medIncome

pctPubAsst

medFamIncome

pctPoverty

pctAllDivorc

pct2Par

kidsBornNevrMarr

pctPersOwnOccup

pctPopDenseHous

pctSmallHousUnits

pctHousOwnerOccup

pctHousWOphone

persHomeless

Class

The attributes selected were all ranked highly by the selection method, although I did make some executive decisions to exclude some of the other highly ranked attributes that were different representations of the same indicator (e.g. persPoverty and pctPoverty, kidsBornNevrMarr and pctkidsBornNevrMarr) and attributes that are highly correlated (e.g. pctAllDivorc, pctFemDivorc, pctMaleDivorc, or pct2Par, pctKids-4w2Par,…and so on).

## J48 Model

=== Classifier model ===

J48 pruned tree

------------------

pct2Par <= 75.8

| persHomeless <= 2

| | kidsBornNevrMarr <= 3248

| | | pct2Par <= 66.7

| | | | pctAllDivorc <= 14.1

| | | | | persHomeless <= 0

| | | | | | pctPopDenseHous <= 4.57

| | | | | | | pctBlack <= 34.48: 1 (42.0/13.0)

| | | | | | | pctBlack > 34.48: 0 (4.0)

| | | | | | pctPopDenseHous > 4.57

| | | | | | | medIncome <= 19193

| | | | | | | | medFamIncome <= 21753: 0 (8.0/1.0)

| | | | | | | | medFamIncome > 21753: 1 (6.0)

| | | | | | | medIncome > 19193: 0 (11.0)

| | | | | persHomeless > 0

| | | | | | pctHousWOphone <= 9.6

| | | | | | | pct2Par <= 64.25: 0 (8.0)

| | | | | | | pct2Par > 64.25: 1 (3.0/1.0)

| | | | | | pctHousWOphone > 9.6: 1 (2.0)

| | | | pctAllDivorc > 14.1: 0 (52.0/7.0)

| | | pct2Par > 66.7

| | | | pctPoverty <= 13.52

| | | | | persHomeless <= 0

| | | | | | pctHousOwnerOccup <= 63.45: 1 (76.0/11.0)

| | | | | | pctHousOwnerOccup > 63.45

| | | | | | | pct2Par <= 70.96: 0 (10.0/2.0)

| | | | | | | pct2Par > 70.96: 1 (39.0/11.0)

| | | | | persHomeless > 0

| | | | | | kidsBornNevrMarr <= 143: 0 (2.0)

| | | | | | kidsBornNevrMarr > 143: 1 (16.0)

| | | | pctPoverty > 13.52: 1 (133.0/57.0)

| | kidsBornNevrMarr > 3248: 0 (24.0/1.0)

| persHomeless > 2

| | pctAllDivorc <= 11.8

| | | medIncome <= 24325: 0 (8.0)

| | | medIncome > 24325

| | | | pct2Par <= 71.67

| | | | | pctAllDivorc <= 9.28: 1 (3.0)

| | | | | pctAllDivorc > 9.28

| | | | | | pctSmallHousUnits <= 54.47: 1 (3.0/1.0)

| | | | | | pctSmallHousUnits > 54.47: 0 (10.0)

| | | | pct2Par > 71.67

| | | | | pctPoverty <= 6.6: 0 (2.0)

| | | | | pctPoverty > 6.6: 1 (13.0)

| | pctAllDivorc > 11.8: 0 (160.0/18.0)

pct2Par > 75.8: 1 (585.0/46.0)

Number of Leaves : 24

Size of the tree : 47

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 487 81.3022 %

Incorrectly Classified Instances 112 18.6978 %

Kappa statistic 0.5532

Mean absolute error 0.2534

Root mean squared error 0.385

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.597 0.078 0.795 0.597 0.682 0.565 0.821 0.694 0

0.922 0.403 0.819 0.922 0.868 0.565 0.821 0.866 1

Weighted Avg. 0.813 0.294 0.811 0.813 0.805 0.565 0.821 0.808

=== Confusion Matrix ===

a b <-- classified as

120 81 | a = 0

31 367 | b = 1

## NaïveBayes Model

=== Classifier model ===

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

==========================================

pctBlack

mean 16.6775 4.7559

std. dev. 18.461 8.4149

weight sum 410 810

precision 0.1229 0.1229

medIncome

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctPubAsst

mean 9.3876 5.3268

std. dev. 5.2609 3.7398

weight sum 410 810

precision 0.056 0.056

medFamIncome

mean 32592.7223 44150.013

std. dev. 9954.894 15163.6477

weight sum 410 810

precision 107.7628 107.7628

pctPoverty

mean 17.0078 8.7312

std. dev. 8.1777 7.4395

weight sum 410 810

precision 0.0603 0.0603

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pct2Par

mean 66.2155 78.5709

std. dev. 9.4865 7.8828

weight sum 410 810

precision 0.0677 0.0677

kidsBornNevrMarr

mean 5919.5829 446.2797

std. dev. 31866.0269 1176.6982

weight sum 410 810

precision 666.9494 666.9494

pctPersOwnOccup

mean 58.4915 71.0758

std. dev. 11.2675 13.4708

weight sum 410 810

precision 0.0699 0.0699

pctPopDenseHous

mean 5.7037 3.3992

std. dev. 5.6841 5.5516

weight sum 410 810

precision 0.0943 0.0943

pctSmallHousUnits

mean 52.7817 41.5841

std. dev. 10.8605 13.4828

weight sum 410 810

precision 0.0829 0.0829

pctHousOwnerOccup

mean 56.2603 67.7035

std. dev. 11.3042 13.5429

weight sum 410 810

precision 0.0688 0.0688

pctHousWOphone

mean 6.7071 2.9217

std. dev. 4.1118 3.4473

weight sum 410 810

precision 0.0345 0.0345

persHomeless

mean 50.654 3.4186

std. dev. 546.477 42.7415

weight sum 410 810

precision 125.8675 125.8675

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 482 80.4674 %

Incorrectly Classified Instances 117 19.5326 %

Kappa statistic 0.5411

Mean absolute error 0.1909

Root mean squared error 0.4042

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.617 0.101 0.756 0.617 0.679 0.547 0.883 0.788 0

0.899 0.383 0.823 0.899 0.860 0.547 0.883 0.930 1

Weighted Avg. 0.805 0.288 0.801 0.805 0.799 0.547 0.883 0.882

=== Confusion Matrix ===

a b <-- classified as

124 77 | a = 0

40 358 | b = 1

## IBk (KNN) Model

=== Classifier model ===

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 487 81.3022 %

Incorrectly Classified Instances 112 18.6978 %

Kappa statistic 0.5817

Mean absolute error 0.2538

Root mean squared error 0.3619

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.143 0.719 0.726 0.723 0.582 0.876 0.760 0

0.857 0.274 0.861 0.857 0.859 0.582 0.876 0.919 1

Weighted Avg. 0.813 0.230 0.813 0.813 0.813 0.582 0.876 0.866

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

57 341 | b = 1

## Bagging with J48 Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.trees.J48 -C 0.25 -M 2

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 486 81.1352 %

Incorrectly Classified Instances 113 18.8648 %

Kappa statistic 0.5679

Mean absolute error 0.2432

Root mean squared error 0.3582

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.677 0.121 0.739 0.677 0.706 0.569 0.879 0.787 0

0.879 0.323 0.843 0.879 0.861 0.569 0.879 0.924 1

Weighted Avg. 0.811 0.255 0.808 0.811 0.809 0.569 0.879 0.878

=== Confusion Matrix ===

a b <-- classified as

136 65 | a = 0

48 350 | b = 1

## Bagging with NaiveBayes Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.bayes.NaiveBayes

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 485 80.9683 %

Incorrectly Classified Instances 114 19.0317 %

Kappa statistic 0.5534

Mean absolute error 0.1914

Root mean squared error 0.4002

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.627 0.098 0.764 0.627 0.689 0.559 0.883 0.790 0

0.902 0.373 0.827 0.902 0.863 0.559 0.883 0.931 1

Weighted Avg. 0.810 0.281 0.806 0.810 0.804 0.559 0.883 0.884

=== Confusion Matrix ===

a b <-- classified as

126 75 | a = 0

39 359 | b = 1

## Bagging with IBk (KNN) Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.lazy.IBk -K 10 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last\""

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 493 82.3038 %

Incorrectly Classified Instances 106 17.6962 %

Kappa statistic 0.5931

Mean absolute error 0.2538

Root mean squared error 0.3601

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.687 0.108 0.762 0.687 0.723 0.595 0.877 0.789 0

0.892 0.313 0.849 0.892 0.870 0.595 0.877 0.926 1

Weighted Avg. 0.823 0.245 0.820 0.823 0.821 0.595 0.877 0.880

=== Confusion Matrix ===

a b <-- classified as

138 63 | a = 0

43 355 | b = 1

## AdaBoostM1 with J48 Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

J48 pruned tree

------------------

pct2Par <= 75.8

| persHomeless <= 2

| | kidsBornNevrMarr <= 3248

| | | pct2Par <= 66.7

| | | | pctAllDivorc <= 14.1

| | | | | persHomeless <= 0

| | | | | | pctPopDenseHous <= 4.57

| | | | | | | pctBlack <= 34.48: 1 (42.0/13.0)

| | | | | | | pctBlack > 34.48: 0 (4.0)

| | | | | | pctPopDenseHous > 4.57

| | | | | | | medIncome <= 19193

| | | | | | | | medFamIncome <= 21753: 0 (8.0/1.0)

| | | | | | | | medFamIncome > 21753: 1 (6.0)

| | | | | | | medIncome > 19193: 0 (11.0)

| | | | | persHomeless > 0

| | | | | | pctHousWOphone <= 9.6

| | | | | | | pct2Par <= 64.25: 0 (8.0)

| | | | | | | pct2Par > 64.25: 1 (3.0/1.0)

| | | | | | pctHousWOphone > 9.6: 1 (2.0)

| | | | pctAllDivorc > 14.1: 0 (52.0/7.0)

| | | pct2Par > 66.7

| | | | pctPoverty <= 13.52

| | | | | persHomeless <= 0

| | | | | | pctHousOwnerOccup <= 63.45: 1 (76.0/11.0)

| | | | | | pctHousOwnerOccup > 63.45

| | | | | | | pct2Par <= 70.96: 0 (10.0/2.0)

| | | | | | | pct2Par > 70.96: 1 (39.0/11.0)

| | | | | persHomeless > 0

| | | | | | kidsBornNevrMarr <= 143: 0 (2.0)

| | | | | | kidsBornNevrMarr > 143: 1 (16.0)

| | | | pctPoverty > 13.52: 1 (133.0/57.0)

| | kidsBornNevrMarr > 3248: 0 (24.0/1.0)

| persHomeless > 2

| | pctAllDivorc <= 11.8

| | | medIncome <= 24325: 0 (8.0)

| | | medIncome > 24325

| | | | pct2Par <= 71.67

| | | | | pctAllDivorc <= 9.28: 1 (3.0)

| | | | | pctAllDivorc > 9.28

| | | | | | pctSmallHousUnits <= 54.47: 1 (3.0/1.0)

| | | | | | pctSmallHousUnits > 54.47: 0 (10.0)

| | | | pct2Par > 71.67

| | | | | pctPoverty <= 6.6: 0 (2.0)

| | | | | pctPoverty > 6.6: 1 (13.0)

| | pctAllDivorc > 11.8: 0 (160.0/18.0)

pct2Par > 75.8: 1 (585.0/46.0)

Number of Leaves : 24

Size of the tree : 47

Weight: 1.83

J48 pruned tree

------------------

pct2Par <= 80.59

| medIncome <= 31583

| | pctPopDenseHous <= 1.28

| | | pctBlack <= 0.05: 0 (3.61)

| | | pctBlack > 0.05

| | | | kidsBornNevrMarr <= 503: 1 (28.69)

| | | | kidsBornNevrMarr > 503

| | | | | pctPubAsst <= 10.04: 1 (3.48)

| | | | | pctPubAsst > 10.04: 0 (8.38/0.58)

| | pctPopDenseHous > 1.28

| | | pctHousOwnerOccup <= 38.71

| | | | pctSmallHousUnits <= 67.22: 1 (18.95/2.32)

| | | | pctSmallHousUnits > 67.22

| | | | | pctBlack <= 6.52: 1 (3.48/0.58)

| | | | | pctBlack > 6.52: 0 (9.41)

| | | pctHousOwnerOccup > 38.71

| | | | pctPersOwnOccup <= 54.38

| | | | | pctAllDivorc <= 9.4

| | | | | | persHomeless <= 0

| | | | | | | pctPubAsst <= 6.31: 1 (3.48)

| | | | | | | pctPubAsst > 6.31

| | | | | | | | pct2Par <= 65.23: 1 (2.32/0.58)

| | | | | | | | pct2Par > 65.23: 0 (14.44)

| | | | | | persHomeless > 0: 1 (2.32)

| | | | | pctAllDivorc > 9.4: 0 (111.6/8.13)

| | | | pctPersOwnOccup > 54.38

| | | | | pctBlack <= 41.26

| | | | | | kidsBornNevrMarr <= 210

| | | | | | | pct2Par <= 76.19

| | | | | | | | persHomeless <= 4

| | | | | | | | | medIncome <= 30031

| | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | pctPersOwnOccup <= 65.93

| | | | | | | | | | | | medIncome <= 14994: 0 (3.61)

| | | | | | | | | | | | medIncome > 14994: 1 (16.38/1.16)

| | | | | | | | | | | pctPersOwnOccup > 65.93

| | | | | | | | | | | | kidsBornNevrMarr <= 200: 0 (16.18/1.74)

| | | | | | | | | | | | kidsBornNevrMarr > 200: 1 (2.32)

| | | | | | | | | | persHomeless > 0: 0 (8.96/1.16)

| | | | | | | | | medIncome > 30031: 0 (10.83)

| | | | | | | | persHomeless > 4: 1 (3.61)

| | | | | | | pct2Par > 76.19: 1 (9.87)

| | | | | | kidsBornNevrMarr > 210

| | | | | | | pctPopDenseHous <= 3.03

| | | | | | | | pctHousWOphone <= 2.23: 1 (9.99/1.16)

| | | | | | | | pctHousWOphone > 2.23

| | | | | | | | | persHomeless <= 3

| | | | | | | | | | kidsBornNevrMarr <= 2134

| | | | | | | | | | | pctSmallHousUnits <= 43.97

| | | | | | | | | | | | pctBlack <= 1.44: 0 (3.61)

| | | | | | | | | | | | pctBlack > 1.44: 1 (6.38)

| | | | | | | | | | | pctSmallHousUnits > 43.97: 0 (127.51/22.64)

| | | | | | | | | | kidsBornNevrMarr > 2134

| | | | | | | | | | | pctBlack <= 14.49: 1 (7.8)

| | | | | | | | | | | pctBlack > 14.49: 0 (4.06/0.58)

| | | | | | | | | persHomeless > 3

| | | | | | | | | | pctPubAsst <= 7.2

| | | | | | | | | | | pctAllDivorc <= 12.69: 1 (2.32/0.58)

| | | | | | | | | | | pctAllDivorc > 12.69: 0 (6.38)

| | | | | | | | | | pctPubAsst > 7.2

| | | | | | | | | | | persHomeless <= 10: 1 (10.83)

| | | | | | | | | | | persHomeless > 10

| | | | | | | | | | | | medFamIncome <= 33892: 0 (2.32)

| | | | | | | | | | | | medFamIncome > 33892: 1 (3.61)

| | | | | | | pctPopDenseHous > 3.03

| | | | | | | | pctPubAsst <= 8.97: 0 (109.01/8.71)

| | | | | | | | pctPubAsst > 8.97

| | | | | | | | | pctPoverty <= 26.9

| | | | | | | | | | pctPopDenseHous <= 4.49

| | | | | | | | | | | pctHousOwnerOccup <= 56.64: 0 (2.32)

| | | | | | | | | | | pctHousOwnerOccup > 56.64: 1 (14.76/2.9)

| | | | | | | | | | pctPopDenseHous > 4.49

| | | | | | | | | | | pctPopDenseHous <= 10.74

| | | | | | | | | | | | kidsBornNevrMarr <= 339: 1 (2.32/0.58)

| | | | | | | | | | | | kidsBornNevrMarr > 339: 0 (22.56/1.16)

| | | | | | | | | | | pctPopDenseHous > 10.74: 1 (5.8/1.16)

| | | | | | | | | pctPoverty > 26.9: 0 (37.0/2.9)

| | | | | pctBlack > 41.26

| | | | | | medIncome <= 24906

| | | | | | | kidsBornNevrMarr <= 3379

| | | | | | | | pctHousOwnerOccup <= 60.35: 1 (8.96/1.16)

| | | | | | | | pctHousOwnerOccup > 60.35: 0 (4.06/0.58)

| | | | | | | kidsBornNevrMarr > 3379: 0 (5.22)

| | | | | | medIncome > 24906: 1 (11.41)

| medIncome > 31583

| | pctPopDenseHous <= 6.53

| | | pctBlack <= 0.69

| | | | pctPopDenseHous <= 0.88: 0 (3.61)

| | | | pctPopDenseHous > 0.88: 1 (17.99)

| | | pctBlack > 0.69

| | | | pctPubAsst <= 3.47

| | | | | pctSmallHousUnits <= 32.85: 1 (4.06)

| | | | | pctSmallHousUnits > 32.85: 0 (76.32/15.67)

| | | | pctPubAsst > 3.47

| | | | | pctPopDenseHous <= 1.32: 1 (8.83)

| | | | | pctPopDenseHous > 1.32

| | | | | | pctPoverty <= 4.91: 1 (5.8)

| | | | | | pctPoverty > 4.91

| | | | | | | pctPersOwnOccup <= 70

| | | | | | | | pct2Par <= 67.85: 0 (7.67)

| | | | | | | | pct2Par > 67.85

| | | | | | | | | pctPersOwnOccup <= 65.64

| | | | | | | | | | pctHousWOphone <= 1.93

| | | | | | | | | | | medFamIncome <= 42470: 1 (3.48/0.58)

| | | | | | | | | | | medFamIncome > 42470

| | | | | | | | | | | | medIncome <= 42186: 0 (14.31/0.58)

| | | | | | | | | | | | medIncome > 42186: 1 (2.32/0.58)

| | | | | | | | | | pctHousWOphone > 1.93

| | | | | | | | | | | persHomeless <= 18: 1 (14.06/0.58)

| | | | | | | | | | | persHomeless > 18: 0 (2.9)

| | | | | | | | | pctPersOwnOccup > 65.64: 1 (11.03)

| | | | | | | pctPersOwnOccup > 70

| | | | | | | | pctPoverty <= 6.33: 0 (19.79/1.16)

| | | | | | | | pctPoverty > 6.33

| | | | | | | | | pctAllDivorc <= 11.04: 1 (4.64)

| | | | | | | | | pctAllDivorc > 11.04

| | | | | | | | | | pctHousWOphone <= 2.83: 1 (2.9/0.58)

| | | | | | | | | | pctHousWOphone > 2.83: 0 (11.41)

| | pctPopDenseHous > 6.53

| | | medIncome <= 41096

| | | | kidsBornNevrMarr <= 2858: 1 (31.98/0.58)

| | | | kidsBornNevrMarr > 2858

| | | | | pctAllDivorc <= 11.92: 1 (3.48)

| | | | | pctAllDivorc > 11.92: 0 (3.48/0.58)

| | | medIncome > 41096

| | | | medIncome <= 42453: 0 (8.96/0.58)

| | | | medIncome > 42453: 1 (8.25)

pct2Par > 80.59

| pctBlack <= 7.32

| | pctPersOwnOccup <= 91.07

| | | pctHousWOphone <= 1.24: 1 (141.62)

| | | pctHousWOphone > 1.24

| | | | pctHousWOphone <= 1.3: 0 (10.83)

| | | | pctHousWOphone > 1.3

| | | | | pctAllDivorc <= 10.85: 1 (33.08)

| | | | | pctAllDivorc > 10.85

| | | | | | pctBlack <= 0.84: 0 (3.61)

| | | | | | pctBlack > 0.84: 1 (2.32)

| | pctPersOwnOccup > 91.07

| | | pctBlack <= 0.84

| | | | kidsBornNevrMarr <= 86

| | | | | kidsBornNevrMarr <= 17: 0 (8.38/1.16)

| | | | | kidsBornNevrMarr > 17: 1 (9.87)

| | | | kidsBornNevrMarr > 86: 0 (15.02/0.58)

| | | pctBlack > 0.84: 1 (11.03)

| pctBlack > 7.32

| | pctHousOwnerOccup <= 72.12: 1 (4.06)

| | pctHousOwnerOccup > 72.12

| | | pctPoverty <= 2.73: 1 (2.32)

| | | pctPoverty > 2.73: 0 (20.37/2.32)

Number of Leaves : 76

Size of the tree : 151

Weight: 2.58

J48 pruned tree

------------------

pctPopDenseHous <= 2.76

| kidsBornNevrMarr <= 1506

| | persHomeless <= 1

| | | pctPubAsst <= 5.5

| | | | pctBlack <= 15.02

| | | | | pctSmallHousUnits <= 50.51

| | | | | | persHomeless <= 0

| | | | | | | pct2Par <= 73.85

| | | | | | | | medIncome <= 25168: 1 (4.43)

| | | | | | | | medIncome > 25168: 0 (8.39/0.62)

| | | | | | | pct2Par > 73.85: 1 (234.14/34.95)

| | | | | | persHomeless > 0

| | | | | | | pctHousOwnerOccup <= 72.34: 1 (9.49)

| | | | | | | pctHousOwnerOccup > 72.34: 0 (4.82/0.94)

| | | | | pctSmallHousUnits > 50.51: 1 (57.2/0.31)

| | | | pctBlack > 15.02

| | | | | pctPopDenseHous <= 1.56: 0 (8.39/0.62)

| | | | | pctPopDenseHous > 1.56

| | | | | | pctPopDenseHous <= 2.33: 1 (7.62)

| | | | | | pctPopDenseHous > 2.33: 0 (2.88/0.62)

| | | pctPubAsst > 5.5

| | | | kidsBornNevrMarr <= 880

| | | | | persHomeless <= 0

| | | | | | pctPersOwnOccup <= 79.07

| | | | | | | pctBlack <= 2.39

| | | | | | | | kidsBornNevrMarr <= 137: 1 (8.49)

| | | | | | | | kidsBornNevrMarr > 137

| | | | | | | | | pctPoverty <= 8.21

| | | | | | | | | | kidsBornNevrMarr <= 189: 0 (2.25/0.31)

| | | | | | | | | | kidsBornNevrMarr > 189: 1 (8.25)

| | | | | | | | | pctPoverty > 8.21

| | | | | | | | | | pctAllDivorc <= 12.26: 0 (36.99/3.75)

| | | | | | | | | | pctAllDivorc > 12.26

| | | | | | | | | | | pctSmallHousUnits <= 55.12: 1 (10.43/0.62)

| | | | | | | | | | | pctSmallHousUnits > 55.12: 0 (6.45)

| | | | | | | pctBlack > 2.39

| | | | | | | | pctAllDivorc <= 11.48: 1 (32.29)

| | | | | | | | pctAllDivorc > 11.48

| | | | | | | | | pctBlack <= 10.04

| | | | | | | | | | medFamIncome <= 35039

| | | | | | | | | | | pctSmallHousUnits <= 49.98: 1 (29.48)

| | | | | | | | | | | pctSmallHousUnits > 49.98

| | | | | | | | | | | | pctPersOwnOccup <= 69.57: 1 (5.99/0.94)

| | | | | | | | | | | | pctPersOwnOccup > 69.57: 0 (4.2)

| | | | | | | | | | medFamIncome > 35039: 0 (7.07/0.94)

| | | | | | | | | pctBlack > 10.04: 0 (13.21/1.25)

| | | | | | pctPersOwnOccup > 79.07: 1 (13.86)

| | | | | persHomeless > 0

| | | | | | pctPopDenseHous <= 1.85: 1 (13.3)

| | | | | | pctPopDenseHous > 1.85: 0 (2.25)

| | | | kidsBornNevrMarr > 880: 1 (37.41/1.25)

| | persHomeless > 1

| | | medFamIncome <= 65070

| | | | pct2Par <= 72.73

| | | | | persHomeless <= 5: 0 (5.76/0.31)

| | | | | persHomeless > 5

| | | | | | pctSmallHousUnits <= 51.94: 1 (7.77)

| | | | | | pctSmallHousUnits > 51.94

| | | | | | | pctBlack <= 10.72: 0 (2.19)

| | | | | | | pctBlack > 10.72: 1 (2.25/0.31)

| | | | pct2Par > 72.73: 1 (13.55)

| | | medFamIncome > 65070: 0 (4.51)

| kidsBornNevrMarr > 1506

| | pctPopDenseHous <= 2.13

| | | pctHousWOphone <= 5.29: 0 (3.19)

| | | pctHousWOphone > 5.29: 1 (11.19/0.94)

| | pctPopDenseHous > 2.13: 0 (15.88/0.94)

pctPopDenseHous > 2.76

| kidsBornNevrMarr <= 3482

| | pctPoverty <= 5.5

| | | pctPoverty <= 4.25

| | | | pctPoverty <= 3.54: 1 (4.99)

| | | | pctPoverty > 3.54

| | | | | pctSmallHousUnits <= 43.15

| | | | | | pctBlack <= 7.24: 1 (2.19)

| | | | | | pctBlack > 7.24: 0 (2.25/0.31)

| | | | | pctSmallHousUnits > 43.15: 0 (3.88)

| | | pctPoverty > 4.25: 1 (27.79/0.62)

| | pctPoverty > 5.5

| | | pctAllDivorc <= 15.04

| | | | pctBlack <= 11.17

| | | | | pctPopDenseHous <= 2.85: 0 (14.69/0.62)

| | | | | pctPopDenseHous > 2.85

| | | | | | pctPopDenseHous <= 3.15: 1 (24.04)

| | | | | | pctPopDenseHous > 3.15

| | | | | | | pctPersOwnOccup <= 52.72

| | | | | | | | pctPubAsst <= 17.81: 1 (42.1/1.87)

| | | | | | | | pctPubAsst > 17.81: 0 (2.57)

| | | | | | | pctPersOwnOccup > 52.72

| | | | | | | | pctHousOwnerOccup <= 54.64: 0 (22.85/0.94)

| | | | | | | | pctHousOwnerOccup > 54.64

| | | | | | | | | pctSmallHousUnits <= 52.64

| | | | | | | | | | pctAllDivorc <= 10.48: 1 (30.97/0.31)

| | | | | | | | | | pctAllDivorc > 10.48

| | | | | | | | | | | pctHousOwnerOccup <= 57.71: 1 (15.87/0.62)

| | | | | | | | | | | pctHousOwnerOccup > 57.71

| | | | | | | | | | | | pctPersOwnOccup <= 59.89: 0 (6.69/0.31)

| | | | | | | | | | | | pctPersOwnOccup > 59.89

| | | | | | | | | | | | | pctAllDivorc <= 13.64

| | | | | | | | | | | | | | pctPubAsst <= 7.45

| | | | | | | | | | | | | | | pct2Par <= 77.69

| | | | | | | | | | | | | | | | pctSmallHousUnits <= 46.59

| | | | | | | | | | | | | | | | | pctPopDenseHous <= 6.68: 1 (23.8/0.31)

| | | | | | | | | | | | | | | | | pctPopDenseHous > 6.68: 0 (2.57/0.62)

| | | | | | | | | | | | | | | | pctSmallHousUnits > 46.59: 0 (3.5/0.62)

| | | | | | | | | | | | | | | pct2Par > 77.69: 0 (7.7/1.87)

| | | | | | | | | | | | | | pctPubAsst > 7.45

| | | | | | | | | | | | | | | pctHousOwnerOccup <= 59.43: 1 (4.43)

| | | | | | | | | | | | | | | pctHousOwnerOccup > 59.43: 0 (20.14/2.19)

| | | | | | | | | | | | | pctAllDivorc > 13.64: 1 (11.75/0.31)

| | | | | | | | | pctSmallHousUnits > 52.64

| | | | | | | | | | persHomeless <= 41

| | | | | | | | | | | pctPubAsst <= 22.23: 0 (36.92/5.69)

| | | | | | | | | | | pctPubAsst > 22.23: 1 (4.43)

| | | | | | | | | | persHomeless > 41: 1 (4.75/0.31)

| | | | pctBlack > 11.17

| | | | | pctHousWOphone <= 8.37

| | | | | | pctPubAsst <= 11.27: 0 (56.6/3.75)

| | | | | | pctPubAsst > 11.27: 1 (4.82/0.62)

| | | | | pctHousWOphone > 8.37

| | | | | | pctBlack <= 54.99

| | | | | | | pct2Par <= 71.5

| | | | | | | | pctPubAsst <= 12.38

| | | | | | | | | pctPubAsst <= 7.33: 1 (8.87/0.62)

| | | | | | | | | pctPubAsst > 7.33

| | | | | | | | | | medFamIncome <= 25788

| | | | | | | | | | | pctSmallHousUnits <= 53.78: 1 (5.06)

| | | | | | | | | | | pctSmallHousUnits > 53.78: 0 (3.5)

| | | | | | | | | | medFamIncome > 25788: 0 (25.27/0.94)

| | | | | | | | pctPubAsst > 12.38

| | | | | | | | | pctPubAsst <= 17.03: 1 (24.81/2.5)

| | | | | | | | | pctPubAsst > 17.03: 0 (3.81/0.94)

| | | | | | | pct2Par > 71.5: 1 (17.42/0.31)

| | | | | | pctBlack > 54.99: 0 (9.18)

| | | pctAllDivorc > 15.04

| | | | pctAllDivorc <= 15.65: 0 (21.69)

| | | | pctAllDivorc > 15.65

| | | | | pct2Par <= 69.13

| | | | | | kidsBornNevrMarr <= 453: 0 (16.18)

| | | | | | kidsBornNevrMarr > 453

| | | | | | | persHomeless <= 1: 1 (7.7/1.56)

| | | | | | | persHomeless > 1: 0 (4.06)

| | | | | pct2Par > 69.13: 1 (6.06)

| kidsBornNevrMarr > 3482

| | pctHousOwnerOccup <= 60.04: 0 (44.09/2.57)

| | pctHousOwnerOccup > 60.04: 1 (4.44/0.94)

Number of Leaves : 74

Size of the tree : 147

Weight: 2.63

J48 pruned tree

------------------

pctAllDivorc <= 4.6

| pctAllDivorc <= 4.28: 1 (2.34)

| pctAllDivorc > 4.28: 0 (43.88/0.5)

pctAllDivorc > 4.6

| pctPoverty <= 2.84: 1 (29.2)

| pctPoverty > 2.84

| | pctPoverty <= 3.72

| | | persHomeless <= 0

| | | | medFamIncome <= 45435: 1 (7.43)

| | | | medFamIncome > 45435

| | | | | medIncome <= 41435: 0 (72.96/0.67)

| | | | | medIncome > 41435

| | | | | | medFamIncome <= 52913: 1 (5.39)

| | | | | | medFamIncome > 52913

| | | | | | | pctPopDenseHous <= 1.2: 1 (3.18)

| | | | | | | pctPopDenseHous > 1.2

| | | | | | | | pctAllDivorc <= 8.89: 0 (45.08/0.67)

| | | | | | | | pctAllDivorc > 8.89: 1 (2.88/1.04)

| | | persHomeless > 0: 1 (10.02)

| | pctPoverty > 3.72

| | | kidsBornNevrMarr <= 46

| | | | pctHousOwnerOccup <= 68.95: 0 (30.12/0.17)

| | | | pctHousOwnerOccup > 68.95: 1 (2.18)

| | | kidsBornNevrMarr > 46

| | | | pctAllDivorc <= 14.1

| | | | | pctPopDenseHous <= 0.83

| | | | | | pctAllDivorc <= 8.99: 1 (8.88)

| | | | | | pctAllDivorc > 8.99

| | | | | | | pctPoverty <= 5: 1 (2.54)

| | | | | | | pctPoverty > 5: 0 (31.67/0.67)

| | | | | pctPopDenseHous > 0.83

| | | | | | pctPersOwnOccup <= 80.58

| | | | | | | pct2Par <= 75.8

| | | | | | | | persHomeless <= 2

| | | | | | | | | pctBlack <= 33.74

| | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | kidsBornNevrMarr <= 256

| | | | | | | | | | | | pctSmallHousUnits <= 54.02

| | | | | | | | | | | | | pctPoverty <= 16.03

| | | | | | | | | | | | | | pctPoverty <= 14.51: 1 (39.18/2.08)

| | | | | | | | | | | | | | pctPoverty > 14.51: 0 (4.33/0.17)

| | | | | | | | | | | | | pctPoverty > 16.03: 1 (32.17)

| | | | | | | | | | | | pctSmallHousUnits > 54.02

| | | | | | | | | | | | | pctSmallHousUnits <= 56.13: 0 (4.33/0.17)

| | | | | | | | | | | | | pctSmallHousUnits > 56.13: 1 (5.96/1.04)

| | | | | | | | | | | kidsBornNevrMarr > 256

| | | | | | | | | | | | pctPopDenseHous <= 3.16: 1 (135.3/31.92)

| | | | | | | | | | | | pctPopDenseHous > 3.16

| | | | | | | | | | | | | medFamIncome <= 36515

| | | | | | | | | | | | | | pctBlack <= 30.92

| | | | | | | | | | | | | | | pctPersOwnOccup <= 66.7

| | | | | | | | | | | | | | | | pct2Par <= 61.66: 0 (7.73/0.17)

| | | | | | | | | | | | | | | | pct2Par > 61.66

| | | | | | | | | | | | | | | | | pctHousWOphone <= 14.59

| | | | | | | | | | | | | | | | | | kidsBornNevrMarr <= 527: 0 (10.2/0.67)

| | | | | | | | | | | | | | | | | | kidsBornNevrMarr > 527

| | | | | | | | | | | | | | | | | | | pctPopDenseHous <= 23.46

| | | | | | | | | | | | | | | | | | | | medFamIncome <= 26344: 1 (14.05/0.33)

| | | | | | | | | | | | | | | | | | | | medFamIncome > 26344

| | | | | | | | | | | | | | | | | | | | | medIncome <= 30151

| | | | | | | | | | | | | | | | | | | | | | pctBlack <= 4.86: 0 (7.28)

| | | | | | | | | | | | | | | | | | | | | | pctBlack > 4.86

| | | | | | | | | | | | | | | | | | | | | | | pctSmallHousUnits <= 53.9: 1 (10.16/1.04)

| | | | | | | | | | | | | | | | | | | | | | | pctSmallHousUnits > 53.9: 0 (3.42)

| | | | | | | | | | | | | | | | | | | | | medIncome > 30151: 1 (4.7)

| | | | | | | | | | | | | | | | | | | pctPopDenseHous > 23.46: 0 (5.5/0.17)

| | | | | | | | | | | | | | | | | pctHousWOphone > 14.59: 1 (9.29/0.17)

| | | | | | | | | | | | | | | pctPersOwnOccup > 66.7: 0 (10.78)

| | | | | | | | | | | | | | pctBlack > 30.92: 1 (6.74)

| | | | | | | | | | | | | medFamIncome > 36515: 1 (25.18/1.21)

| | | | | | | | | | persHomeless > 0

| | | | | | | | | | | pctHousWOphone <= 4.46: 1 (13.23/0.17)

| | | | | | | | | | | pctHousWOphone > 4.46

| | | | | | | | | | | | pctHousWOphone <= 8.41

| | | | | | | | | | | | | pctPopDenseHous <= 9.95: 0 (9.46/0.17)

| | | | | | | | | | | | | pctPopDenseHous > 9.95: 1 (2.54)

| | | | | | | | | | | | pctHousWOphone > 8.41: 1 (5.96/1.04)

| | | | | | | | | pctBlack > 33.74

| | | | | | | | | | pctPubAsst <= 16.52

| | | | | | | | | | | pctPersOwnOccup <= 59.89: 0 (23.71)

| | | | | | | | | | | pctPersOwnOccup > 59.89

| | | | | | | | | | | | pctHousOwnerOccup <= 63.52: 1 (4.87)

| | | | | | | | | | | | pctHousOwnerOccup > 63.52: 0 (2.42)

| | | | | | | | | | pctPubAsst > 16.52: 1 (5.2/0.5)

| | | | | | | | persHomeless > 2

| | | | | | | | | pctPopDenseHous <= 29.63

| | | | | | | | | | pctPoverty <= 14.03

| | | | | | | | | | | pctPoverty <= 6.89: 0 (7.48)

| | | | | | | | | | | pctPoverty > 6.89: 1 (30.39/7.72)

| | | | | | | | | | pctPoverty > 14.03

| | | | | | | | | | | pctPersOwnOccup <= 64.77: 0 (46.11/2.42)

| | | | | | | | | | | pctPersOwnOccup > 64.77: 1 (3.62/0.33)

| | | | | | | | | pctPopDenseHous > 29.63: 1 (15.13)

| | | | | | | pct2Par > 75.8: 1 (188.92/19.77)

| | | | | | pctPersOwnOccup > 80.58

| | | | | | | pctPubAsst <= 5.9

| | | | | | | | pctPoverty <= 4.92: 1 (12.84/1.04)

| | | | | | | | pctPoverty > 4.92

| | | | | | | | | pctAllDivorc <= 9.06: 1 (3.21)

| | | | | | | | | pctAllDivorc > 9.06: 0 (48.54/0.84)

| | | | | | | pctPubAsst > 5.9: 1 (8.47)

| | | | pctAllDivorc > 14.1

| | | | | pct2Par <= 66.58: 0 (83.17/8.32)

| | | | | pct2Par > 66.58

| | | | | | pctBlack <= 11.65

| | | | | | | persHomeless <= 0

| | | | | | | | pctSmallHousUnits <= 50.64

| | | | | | | | | medIncome <= 21174: 1 (2.38)

| | | | | | | | | medIncome > 21174: 0 (9.31/0.5)

| | | | | | | | pctSmallHousUnits > 50.64

| | | | | | | | | medIncome <= 23318: 0 (2.08)

| | | | | | | | | medIncome > 23318

| | | | | | | | | | pctSmallHousUnits <= 55.81: 1 (15.91)

| | | | | | | | | | pctSmallHousUnits > 55.81

| | | | | | | | | | | pctBlack <= 1.97: 0 (2.08)

| | | | | | | | | | | pctBlack > 1.97: 1 (3.75)

| | | | | | | persHomeless > 0

| | | | | | | | pctPersOwnOccup <= 63.12

| | | | | | | | | medIncome <= 21392: 1 (2.21)

| | | | | | | | | medIncome > 21392

| | | | | | | | | | pctPopDenseHous <= 8.65: 0 (16.91)

| | | | | | | | | | pctPopDenseHous > 8.65: 1 (2.42/0.33)

| | | | | | | | pctPersOwnOccup > 63.12: 1 (4.46)

| | | | | | pctBlack > 11.65: 0 (9.15)

Number of Leaves : 63

Size of the tree : 125

Weight: 2.58

J48 pruned tree

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pctPoverty <= 25.32

| kidsBornNevrMarr <= 265

| | pctPubAsst <= 3.67

| | | pctHousOwnerOccup <= 61.47

| | | | pctAllDivorc <= 14.68: 1 (16.14/0.74)

| | | | pctAllDivorc > 14.68: 0 (2.46)

| | | pctHousOwnerOccup > 61.47

| | | | kidsBornNevrMarr <= 157

| | | | | pct2Par <= 80.6: 0 (64.85/3.43)

| | | | | pct2Par > 80.6

| | | | | | pctBlack <= 0.83

| | | | | | | pct2Par <= 85.76: 1 (6.14)

| | | | | | | pct2Par > 85.76

| | | | | | | | pctPoverty <= 2.15: 1 (3.35)

| | | | | | | | pctPoverty > 2.15

| | | | | | | | | kidsBornNevrMarr <= 83

| | | | | | | | | | pctPersOwnOccup <= 94.08: 1 (4.45)

| | | | | | | | | | pctPersOwnOccup > 94.08: 0 (15.73/0.18)

| | | | | | | | | kidsBornNevrMarr > 83: 0 (39.16/0.27)

| | | | | | pctBlack > 0.83: 1 (14.54/0.56)

| | | | kidsBornNevrMarr > 157

| | | | | pctPoverty <= 5.81: 1 (14.35)

| | | | | pctPoverty > 5.81: 0 (9.08/0.09)

| | pctPubAsst > 3.67

| | | pctPopDenseHous <= 1.33: 1 (32.83/0.56)

| | | pctPopDenseHous > 1.33

| | | | pctHousOwnerOccup <= 69

| | | | | pctBlack <= 0.25: 1 (7.03)

| | | | | pctBlack > 0.25

| | | | | | pctPersOwnOccup <= 70.2

| | | | | | | pctHousOwnerOccup <= 61.78

| | | | | | | | kidsBornNevrMarr <= 170

| | | | | | | | | pctAllDivorc <= 15.12: 1 (8.78/0.56)

| | | | | | | | | pctAllDivorc > 15.12: 0 (2.38)

| | | | | | | | kidsBornNevrMarr > 170: 0 (29.8/2.09)

| | | | | | | pctHousOwnerOccup > 61.78: 1 (23.88/5.2)

| | | | | | pctPersOwnOccup > 70.2: 0 (15.5/0.18)

| | | | pctHousOwnerOccup > 69: 1 (17.05/0.56)

| kidsBornNevrMarr > 265

| | pctAllDivorc <= 14.82

| | | pctSmallHousUnits <= 40.9

| | | | medFamIncome <= 32883: 1 (13.72)

| | | | medFamIncome > 32883

| | | | | pctBlack <= 4.08: 1 (13.82/1.12)

| | | | | pctBlack > 4.08

| | | | | | persHomeless <= 1

| | | | | | | kidsBornNevrMarr <= 502

| | | | | | | | pct2Par <= 78.15: 0 (23.1)

| | | | | | | | pct2Par > 78.15

| | | | | | | | | medFamIncome <= 59336: 1 (5.24)

| | | | | | | | | medFamIncome > 59336: 0 (15.16)

| | | | | | | kidsBornNevrMarr > 502

| | | | | | | | pctAllDivorc <= 11.35: 1 (13.02/0.56)

| | | | | | | | pctAllDivorc > 11.35

| | | | | | | | | pctHousOwnerOccup <= 63.55: 1 (2.44)

| | | | | | | | | pctHousOwnerOccup > 63.55: 0 (8.84/0.18)

| | | | | | persHomeless > 1: 0 (7.56)

| | | pctSmallHousUnits > 40.9

| | | | pctPopDenseHous <= 14.13

| | | | | pctHousOwnerOccup <= 46.98

| | | | | | pct2Par <= 65.5: 0 (21.51/3.18)

| | | | | | pct2Par > 65.5: 1 (15.65/1.39)

| | | | | pctHousOwnerOccup > 46.98

| | | | | | pct2Par <= 62.29: 0 (43.86/1.19)

| | | | | | pct2Par > 62.29

| | | | | | | pctBlack <= 2.98

| | | | | | | | pctBlack <= 2.45

| | | | | | | | | kidsBornNevrMarr <= 692

| | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | pctBlack <= 0.34: 0 (30.82/0.18)

| | | | | | | | | | | pctBlack > 0.34

| | | | | | | | | | | | kidsBornNevrMarr <= 616

| | | | | | | | | | | | | pctBlack <= 1.19

| | | | | | | | | | | | | | pctHousOwnerOccup <= 61.12: 1 (7.7)

| | | | | | | | | | | | | | pctHousOwnerOccup > 61.12

| | | | | | | | | | | | | | | pctHousOwnerOccup <= 64.56: 0 (30.8/1.19)

| | | | | | | | | | | | | | | pctHousOwnerOccup > 64.56: 1 (6.67)

| | | | | | | | | | | | | pctBlack > 1.19

| | | | | | | | | | | | | | pctSmallHousUnits <= 48.46

| | | | | | | | | | | | | | | pctBlack <= 1.76: 0 (17.69/1.28)

| | | | | | | | | | | | | | | pctBlack > 1.76: 1 (2.68)

| | | | | | | | | | | | | | pctSmallHousUnits > 48.46: 0 (38.08/0.27)

| | | | | | | | | | | | kidsBornNevrMarr > 616: 0 (22.14)

| | | | | | | | | | persHomeless > 0

| | | | | | | | | | | pctBlack <= 0.97: 0 (11.48/1.64)

| | | | | | | | | | | pctBlack > 0.97: 1 (4.02/0.09)

| | | | | | | | | kidsBornNevrMarr > 692

| | | | | | | | | | pctPersOwnOccup <= 58.51

| | | | | | | | | | | persHomeless <= 2

| | | | | | | | | | | | medFamIncome <= 31856: 0 (8.5)

| | | | | | | | | | | | medFamIncome > 31856: 1 (4.25/0.56)

| | | | | | | | | | | persHomeless > 2: 0 (12.4/0.09)

| | | | | | | | | | pctPersOwnOccup > 58.51: 1 (14.45/1.43)

| | | | | | | | pctBlack > 2.45: 0 (58.67/1.79)

| | | | | | | pctBlack > 2.98

| | | | | | | | pctBlack <= 11.17

| | | | | | | | | pctSmallHousUnits <= 54.57

| | | | | | | | | | pctAllDivorc <= 11.26: 1 (10.47/0.09)

| | | | | | | | | | pctAllDivorc > 11.26

| | | | | | | | | | | medFamIncome <= 39639

| | | | | | | | | | | | kidsBornNevrMarr <= 2909

| | | | | | | | | | | | | pctSmallHousUnits <= 53.12: 1 (37.19/8.01)

| | | | | | | | | | | | | pctSmallHousUnits > 53.12: 0 (2.87)

| | | | | | | | | | | | kidsBornNevrMarr > 2909: 0 (6.12)

| | | | | | | | | | | medFamIncome > 39639: 0 (18.65/0.18)

| | | | | | | | | pctSmallHousUnits > 54.57

| | | | | | | | | | pctBlack <= 5.64: 1 (3.38/0.09)

| | | | | | | | | | pctBlack > 5.64

| | | | | | | | | | | pctBlack <= 7.63: 0 (18.38)

| | | | | | | | | | | pctBlack > 7.63

| | | | | | | | | | | | pctAllDivorc <= 12.48: 1 (3.81)

| | | | | | | | | | | | pctAllDivorc > 12.48: 0 (11.5/0.56)

| | | | | | | | pctBlack > 11.17

| | | | | | | | | pctPopDenseHous <= 5.84

| | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | pctHousOwnerOccup <= 68.44

| | | | | | | | | | | | pct2Par <= 64.36: 1 (5.62/1.34)

| | | | | | | | | | | | pct2Par > 64.36

| | | | | | | | | | | | | medFamIncome <= 32055: 0 (64.93/1.19)

| | | | | | | | | | | | | medFamIncome > 32055

| | | | | | | | | | | | | | pctPersOwnOccup <= 64.73: 1 (5.3/0.18)

| | | | | | | | | | | | | | pctPersOwnOccup > 64.73: 0 (8.93/0.27)

| | | | | | | | | | | pctHousOwnerOccup > 68.44: 1 (4.77/0.56)

| | | | | | | | | | persHomeless > 1: 0 (30.36)

| | | | | | | | | pctPopDenseHous > 5.84

| | | | | | | | | | pctAllDivorc <= 12.72: 1 (8.52/0.56)

| | | | | | | | | | pctAllDivorc > 12.72: 0 (2.53)

| | | | pctPopDenseHous > 14.13

| | | | | pctSmallHousUnits <= 46.9: 0 (7.65/0.27)

| | | | | pctSmallHousUnits > 46.9

| | | | | | pct2Par <= 73.89

| | | | | | | persHomeless <= 5

| | | | | | | | pctHousOwnerOccup <= 55.9

| | | | | | | | | pctPubAsst <= 13.72: 1 (2.65)

| | | | | | | | | pctPubAsst > 13.72: 0 (4.05)

| | | | | | | | pctHousOwnerOccup > 55.9: 1 (5.15)

| | | | | | | persHomeless > 5: 0 (4.32/0.18)

| | | | | | pct2Par > 73.89: 1 (8.87)

| | pctAllDivorc > 14.82

| | | pctPubAsst <= 11.35

| | | | pct2Par <= 62.76

| | | | | pctPersOwnOccup <= 54.04: 0 (2.24)

| | | | | pctPersOwnOccup > 54.04: 1 (30.15/0.63)

| | | | pct2Par > 62.76

| | | | | persHomeless <= 0

| | | | | | pctPersOwnOccup <= 58.38: 1 (6.23/0.83)

| | | | | | pctPersOwnOccup > 58.38: 0 (3.49)

| | | | | persHomeless > 0: 0 (8.74/0.56)

| | | pctPubAsst > 11.35: 0 (7.69)

pctPoverty > 25.32

| pctBlack <= 54.83

| | pctHousWOphone <= 3.22: 0 (8.57/0.63)

| | pctHousWOphone > 3.22

| | | medFamIncome <= 21900

| | | | kidsBornNevrMarr <= 489: 1 (13.71/1.12)

| | | | kidsBornNevrMarr > 489: 0 (15.38/1.19)

| | | medFamIncome > 21900: 1 (58.36/7.05)

| pctBlack > 54.83: 0 (7.64)

Number of Leaves : 80

Size of the tree : 159

Weight: 3.03

J48 pruned tree

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pctHousOwnerOccup <= 39.98

| pctSmallHousUnits <= 66.9

| | pctPoverty <= 10.91: 0 (3.52/1.29)

| | pctPoverty > 10.91: 1 (49.56/1.87)

| pctSmallHousUnits > 66.9

| | pctBlack <= 4.8: 1 (4.42/0.72)

| | pctBlack > 4.8: 0 (9.53/0.39)

pctHousOwnerOccup > 39.98

| pct2Par <= 76.86

| | persHomeless <= 66

| | | pct2Par <= 53.66

| | | | kidsBornNevrMarr <= 985: 1 (22.31/0.98)

| | | | kidsBornNevrMarr > 985: 0 (10.83/1.28)

| | | pct2Par > 53.66

| | | | kidsBornNevrMarr <= 256

| | | | | pctBlack <= 16.27

| | | | | | pctPersOwnOccup <= 71.96

| | | | | | | pctSmallHousUnits <= 54.02

| | | | | | | | pctPoverty <= 15.5

| | | | | | | | | medIncome <= 33969

| | | | | | | | | | pctBlack <= 0.48: 1 (2.71)

| | | | | | | | | | pctBlack > 0.48

| | | | | | | | | | | pct2Par <= 73.31

| | | | | | | | | | | | pct2Par <= 71: 0 (11.63/1.37)

| | | | | | | | | | | | pct2Par > 71: 1 (3.58)

| | | | | | | | | | | pct2Par > 73.31: 0 (27.84/0.91)

| | | | | | | | | medIncome > 33969: 1 (5.47)

| | | | | | | | pctPoverty > 15.5: 1 (16.82/0.92)

| | | | | | | pctSmallHousUnits > 54.02

| | | | | | | | pctPoverty <= 9.85: 0 (21.48)

| | | | | | | | pctPoverty > 9.85

| | | | | | | | | medIncome <= 22053: 0 (19.89/1.28)

| | | | | | | | | medIncome > 22053: 1 (3.38/0.09)

| | | | | | pctPersOwnOccup > 71.96: 1 (8.66/0.05)

| | | | | pctBlack > 16.27: 1 (14.3/0.29)

| | | | kidsBornNevrMarr > 256

| | | | | pctSmallHousUnits <= 56.26

| | | | | | pctPubAsst <= 12.54

| | | | | | | medIncome <= 21183

| | | | | | | | pctHousWOphone <= 8.42

| | | | | | | | | pctBlack <= 4.2: 1 (2.86/0.29)

| | | | | | | | | pctBlack > 4.2: 0 (12.65/0.7)

| | | | | | | | pctHousWOphone > 8.42: 1 (15.53/2.97)

| | | | | | | medIncome > 21183

| | | | | | | | medFamIncome <= 31856: 0 (168.41/14.83)

| | | | | | | | medFamIncome > 31856

| | | | | | | | | medIncome <= 28183

| | | | | | | | | | pctBlack <= 0.36: 0 (7.74)

| | | | | | | | | | pctBlack > 0.36

| | | | | | | | | | | persHomeless <= 6: 1 (15.56/1.32)

| | | | | | | | | | | persHomeless > 6: 0 (4.22/0.67)

| | | | | | | | | medIncome > 28183

| | | | | | | | | | pctPubAsst <= 6.11

| | | | | | | | | | | pctHousWOphone <= 2

| | | | | | | | | | | | pctHousOwnerOccup <= 76.38

| | | | | | | | | | | | | pctAllDivorc <= 11.27: 0 (25.88/0.67)

| | | | | | | | | | | | | pctAllDivorc > 11.27

| | | | | | | | | | | | | | pctPopDenseHous <= 2.96: 1 (2.65)

| | | | | | | | | | | | | | pctPopDenseHous > 2.96: 0 (5.15)

| | | | | | | | | | | | pctHousOwnerOccup > 76.38: 1 (2.03/0.05)

| | | | | | | | | | | pctHousWOphone > 2

| | | | | | | | | | | | pct2Par <= 69.09: 0 (4.54)

| | | | | | | | | | | | pct2Par > 69.09

| | | | | | | | | | | | | kidsBornNevrMarr <= 1366: 1 (16.18/0.29)

| | | | | | | | | | | | | kidsBornNevrMarr > 1366: 0 (3.55/0.09)

| | | | | | | | | | pctPubAsst > 6.11

| | | | | | | | | | | medIncome <= 31617: 0 (65.41/0.96)

| | | | | | | | | | | medIncome > 31617

| | | | | | | | | | | | medIncome <= 41028

| | | | | | | | | | | | | pctAllDivorc <= 11.96: 1 (6.18/0.05)

| | | | | | | | | | | | | pctAllDivorc > 11.96

| | | | | | | | | | | | | | pct2Par <= 73.18: 0 (7.66/0.59)

| | | | | | | | | | | | | | pct2Par > 73.18: 1 (3.54/0.62)

| | | | | | | | | | | | medIncome > 41028: 0 (33.54/0.66)

| | | | | | pctPubAsst > 12.54

| | | | | | | pctAllDivorc <= 12.56

| | | | | | | | medFamIncome <= 26238

| | | | | | | | | pctPoverty <= 30.75: 1 (5.09)

| | | | | | | | | pctPoverty > 30.75: 0 (2.6)

| | | | | | | | medFamIncome > 26238: 0 (26.7/1.06)

| | | | | | | pctAllDivorc > 12.56: 0 (82.51/1.29)

| | | | | pctSmallHousUnits > 56.26

| | | | | | pctAllDivorc <= 15.03

| | | | | | | pctPubAsst <= 3.05: 0 (9.96)

| | | | | | | pctPubAsst > 3.05

| | | | | | | | pctPoverty <= 14.7

| | | | | | | | | persHomeless <= 4: 1 (29.64/0.72)

| | | | | | | | | persHomeless > 4

| | | | | | | | | | pctPubAsst <= 7.79: 0 (3.77)

| | | | | | | | | | pctPubAsst > 7.79: 1 (6.39/1.24)

| | | | | | | | pctPoverty > 14.7

| | | | | | | | | pctSmallHousUnits <= 56.32: 1 (3.87)

| | | | | | | | | pctSmallHousUnits > 56.32

| | | | | | | | | | kidsBornNevrMarr <= 489: 1 (3.27/0.34)

| | | | | | | | | | kidsBornNevrMarr > 489: 0 (27.7/3.31)

| | | | | | pctAllDivorc > 15.03: 0 (21.66/0.05)

| | persHomeless > 66

| | | persHomeless <= 82: 1 (24.13/0.05)

| | | persHomeless > 82

| | | | pctPopDenseHous <= 9.14: 0 (7.68)

| | | | pctPopDenseHous > 9.14: 1 (2.38/0.76)

| pct2Par > 76.86

| | pctPoverty <= 11.76

| | | persHomeless <= 11

| | | | pctAllDivorc <= 12.77

| | | | | pctHousWOphone <= 4.35

| | | | | | pct2Par <= 78.04: 1 (21.04)

| | | | | | pct2Par > 78.04

| | | | | | | pctAllDivorc <= 11.68

| | | | | | | | pctSmallHousUnits <= 46.83

| | | | | | | | | persHomeless <= 0: 0 (128.59/51.31)

| | | | | | | | | persHomeless > 0

| | | | | | | | | | pctAllDivorc <= 10.07: 1 (4.4)

| | | | | | | | | | pctAllDivorc > 10.07: 0 (10.06/0.09)

| | | | | | | | pctSmallHousUnits > 46.83

| | | | | | | | | pctPopDenseHous <= 3.1: 1 (25.69)

| | | | | | | | | pctPopDenseHous > 3.1

| | | | | | | | | | pct2Par <= 80.14: 0 (7.74)

| | | | | | | | | | pct2Par > 80.14: 1 (2.96)

| | | | | | | pctAllDivorc > 11.68

| | | | | | | | pctPopDenseHous <= 2.84: 0 (24.07/0.24)

| | | | | | | | pctPopDenseHous > 2.84: 1 (2.76)

| | | | | pctHousWOphone > 4.35: 0 (30.96/1.66)

| | | | pctAllDivorc > 12.77: 1 (17.17)

| | | persHomeless > 11: 1 (15.44)

| | pctPoverty > 11.76: 1 (32.62)

Number of Leaves : 64

Size of the tree : 127

Weight: 2.43

J48 pruned tree

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pct2Par <= 76.86

| pctAllDivorc <= 13.73

| | persHomeless <= 5

| | | pctHousOwnerOccup <= 64.53

| | | | pctBlack <= 3.8

| | | | | pctHousOwnerOccup <= 61.06

| | | | | | pctAllDivorc <= 13.36

| | | | | | | medIncome <= 30650

| | | | | | | | pctPersOwnOccup <= 65.28

| | | | | | | | | pctPubAsst <= 13.98: 0 (42.01/6.99)

| | | | | | | | | pctPubAsst > 13.98: 1 (5.35/0.82)

| | | | | | | | pctPersOwnOccup > 65.28: 1 (5.44)

| | | | | | | medIncome > 30650

| | | | | | | | kidsBornNevrMarr <= 248

| | | | | | | | | pctPubAsst <= 5.38: 1 (2.22/0.53)

| | | | | | | | | pctPubAsst > 5.38: 0 (2.13/0.03)

| | | | | | | | kidsBornNevrMarr > 248: 1 (12.23)

| | | | | | pctAllDivorc > 13.36: 1 (11.17/0.32)

| | | | | pctHousOwnerOccup > 61.06: 0 (20.87/0.78)

| | | | pctBlack > 3.8

| | | | | pctHousWOphone <= 13.03

| | | | | | pctPoverty <= 17.38

| | | | | | | medFamIncome <= 30760

| | | | | | | | pctPopDenseHous <= 4.23: 1 (50.54/0.36)

| | | | | | | | pctPopDenseHous > 4.23

| | | | | | | | | kidsBornNevrMarr <= 857: 0 (2.26)

| | | | | | | | | kidsBornNevrMarr > 857: 1 (4.41/0.16)

| | | | | | | medFamIncome > 30760

| | | | | | | | pctPoverty <= 15.99

| | | | | | | | | pctBlack <= 12.84

| | | | | | | | | | pctAllDivorc <= 12.18

| | | | | | | | | | | pct2Par <= 67.42: 0 (4.23)

| | | | | | | | | | | pct2Par > 67.42: 1 (2.17)

| | | | | | | | | | pctAllDivorc > 12.18: 1 (15.09/0.36)

| | | | | | | | | pctBlack > 12.84

| | | | | | | | | | pctHousOwnerOccup <= 60.19: 0 (20.36/1.03)

| | | | | | | | | | pctHousOwnerOccup > 60.19: 1 (3.34/0.34)

| | | | | | | | pctPoverty > 15.99: 1 (19.35/0.36)

| | | | | | pctPoverty > 17.38

| | | | | | | pctAllDivorc <= 13.54

| | | | | | | | pctHousOwnerOccup <= 43.09

| | | | | | | | | pctPersOwnOccup <= 39.47

| | | | | | | | | | pctAllDivorc <= 9.21: 1 (2.13/0.53)

| | | | | | | | | | pctAllDivorc > 9.21: 0 (2.46)

| | | | | | | | | pctPersOwnOccup > 39.47: 1 (12.02)

| | | | | | | | pctHousOwnerOccup > 43.09

| | | | | | | | | pctBlack <= 41.26

| | | | | | | | | | kidsBornNevrMarr <= 358: 1 (2.02)

| | | | | | | | | | kidsBornNevrMarr > 358: 0 (37.7/4.2)

| | | | | | | | | pctBlack > 41.26

| | | | | | | | | | pctAllDivorc <= 13.17: 0 (2.13)

| | | | | | | | | | pctAllDivorc > 13.17: 1 (6.31/0.34)

| | | | | | | pctAllDivorc > 13.54: 1 (12.69/0.7)

| | | | | pctHousWOphone > 13.03: 1 (23.8/0.39)

| | | pctHousOwnerOccup > 64.53

| | | | pctPopDenseHous <= 1.32: 1 (7.34)

| | | | pctPopDenseHous > 1.32

| | | | | pctPubAsst <= 15.11

| | | | | | kidsBornNevrMarr <= 416

| | | | | | | pctPubAsst <= 7.37

| | | | | | | | medFamIncome <= 31160: 1 (9.97)

| | | | | | | | medFamIncome > 31160

| | | | | | | | | pctBlack <= 4.51

| | | | | | | | | | pctPopDenseHous <= 1.84: 0 (4.89/0.68)

| | | | | | | | | | pctPopDenseHous > 1.84: 1 (10.24)

| | | | | | | | | pctBlack > 4.51: 0 (10.38/0.7)

| | | | | | | pctPubAsst > 7.37

| | | | | | | | pctPubAsst <= 8.67: 0 (10.71)

| | | | | | | | pctPubAsst > 8.67

| | | | | | | | | medIncome <= 20184: 0 (2.1)

| | | | | | | | | medIncome > 20184: 1 (2.06)

| | | | | | kidsBornNevrMarr > 416

| | | | | | | medIncome <= 41814: 0 (55.66/3.44)

| | | | | | | medIncome > 41814: 1 (4.76)

| | | | | pctPubAsst > 15.11: 1 (9.72/0.82)

| | persHomeless > 5

| | | pctBlack <= 0.28: 1 (7.04)

| | | pctBlack > 0.28

| | | | pctBlack <= 21.46

| | | | | pctAllDivorc <= 10.79: 1 (9.28/2.41)

| | | | | pctAllDivorc > 10.79

| | | | | | pctPopDenseHous <= 2.18: 1 (3.31/1.03)

| | | | | | pctPopDenseHous > 2.18

| | | | | | | pctHousOwnerOccup <= 61.12: 0 (49.09/0.19)

| | | | | | | pctHousOwnerOccup > 61.12

| | | | | | | | pctPopDenseHous <= 9.98: 0 (4.35/0.32)

| | | | | | | | pctPopDenseHous > 9.98: 1 (2.71)

| | | | pctBlack > 21.46

| | | | | pctHousWOphone <= 7.94: 0 (3.54)

| | | | | pctHousWOphone > 7.94: 1 (11.87/0.08)

| pctAllDivorc > 13.73

| | pctHousWOphone <= 10.78

| | | pctAllDivorc <= 14.49

| | | | pctSmallHousUnits <= 43.52: 1 (5.97)

| | | | pctSmallHousUnits > 43.52

| | | | | pctHousWOphone <= 10.14

| | | | | | pctPopDenseHous <= 2.08

| | | | | | | pctPoverty <= 15.4: 1 (4.02)

| | | | | | | pctPoverty > 15.4: 0 (10.19/0.34)

| | | | | | pctPopDenseHous > 2.08: 0 (52.46/1.22)

| | | | | pctHousWOphone > 10.14: 1 (4.55/0.34)

| | | pctAllDivorc > 14.49

| | | | medFamIncome <= 27576: 0 (23.48/2.94)

| | | | medFamIncome > 27576

| | | | | pctBlack <= 2.83: 0 (11.9/2.0)

| | | | | pctBlack > 2.83

| | | | | | kidsBornNevrMarr <= 2381

| | | | | | | pctPubAsst <= 7.2

| | | | | | | | persHomeless <= 0

| | | | | | | | | pctHousWOphone <= 7.68: 0 (2.18/0.68)

| | | | | | | | | pctHousWOphone > 7.68: 1 (7.89/0.16)

| | | | | | | | persHomeless > 0: 0 (2.31)

| | | | | | | pctPubAsst > 7.2: 1 (21.72)

| | | | | | kidsBornNevrMarr > 2381: 0 (3.41)

| | pctHousWOphone > 10.78: 0 (43.27/0.7)

pct2Par > 76.86

| persHomeless <= 0

| | pctAllDivorc <= 10.84

| | | pctBlack <= 0.21

| | | | pctSmallHousUnits <= 41.58

| | | | | kidsBornNevrMarr <= 14: 0 (2.22)

| | | | | kidsBornNevrMarr > 14: 1 (16.9)

| | | | pctSmallHousUnits > 41.58: 0 (8.63/0.99)

| | | pctBlack > 0.21

| | | | pctBlack <= 7.36

| | | | | pctPubAsst <= 1.83

| | | | | | kidsBornNevrMarr <= 128

| | | | | | | pctPubAsst <= 1.82: 1 (29.52)

| | | | | | | pctPubAsst > 1.82: 0 (2.22)

| | | | | | kidsBornNevrMarr > 128

| | | | | | | kidsBornNevrMarr <= 151: 0 (6.97/0.32)

| | | | | | | kidsBornNevrMarr > 151: 1 (2.61)

| | | | | pctPubAsst > 1.83: 1 (260.2/10.97)

| | | | pctBlack > 7.36

| | | | | medFamIncome <= 58531

| | | | | | medIncome <= 31633: 0 (4.23/0.03)

| | | | | | medIncome > 31633: 1 (55.51/4.59)

| | | | | medFamIncome > 58531: 0 (7.63)

| | pctAllDivorc > 10.84

| | | pctHousWOphone <= 3.47

| | | | pctPersOwnOccup <= 67.6: 1 (25.67)

| | | | pctPersOwnOccup > 67.6

| | | | | pct2Par <= 78.59: 1 (7.12)

| | | | | pct2Par > 78.59: 0 (12.8/1.83)

| | | pctHousWOphone > 3.47: 0 (13.73/2.0)

| persHomeless > 0

| | persHomeless <= 11

| | | pct2Par <= 81.39: 0 (14.68/2.95)

| | | pct2Par > 81.39: 1 (3.63)

| | persHomeless > 11: 1 (8.95)

Number of Leaves : 76

Size of the tree : 151

Weight: 2.96

J48 pruned tree

------------------

persHomeless <= 4

| pctBlack <= 33.74

| | pctPopDenseHous <= 0.83

| | | pctPubAsst <= 2.63: 1 (33.06/1.17)

| | | pctPubAsst > 2.63

| | | | medIncome <= 41372

| | | | | pctHousWOphone <= 0.86: 0 (68.95/1.28)

| | | | | pctHousWOphone > 0.86

| | | | | | pctSmallHousUnits <= 41.96: 1 (5.35)

| | | | | | pctSmallHousUnits > 41.96: 0 (5.32/0.67)

| | | | medIncome > 41372: 1 (4.62)

| | pctPopDenseHous > 0.83

| | | pctPopDenseHous <= 1.09: 1 (53.25/2.33)

| | | pctPopDenseHous > 1.09

| | | | pctPoverty <= 3.72

| | | | | pctPoverty <= 3.54

| | | | | | medIncome <= 56713: 1 (28.41)

| | | | | | medIncome > 56713

| | | | | | | pctPoverty <= 3.1: 0 (6.02/0.78)

| | | | | | | pctPoverty > 3.1: 1 (2.34)

| | | | | pctPoverty > 3.54

| | | | | | pctPubAsst <= 2.27: 1 (4.13)

| | | | | | pctPubAsst > 2.27: 0 (49.47/0.92)

| | | | pctPoverty > 3.72

| | | | | kidsBornNevrMarr <= 343

| | | | | | pct2Par <= 75.49

| | | | | | | pctSmallHousUnits <= 43.52: 0 (9.08/1.29)

| | | | | | | pctSmallHousUnits > 43.52

| | | | | | | | pctSmallHousUnits <= 47.68: 1 (43.49/1.11)

| | | | | | | | pctSmallHousUnits > 47.68

| | | | | | | | | pct2Par <= 73.58

| | | | | | | | | | pctHousOwnerOccup <= 50.99: 1 (26.67/1.01)

| | | | | | | | | | pctHousOwnerOccup > 50.99

| | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | medIncome <= 23053

| | | | | | | | | | | | | medIncome <= 20618

| | | | | | | | | | | | | | pctSmallHousUnits <= 54.02: 1 (13.71/0.15)

| | | | | | | | | | | | | | pctSmallHousUnits > 54.02: 0 (4.07/0.18)

| | | | | | | | | | | | | medIncome > 20618: 0 (6.83/0.38)

| | | | | | | | | | | | medIncome > 23053: 1 (17.88/0.24)

| | | | | | | | | | | persHomeless > 0: 0 (3.27)

| | | | | | | | | pct2Par > 73.58

| | | | | | | | | | kidsBornNevrMarr <= 87: 1 (3.45)

| | | | | | | | | | kidsBornNevrMarr > 87: 0 (13.62/1.34)

| | | | | | pct2Par > 75.49: 1 (147.6/11.08)

| | | | | kidsBornNevrMarr > 343

| | | | | | kidsBornNevrMarr <= 407

| | | | | | | pctPubAsst <= 5.83

| | | | | | | | pctPubAsst <= 4.42: 1 (3.69/1.11)

| | | | | | | | pctPubAsst > 4.42: 0 (47.66/0.21)

| | | | | | | pctPubAsst > 5.83

| | | | | | | | pctPoverty <= 18.15: 1 (15.79/1.11)

| | | | | | | | pctPoverty > 18.15: 0 (5.2/0.18)

| | | | | | kidsBornNevrMarr > 407

| | | | | | | pctSmallHousUnits <= 61.04

| | | | | | | | medFamIncome <= 25371

| | | | | | | | | pctPopDenseHous <= 1.53: 1 (7.33)

| | | | | | | | | pctPopDenseHous > 1.53

| | | | | | | | | | medFamIncome <= 23708

| | | | | | | | | | | pctPopDenseHous <= 19.82

| | | | | | | | | | | | pctPopDenseHous <= 6.96: 0 (2.15)

| | | | | | | | | | | | pctPopDenseHous > 6.96: 1 (11.38/0.36)

| | | | | | | | | | | pctPopDenseHous > 19.82: 0 (6.67/0.18)

| | | | | | | | | | medFamIncome > 23708: 0 (16.69/0.18)

| | | | | | | | medFamIncome > 25371

| | | | | | | | | pctPopDenseHous <= 1.78

| | | | | | | | | | pctPoverty <= 18.09

| | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | pctPoverty <= 14.03: 0 (22.02/5.19)

| | | | | | | | | | | | pctPoverty > 14.03: 1 (14.71/1.11)

| | | | | | | | | | | persHomeless > 1: 1 (6.22)

| | | | | | | | | | pctPoverty > 18.09: 0 (10.33)

| | | | | | | | | pctPopDenseHous > 1.78

| | | | | | | | | | medIncome <= 22032: 1 (70.16/1.97)

| | | | | | | | | | medIncome > 22032

| | | | | | | | | | | pctPoverty <= 9.28

| | | | | | | | | | | | medIncome <= 35951: 1 (38.65/0.26)

| | | | | | | | | | | | medIncome > 35951

| | | | | | | | | | | | | medFamIncome <= 41860

| | | | | | | | | | | | | | medFamIncome <= 40134: 1 (2.33)

| | | | | | | | | | | | | | medFamIncome > 40134: 0 (5.06)

| | | | | | | | | | | | | medFamIncome > 41860: 1 (34.2/3.33)

| | | | | | | | | | | pctPoverty > 9.28

| | | | | | | | | | | | pctAllDivorc <= 9.48: 1 (17.71)

| | | | | | | | | | | | pctAllDivorc > 9.48

| | | | | | | | | | | | | pctHousOwnerOccup <= 53.12: 0 (13.6/0.37)

| | | | | | | | | | | | | pctHousOwnerOccup > 53.12

| | | | | | | | | | | | | | pctPersOwnOccup <= 69.41

| | | | | | | | | | | | | | | kidsBornNevrMarr <= 460: 0 (5.06)

| | | | | | | | | | | | | | | kidsBornNevrMarr > 460

| | | | | | | | | | | | | | | | medIncome <= 22886

| | | | | | | | | | | | | | | | | persHomeless <= 0: 0 (8.57)

| | | | | | | | | | | | | | | | | persHomeless > 0: 1 (3.7)

| | | | | | | | | | | | | | | | medIncome > 22886

| | | | | | | | | | | | | | | | | pctPopDenseHous <= 4.28: 1 (38.9/3.04)

| | | | | | | | | | | | | | | | | pctPopDenseHous > 4.28

| | | | | | | | | | | | | | | | | | pctPubAsst <= 9.37: 0 (7.47/0.18)

| | | | | | | | | | | | | | | | | | pctPubAsst > 9.37: 1 (13.09/1.11)

| | | | | | | | | | | | | | pctPersOwnOccup > 69.41: 0 (5.38)

| | | | | | | pctSmallHousUnits > 61.04

| | | | | | | | pct2Par <= 66.33: 0 (19.93/1.12)

| | | | | | | | pct2Par > 66.33

| | | | | | | | | pctAllDivorc <= 10.14: 0 (7.88/0.54)

| | | | | | | | | pctAllDivorc > 10.14: 1 (9.75/0.01)

| pctBlack > 33.74

| | kidsBornNevrMarr <= 2249

| | | pct2Par <= 52.13: 1 (9.73/0.75)

| | | pct2Par > 52.13: 0 (20.54/2.35)

| | kidsBornNevrMarr > 2249: 0 (20.33)

persHomeless > 4

| pct2Par <= 76.36

| | persHomeless <= 52

| | | pctHousWOphone <= 1.73: 0 (25.19)

| | | pctHousWOphone > 1.73

| | | | persHomeless <= 6

| | | | | pctBlack <= 5.9: 1 (6.27/0.04)

| | | | | pctBlack > 5.9: 0 (6.08/1.26)

| | | | persHomeless > 6

| | | | | pctPubAsst <= 8.87: 0 (27.82/0.24)

| | | | | pctPubAsst > 8.87

| | | | | | pctPersOwnOccup <= 62.72: 0 (38.94/6.14)

| | | | | | pctPersOwnOccup > 62.72: 1 (4.31/0.28)

| | persHomeless > 52

| | | kidsBornNevrMarr <= 9449: 1 (13.68/1.28)

| | | kidsBornNevrMarr > 9449: 0 (4.73/0.28)

| pct2Par > 76.36: 1 (20.47/2.3)

Number of Leaves : 64

Size of the tree : 127

Weight: 2.95

J48 pruned tree

------------------

pct2Par <= 76.18

| pctSmallHousUnits <= 44.2

| | pctHousWOphone <= 9.72

| | | pct2Par <= 67.85: 1 (64.05/0.69)

| | | pct2Par > 67.85

| | | | pctPersOwnOccup <= 62.16: 0 (5.9/0.43)

| | | | pctPersOwnOccup > 62.16

| | | | | medIncome <= 26950: 1 (14.7)

| | | | | medIncome > 26950

| | | | | | pctPersOwnOccup <= 66.71: 0 (4.74/0.79)

| | | | | | pctPersOwnOccup > 66.71: 1 (20.72/2.96)

| | pctHousWOphone > 9.72

| | | kidsBornNevrMarr <= 675: 1 (3.62/0.85)

| | | kidsBornNevrMarr > 675: 0 (8.7/0.08)

| pctSmallHousUnits > 44.2

| | pctSmallHousUnits <= 44.52: 0 (27.91/1.81)

| | pctSmallHousUnits > 44.52

| | | pctSmallHousUnits <= 46.97

| | | | pctHousWOphone <= 10.61: 1 (79.66/8.91)

| | | | pctHousWOphone > 10.61: 0 (10.08/2.33)

| | | pctSmallHousUnits > 46.97

| | | | persHomeless <= 24

| | | | | persHomeless <= 18

| | | | | | pct2Par <= 67.45

| | | | | | | pctBlack <= 25.13

| | | | | | | | pctHousWOphone <= 3.02: 1 (12.74/1.15)

| | | | | | | | pctHousWOphone > 3.02

| | | | | | | | | pctHousWOphone <= 8.34

| | | | | | | | | | pct2Par <= 66.58: 0 (94.57/4.18)

| | | | | | | | | | pct2Par > 66.58

| | | | | | | | | | | pctBlack <= 14.49: 1 (4.52/0.14)

| | | | | | | | | | | pctBlack > 14.49: 0 (2.83)

| | | | | | | | | pctHousWOphone > 8.34

| | | | | | | | | | pctHousOwnerOccup <= 64.04

| | | | | | | | | | | pctPubAsst <= 11.35

| | | | | | | | | | | | pctAllDivorc <= 15.16: 1 (9.57/0.32)

| | | | | | | | | | | | pctAllDivorc > 15.16: 0 (3.05/1.07)

| | | | | | | | | | | pctPubAsst > 11.35

| | | | | | | | | | | | pctPopDenseHous <= 6.03: 0 (9.42/0.23)

| | | | | | | | | | | | pctPopDenseHous > 6.03: 1 (2.75/0.2)

| | | | | | | | | | pctHousOwnerOccup > 64.04: 0 (12.48)

| | | | | | | pctBlack > 25.13

| | | | | | | | medFamIncome <= 23930: 0 (7.38)

| | | | | | | | medFamIncome > 23930

| | | | | | | | | pctPopDenseHous <= 4.01

| | | | | | | | | | pctSmallHousUnits <= 49.1: 1 (3.84/0.28)

| | | | | | | | | | pctSmallHousUnits > 49.1: 0 (7.1)

| | | | | | | | | pctPopDenseHous > 4.01: 1 (43.19/0.91)

| | | | | | pct2Par > 67.45

| | | | | | | pct2Par <= 67.81: 1 (16.05/0.04)

| | | | | | | pct2Par > 67.81

| | | | | | | | persHomeless <= 4: 1 (149.58/45.08)

| | | | | | | | persHomeless > 4

| | | | | | | | | kidsBornNevrMarr <= 1726: 0 (16.22/1.36)

| | | | | | | | | kidsBornNevrMarr > 1726: 1 (6.81/1.36)

| | | | | persHomeless > 18: 1 (22.3/0.23)

| | | | persHomeless > 24

| | | | | medIncome <= 36097: 0 (32.46/2.71)

| | | | | medIncome > 36097: 1 (3.86/0.1)

pct2Par > 76.18

| medFamIncome <= 34416: 1 (30.32/2.66)

| medFamIncome > 34416

| | pct2Par <= 76.48: 0 (44.04/0.28)

| | pct2Par > 76.48

| | | pctPopDenseHous <= 10.34

| | | | kidsBornNevrMarr <= 393

| | | | | medIncome <= 62021

| | | | | | kidsBornNevrMarr <= 382

| | | | | | | pctHousWOphone <= 2.53

| | | | | | | | pctPubAsst <= 3.56

| | | | | | | | | persHomeless <= 10

| | | | | | | | | | pctPopDenseHous <= 1.65

| | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | pctHousOwnerOccup <= 72.46

| | | | | | | | | | | | | pctPopDenseHous <= 0.73: 1 (5.54)

| | | | | | | | | | | | | pctPopDenseHous > 0.73

| | | | | | | | | | | | | | pctPersOwnOccup <= 71.71: 1 (7.35/0.61)

| | | | | | | | | | | | | | pctPersOwnOccup > 71.71

| | | | | | | | | | | | | | | pctAllDivorc <= 10.37: 0 (61.66/1.81)

| | | | | | | | | | | | | | | pctAllDivorc > 10.37

| | | | | | | | | | | | | | | | pctHousOwnerOccup <= 71.14: 1 (6.95)

| | | | | | | | | | | | | | | | pctHousOwnerOccup > 71.14: 0 (11.77)

| | | | | | | | | | | | pctHousOwnerOccup > 72.46

| | | | | | | | | | | | | pctPersOwnOccup <= 91.07: 1 (25.67)

| | | | | | | | | | | | | pctPersOwnOccup > 91.07: 0 (27.06/2.2)

| | | | | | | | | | | persHomeless > 0: 0 (11.38/0.21)

| | | | | | | | | | pctPopDenseHous > 1.65: 1 (22.52/1.19)

| | | | | | | | | persHomeless > 10: 0 (12.02)

| | | | | | | | pctPubAsst > 3.56: 1 (33.4)

| | | | | | | pctHousWOphone > 2.53

| | | | | | | | pctAllDivorc <= 12.23

| | | | | | | | | pctPersOwnOccup <= 80.28

| | | | | | | | | | pctSmallHousUnits <= 41.96: 1 (5.21)

| | | | | | | | | | pctSmallHousUnits > 41.96

| | | | | | | | | | | pctPopDenseHous <= 1.27: 1 (3.26)

| | | | | | | | | | | pctPopDenseHous > 1.27: 0 (34.98/0.29)

| | | | | | | | | pctPersOwnOccup > 80.28: 0 (45.76)

| | | | | | | | pctAllDivorc > 12.23: 1 (7.09)

| | | | | | kidsBornNevrMarr > 382: 0 (23.21/0.08)

| | | | | medIncome > 62021: 1 (18.96/1.53)

| | | | kidsBornNevrMarr > 393

| | | | | pctSmallHousUnits <= 29.9

| | | | | | medFamIncome <= 45092: 0 (12.09)

| | | | | | medFamIncome > 45092: 1 (2.43)

| | | | | pctSmallHousUnits > 29.9: 1 (43.87/2.94)

| | | pctPopDenseHous > 10.34: 0 (22.68/0.34)

Number of Leaves : 54

Size of the tree : 107

Weight: 2.5

J48 pruned tree

------------------

persHomeless <= 23

| pctHousWOphone <= 0.48

| | pctPubAsst <= 4.8

| | | pctHousWOphone <= 0.14

| | | | pctPoverty <= 2.3: 1 (5.19)

| | | | pctPoverty > 2.3

| | | | | pctPersOwnOccup <= 94.2: 0 (17.54/0.7)

| | | | | pctPersOwnOccup > 94.2: 1 (2.35)

| | | pctHousWOphone > 0.14: 1 (47.2/2.54)

| | pctPubAsst > 4.8: 0 (10.85/0.76)

| pctHousWOphone > 0.48

| | pct2Par <= 67.81

| | | pctPubAsst <= 3.65: 0 (17.8)

| | | pctPubAsst > 3.65

| | | | pctSmallHousUnits <= 45.05

| | | | | pctHousWOphone <= 9.26: 1 (40.98/0.14)

| | | | | pctHousWOphone > 9.26

| | | | | | pctPopDenseHous <= 3.45: 1 (3.12/0.7)

| | | | | | pctPopDenseHous > 3.45: 0 (6.57)

| | | | pctSmallHousUnits > 45.05

| | | | | pctSmallHousUnits <= 46.68: 0 (25.01/0.85)

| | | | | pctSmallHousUnits > 46.68

| | | | | | pctBlack <= 0.76: 0 (10.86)

| | | | | | pctBlack > 0.76

| | | | | | | pctPopDenseHous <= 2.08: 1 (40.75/3.95)

| | | | | | | pctPopDenseHous > 2.08

| | | | | | | | pctPopDenseHous <= 2.46: 0 (19.05/1.04)

| | | | | | | | pctPopDenseHous > 2.46

| | | | | | | | | pctHousOwnerOccup <= 63.45

| | | | | | | | | | pctBlack <= 53.49

| | | | | | | | | | | kidsBornNevrMarr <= 3482

| | | | | | | | | | | | pct2Par <= 48.4: 1 (13.47)

| | | | | | | | | | | | pct2Par > 48.4

| | | | | | | | | | | | | pctPersOwnOccup <= 58.08

| | | | | | | | | | | | | | medIncome <= 17886: 1 (11.56/1.1)

| | | | | | | | | | | | | | medIncome > 17886: 0 (25.3/7.28)

| | | | | | | | | | | | | pctPersOwnOccup > 58.08: 1 (26.34/2.98)

| | | | | | | | | | | kidsBornNevrMarr > 3482: 0 (9.06/1.02)

| | | | | | | | | | pctBlack > 53.49: 0 (7.91/0.31)

| | | | | | | | | pctHousOwnerOccup > 63.45: 0 (8.77)

| | pct2Par > 67.81

| | | pctSmallHousUnits <= 44.78

| | | | pctBlack <= 7.95

| | | | | pctAllDivorc <= 8.01: 1 (14.44)

| | | | | pctAllDivorc > 8.01

| | | | | | pctBlack <= 4.4

| | | | | | | pctAllDivorc <= 11.25

| | | | | | | | medFamIncome <= 37832

| | | | | | | | | pctBlack <= 1.32: 0 (44.38/1.98)

| | | | | | | | | pctBlack > 1.32: 1 (3.14)

| | | | | | | | medFamIncome > 37832

| | | | | | | | | pctPubAsst <= 2.8: 0 (21.54/2.39)

| | | | | | | | | pctPubAsst > 2.8: 1 (15.56/0.81)

| | | | | | | pctAllDivorc > 11.25

| | | | | | | | pctBlack <= 1.66: 1 (23.43/0.5)

| | | | | | | | pctBlack > 1.66

| | | | | | | | | pctAllDivorc <= 12.05: 1 (5.59)

| | | | | | | | | pctAllDivorc > 12.05

| | | | | | | | | | pctSmallHousUnits <= 39.29: 1 (2.78)

| | | | | | | | | | pctSmallHousUnits > 39.29: 0 (18.24/1.65)

| | | | | | pctBlack > 4.4: 1 (11.37)

| | | | pctBlack > 7.95

| | | | | pctSmallHousUnits <= 44.58

| | | | | | pct2Par <= 70.9: 1 (5.08/0.99)

| | | | | | pct2Par > 70.9

| | | | | | | pctPubAsst <= 2.24: 0 (20.19/0.04)

| | | | | | | pctPubAsst > 2.24

| | | | | | | | pctSmallHousUnits <= 33.7

| | | | | | | | | persHomeless <= 1: 1 (8.9/0.29)

| | | | | | | | | persHomeless > 1: 0 (6.04)

| | | | | | | | pctSmallHousUnits > 33.7

| | | | | | | | | pctBlack <= 9.19

| | | | | | | | | | pctHousOwnerOccup <= 63.36: 1 (3.09)

| | | | | | | | | | pctHousOwnerOccup > 63.36: 0 (8.3/0.61)

| | | | | | | | | pctBlack > 9.19: 0 (41.59/1.21)

| | | | | pctSmallHousUnits > 44.58: 1 (8.48)

| | | pctSmallHousUnits > 44.78

| | | | medIncome <= 51035

| | | | | pctSmallHousUnits <= 45.01: 0 (27.11/0.19)

| | | | | pctSmallHousUnits > 45.01

| | | | | | persHomeless <= 3: 0 (445.02/96.21)

| | | | | | persHomeless > 3

| | | | | | | pctBlack <= 4.62

| | | | | | | | pctSmallHousUnits <= 51.8: 1 (13.6/0.05)

| | | | | | | | pctSmallHousUnits > 51.8

| | | | | | | | | pctBlack <= 0.4: 0 (2.02/0.08)

| | | | | | | | | pctBlack > 0.4: 1 (2.55/0.34)

| | | | | | | pctBlack > 4.62: 0 (23.96/2.51)

| | | | medIncome > 51035: 0 (29.47)

persHomeless > 23

| pctSmallHousUnits <= 67.22

| | pctPubAsst <= 11.81

| | | pctPoverty <= 13.23

| | | | pctAllDivorc <= 13.48: 1 (12.88/1.08)

| | | | pctAllDivorc > 13.48: 0 (3.1/0.58)

| | | pctPoverty > 13.23: 0 (9.29/0.29)

| | pctPubAsst > 11.81: 1 (31.63/0.5)

| pctSmallHousUnits > 67.22: 0 (7.55)

Number of Leaves : 50

Size of the tree : 99

Weight: 2.08

Number of performed Iterations: 10

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 488 81.4691 %

Incorrectly Classified Instances 111 18.5309 %

Kappa statistic 0.586

Mean absolute error 0.1881

Root mean squared error 0.4087

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.731 0.143 0.721 0.731 0.726 0.586 0.868 0.804 0

0.857 0.269 0.863 0.857 0.860 0.586 0.868 0.902 1

Weighted Avg. 0.815 0.227 0.815 0.815 0.815 0.586 0.868 0.869

=== Confusion Matrix ===

a b <-- classified as

147 54 | a = 0

57 341 | b = 1

## AdaBoostM1 with NaiveBayes Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

==========================================

pctBlack

mean 16.6775 4.7559

std. dev. 18.461 8.4149

weight sum 410 810

precision 0.1229 0.1229

medIncome

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctPubAsst

mean 9.3876 5.3268

std. dev. 5.2609 3.7398

weight sum 410 810

precision 0.056 0.056

medFamIncome

mean 32592.7223 44150.013

std. dev. 9954.894 15163.6477

weight sum 410 810

precision 107.7628 107.7628

pctPoverty

mean 17.0078 8.7312

std. dev. 8.1777 7.4395

weight sum 410 810

precision 0.0603 0.0603

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pct2Par

mean 66.2155 78.5709

std. dev. 9.4865 7.8828

weight sum 410 810

precision 0.0677 0.0677

kidsBornNevrMarr

mean 5919.5829 446.2797

std. dev. 31866.0269 1176.6982

weight sum 410 810

precision 666.9494 666.9494

pctPersOwnOccup

mean 58.4915 71.0758

std. dev. 11.2675 13.4708

weight sum 410 810

precision 0.0699 0.0699

pctPopDenseHous

mean 5.7037 3.3992

std. dev. 5.6841 5.5516

weight sum 410 810

precision 0.0943 0.0943

pctSmallHousUnits

mean 52.7817 41.5841

std. dev. 10.8605 13.4828

weight sum 410 810

precision 0.0829 0.0829

pctHousOwnerOccup

mean 56.2603 67.7035

std. dev. 11.3042 13.5429

weight sum 410 810

precision 0.0688 0.0688

pctHousWOphone

mean 6.7071 2.9217

std. dev. 4.1118 3.4473

weight sum 410 810

precision 0.0345 0.0345

persHomeless

mean 50.654 3.4186

std. dev. 546.477 42.7415

weight sum 410 810

precision 125.8675 125.8675

Weight: 1.32

Naive Bayes Classifier

Class

Attribute 0 1

(0.46) (0.54)

==========================================

pctBlack

mean 11.4176 7.3238

std. dev. 14.9315 11.8664

weight sum 555.8512 664.1488

precision 0.1229 0.1229

medIncome

mean 29932.3445 34842.504

std. dev. 9935.8143 14245.4264

weight sum 555.8512 664.1488

precision 96.3552 96.3552

pctPubAsst

mean 7.5417 6.9075

std. dev. 4.4851 4.912

weight sum 555.8512 664.1488

precision 0.056 0.056

medFamIncome

mean 35985.1382 40536.6703

std. dev. 11156.5032 15209.9442

weight sum 555.8512 664.1488

precision 107.7628 107.7628

pctPoverty

mean 13.7714 11.5843

std. dev. 7.4101 9.1519

weight sum 555.8512 664.1488

precision 0.0603 0.0603

pctAllDivorc

mean 12.3405 10.2054

std. dev. 2.6049 2.7968

weight sum 555.8512 664.1488

precision 0.0215 0.0215

pct2Par

mean 70.0849 75.7221

std. dev. 8.5688 9.2784

weight sum 555.8512 664.1488

precision 0.0677 0.0677

kidsBornNevrMarr

mean 3142.3627 777.7769

std. dev. 21956.3939 1806.4385

weight sum 555.8512 664.1488

precision 666.9494 666.9494

pctPersOwnOccup

mean 61.8782 67.365

std. dev. 11.6207 14.609

weight sum 555.8512 664.1488

precision 0.0699 0.0699

pctPopDenseHous

mean 4.7205 5.0927

std. dev. 4.5083 8.1399

weight sum 555.8512 664.1488

precision 0.0943 0.0943

pctSmallHousUnits

mean 50.6905 44.5467

std. dev. 11.7245 13.9353

weight sum 555.8512 664.1488

precision 0.0829 0.0829

pctHousOwnerOccup

mean 59.2689 64.5662

std. dev. 11.6865 14.2507

weight sum 555.8512 664.1488

precision 0.0688 0.0688

pctHousWOphone

mean 5.1884 4.3285

std. dev. 3.7965 4.5151

weight sum 555.8512 664.1488

precision 0.0345 0.0345

persHomeless

mean 24.4752 8.2183

std. dev. 374.6683 70.9056

weight sum 555.8512 664.1488

precision 125.8675 125.8675

Weight: 0.35

Naive Bayes Classifier

Class

Attribute 0 1

(0.52) (0.48)

==========================================

pctBlack

mean 10.4206 8.1077

std. dev. 13.8821 12.8832

weight sum 628.795 591.205

precision 0.1229 0.1229

medIncome

mean 30381.2496 34431.2901

std. dev. 10076.6664 14144.7235

weight sum 628.795 591.205

precision 96.3552 96.3552

pctPubAsst

mean 7.3251 7.0411

std. dev. 4.382 4.8966

weight sum 628.795 591.205

precision 0.056 0.056

medFamIncome

mean 36467.7745 40115.8986

std. dev. 11322.05 15076.1857

weight sum 628.795 591.205

precision 107.7628 107.7628

pctPoverty

mean 13.3667 11.8797

std. dev. 7.3371 9.1645

weight sum 628.795 591.205

precision 0.0603 0.0603

pctAllDivorc

mean 12.1778 10.352

std. dev. 2.5773 2.8478

weight sum 628.795 591.205

precision 0.0215 0.0215

pct2Par

mean 70.8137 75.1635

std. dev. 8.1724 9.5759

weight sum 628.795 591.205

precision 0.0677 0.0677

kidsBornNevrMarr

mean 2551.0282 879.7122

std. dev. 19074.6764 2016.9964

weight sum 628.795 591.205

precision 666.9494 666.9494

pctPersOwnOccup

mean 62.4667 66.8993

std. dev. 11.6239 14.5408

weight sum 628.795 591.205

precision 0.0699 0.0699

pctPopDenseHous

mean 4.6875 5.0892

std. dev. 4.5903 7.9835

weight sum 628.795 591.205

precision 0.0943 0.0943

pctSmallHousUnits

mean 50.3158 44.8446

std. dev. 11.8338 13.7907

weight sum 628.795 591.205

precision 0.0829 0.0829

pctHousOwnerOccup

mean 59.8247 64.1442

std. dev. 11.7043 14.1701

weight sum 628.795 591.205

precision 0.0688 0.0688

pctHousWOphone

mean 5.0125 4.4924

std. dev. 3.7821 4.5547

weight sum 628.795 591.205

precision 0.0345 0.0345

persHomeless

mean 18.5801 10.6352

std. dev. 325.1313 82.2004

weight sum 628.795 591.205

precision 125.8675 125.8675

Weight: 0.16

Naive Bayes Classifier

Class

Attribute 0 1

(0.54) (0.46)

==========================================

pctBlack

mean 10.121 8.3761

std. dev. 13.5871 13.2191

weight sum 660.3109 559.6891

precision 0.1229 0.1229

medIncome

mean 30544.2929 34274.5419

std. dev. 10164.6224 14081.3255

weight sum 660.3109 559.6891

precision 96.3552 96.3552

pctPubAsst

mean 7.2747 7.0861

std. dev. 4.3796 4.8772

weight sum 660.3109 559.6891

precision 0.056 0.056

medFamIncome

mean 36634.8328 39953.9344

std. dev. 11427.858 14999.3262

weight sum 660.3109 559.6891

precision 107.7628 107.7628

pctPoverty

mean 13.2615 11.9693

std. dev. 7.367 9.1299

weight sum 660.3109 559.6891

precision 0.0603 0.0603

pctAllDivorc

mean 12.1025 10.4221

std. dev. 2.5702 2.8723

weight sum 660.3109 559.6891

precision 0.0215 0.0215

pct2Par

mean 71.0687 74.9463

std. dev. 8.0804 9.6437

weight sum 660.3109 559.6891

precision 0.0677 0.0677

kidsBornNevrMarr

mean 2363.837 929.7306

std. dev. 18092.6148 2120.6045

weight sum 660.3109 559.6891

precision 666.9494 666.9494

pctPersOwnOccup

mean 62.7037 66.7091

std. dev. 11.6668 14.4766

weight sum 660.3109 559.6891

precision 0.0699 0.0699

pctPopDenseHous

mean 4.6935 5.0806

std. dev. 4.6397 7.9137

weight sum 660.3109 559.6891

precision 0.0943 0.0943

pctSmallHousUnits

mean 50.1265 44.9881

std. dev. 11.8966 13.723

weight sum 660.3109 559.6891

precision 0.0829 0.0829

pctHousOwnerOccup

mean 60.0607 63.9658

std. dev. 11.7442 14.1066

weight sum 660.3109 559.6891

precision 0.0688 0.0688

pctHousWOphone

mean 4.9613 4.5369

std. dev. 3.8063 4.5369

weight sum 660.3109 559.6891

precision 0.0345 0.0345

persHomeless

mean 16.811 11.9721

std. dev. 307.6259 87.7758

weight sum 660.3109 559.6891

precision 125.8675 125.8675

Weight: 0.08

Naive Bayes Classifier

Class

Attribute 0 1

(0.55) (0.45)

==========================================

pctBlack

mean 10.0039 8.4851

std. dev. 13.489 13.3391

weight sum 675.9505 544.0495

precision 0.1229 0.1229

medIncome

mean 30627.297 34198.9512

std. dev. 10217.7571 14042.054

weight sum 675.9505 544.0495

precision 96.3552 96.3552

pctPubAsst

mean 7.2542 7.1024

std. dev. 4.3856 4.8591

weight sum 675.9505 544.0495

precision 0.056 0.056

medFamIncome

mean 36719.7536 39875.5788

std. dev. 11491.8439 14952.9987

weight sum 675.9505 544.0495

precision 107.7628 107.7628

pctPoverty

mean 13.2174 12.0049

std. dev. 7.3947 9.1004

weight sum 675.9505 544.0495

precision 0.0603 0.0603

pctAllDivorc

mean 12.0656 10.4588

std. dev. 2.5692 2.8844

weight sum 675.9505 544.0495

precision 0.0215 0.0215

pct2Par

mean 71.1835 74.8436

std. dev. 8.056 9.6595

weight sum 675.9505 544.0495

precision 0.0677 0.0677

kidsBornNevrMarr

mean 2276.6417 957.2865

std. dev. 17625.1268 2176.4742

weight sum 675.9505 544.0495

precision 666.9494 666.9494

pctPersOwnOccup

mean 62.8176 66.6098

std. dev. 11.7025 14.4414

weight sum 675.9505 544.0495

precision 0.0699 0.0699

pctPopDenseHous

mean 4.6995 5.0748

std. dev. 4.6683 7.877

weight sum 675.9505 544.0495

precision 0.0943 0.0943

pctSmallHousUnits

mean 50.0403 45.0716

std. dev. 11.9395 13.6896

weight sum 675.9505 544.0495

precision 0.0829 0.0829

pctHousOwnerOccup

mean 60.1773 63.8722

std. dev. 11.7759 14.0723

weight sum 675.9505 544.0495

precision 0.0688 0.0688

pctHousWOphone

mean 4.939 4.5568

std. dev. 3.8248 4.5247

weight sum 675.9505 544.0495

precision 0.0345 0.0345

persHomeless

mean 16.0054 12.7362

std. dev. 299.2682 90.7658

weight sum 675.9505 544.0495

precision 125.8675 125.8675

Weight: 0.02

Number of performed Iterations: 5

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 482 80.4674 %

Incorrectly Classified Instances 117 19.5326 %

Kappa statistic 0.5411

Mean absolute error 0.2737

Root mean squared error 0.3856

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.617 0.101 0.756 0.617 0.679 0.547 0.801 0.691 0

0.899 0.383 0.823 0.899 0.860 0.547 0.801 0.838 1

Weighted Avg. 0.805 0.288 0.801 0.805 0.799 0.547 0.801 0.789

=== Confusion Matrix ===

a b <-- classified as

124 77 | a = 0

40 358 | b = 1

## AdaBoostM1 with IBk(KNN) Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 1.53

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.51

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.06

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.01

Number of performed Iterations: 4

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 487 81.3022 %

Incorrectly Classified Instances 112 18.6978 %

Kappa statistic 0.5817

Mean absolute error 0.2833

Root mean squared error 0.3955

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.143 0.719 0.726 0.723 0.582 0.796 0.611 0

0.857 0.274 0.861 0.857 0.859 0.582 0.796 0.849 1

Weighted Avg. 0.813 0.230 0.813 0.813 0.813 0.582 0.796 0.769

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

57 341 | b = 1

## Multilayer Perceptron Model

=== Classifier model ===

Sigmoid Node 0

Inputs Weights

Threshold 2.2490509414923463

Node 2 -4.849437649568477

Node 3 -2.086109227225755

Node 4 3.1972190943007073

Node 5 -4.313142625097781

Node 6 3.526218109884538

Node 7 -2.061738678738271

Node 8 4.264048126570985

Node 9 7.74323109501232

Sigmoid Node 1

Inputs Weights

Threshold -2.2489283510901927

Node 2 4.849196432535183

Node 3 2.0860223596774716

Node 4 -3.1968980954587765

Node 5 4.313865565419027

Node 6 -3.540695668986423

Node 7 2.061694014595818

Node 8 -4.264720248346125

Node 9 -7.739280284280457

Sigmoid Node 2

Inputs Weights

Threshold 0.46713008494091834

Attrib pctBlack 2.462573496946936

Attrib medIncome 5.908657298222719

Attrib pctPubAsst 3.8771258905525614

Attrib medFamIncome 1.422205248560947

Attrib pctPoverty -10.578240235620031

Attrib pctAllDivorc -3.281152792825279

Attrib pct2Par 8.500357257893564

Attrib kidsBornNevrMarr -1.4401571889465683

Attrib pctPersOwnOccup -1.1165761886651568

Attrib pctPopDenseHous 7.930772499077072

Attrib pctSmallHousUnits -2.01580467031805

Attrib pctHousOwnerOccup 4.764376834247357

Attrib pctHousWOphone 4.27049730328967

Attrib persHomeless -0.407883175730297

Sigmoid Node 3

Inputs Weights

Threshold -11.833248512006385

Attrib pctBlack -2.726031032278438

Attrib medIncome -0.9508477747324651

Attrib pctPubAsst 3.1896531410076436

Attrib medFamIncome -9.759386038031689

Attrib pctPoverty -4.8973590734619705

Attrib pctAllDivorc -7.903762329715153

Attrib pct2Par 10.272736238626115

Attrib kidsBornNevrMarr 2.588041377046679

Attrib pctPersOwnOccup -1.5580605687869713

Attrib pctPopDenseHous -16.418084549905902

Attrib pctSmallHousUnits 2.0405624563686753

Attrib pctHousOwnerOccup -1.615799415701227

Attrib pctHousWOphone 7.533454846012182

Attrib persHomeless 7.900614501859905

Sigmoid Node 4

Inputs Weights

Threshold -1.457901028475074

Attrib pctBlack 6.244164043050254

Attrib medIncome 2.1554477643458405

Attrib pctPubAsst -2.3767315207337076

Attrib medFamIncome 3.820764111294939

Attrib pctPoverty -1.9052871282146324

Attrib pctAllDivorc -5.46144079779999

Attrib pct2Par -1.2585145070898756

Attrib kidsBornNevrMarr 1.0984915208823955

Attrib pctPersOwnOccup 4.053663516117204

Attrib pctPopDenseHous -0.0031802259238467557

Attrib pctSmallHousUnits -0.7135706094164498

Attrib pctHousOwnerOccup 2.3463836423486013

Attrib pctHousWOphone -3.415041180343063

Attrib persHomeless 1.1498683797348126

Sigmoid Node 5

Inputs Weights

Threshold -8.878792527894433

Attrib pctBlack -2.9168089931146035

Attrib medIncome 4.740058895493803

Attrib pctPubAsst -8.97374209183076

Attrib medFamIncome -1.9836018137497746

Attrib pctPoverty -9.032997792934935

Attrib pctAllDivorc -3.383831373291601

Attrib pct2Par 7.312542065035873

Attrib kidsBornNevrMarr 4.525002021708722

Attrib pctPersOwnOccup -11.527973093708951

Attrib pctPopDenseHous 4.789621710099906

Attrib pctSmallHousUnits 10.580341561019361

Attrib pctHousOwnerOccup -9.325034991510774

Attrib pctHousWOphone -3.210361694981699

Attrib persHomeless 8.696452135399635

Sigmoid Node 6

Inputs Weights

Threshold 1.847904028461577

Attrib pctBlack 2.047600542098655

Attrib medIncome 1.7761611372438093

Attrib pctPubAsst -8.619104087159878E-4

Attrib medFamIncome 5.091719127975536

Attrib pctPoverty 0.8180524736898331

Attrib pctAllDivorc -0.11414438818981858

Attrib pct2Par -4.163371477815226

Attrib kidsBornNevrMarr 3.0764905349602483

Attrib pctPersOwnOccup -1.945471548267365

Attrib pctPopDenseHous -2.398070143836156

Attrib pctSmallHousUnits 1.5653307717066887

Attrib pctHousOwnerOccup -3.0293468146959643

Attrib pctHousWOphone -2.4988666908493715

Attrib persHomeless 1.2173861942587774

Sigmoid Node 7

Inputs Weights

Threshold -4.746799278550739

Attrib pctBlack -3.53738803385149

Attrib medIncome 2.0113807544709803

Attrib pctPubAsst 11.627388150606146

Attrib medFamIncome -1.2261483660643313

Attrib pctPoverty -8.396363933973474

Attrib pctAllDivorc -11.720682991219546

Attrib pct2Par 0.2752441312819993

Attrib kidsBornNevrMarr -1.3898665071756586

Attrib pctPersOwnOccup 7.623799331052432

Attrib pctPopDenseHous -7.585158510082741

Attrib pctSmallHousUnits -11.230051837098195

Attrib pctHousOwnerOccup 8.333228228603582

Attrib pctHousWOphone -5.354612764456924

Attrib persHomeless 2.24204490656461

Sigmoid Node 8

Inputs Weights

Threshold -0.7989661607972629

Attrib pctBlack -4.56297695296508

Attrib medIncome -1.9050324352523809

Attrib pctPubAsst 0.6197308285968718

Attrib medFamIncome -0.2251366561983291

Attrib pctPoverty 1.6880887298170586

Attrib pctAllDivorc -1.4000140513794068

Attrib pct2Par -4.6680571516535565

Attrib kidsBornNevrMarr 3.8359688303367125

Attrib pctPersOwnOccup 0.33230365490331093

Attrib pctPopDenseHous 4.0060953446052565

Attrib pctSmallHousUnits 4.040962123689665

Attrib pctHousOwnerOccup 0.40993932333506156

Attrib pctHousWOphone -3.3904095699320074

Attrib persHomeless 2.506956650470104

Sigmoid Node 9

Inputs Weights

Threshold 1.1949860454560388

Attrib pctBlack 7.810963549186477

Attrib medIncome 4.36747373331739

Attrib pctPubAsst -9.468697996831269

Attrib medFamIncome 8.321575472877168

Attrib pctPoverty 1.0466878270345843

Attrib pctAllDivorc 8.659168977589909

Attrib pct2Par -5.164983096486834

Attrib kidsBornNevrMarr 6.623278770997817

Attrib pctPersOwnOccup -9.073600763904365

Attrib pctPopDenseHous -10.729201536114267

Attrib pctSmallHousUnits 1.56330853918605

Attrib pctHousOwnerOccup -4.274194031607606

Attrib pctHousWOphone 3.710012290647206

Attrib persHomeless 3.4029623869792744

Class 0

Input

Node 0

Class 1

Input

Node 1

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,4-12,14-17,19,21-28,30-41,43,45-49,51-67,71-73,75-77,79-92,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 15

=== Summary ===

Correctly Classified Instances 491 81.9699 %

Incorrectly Classified Instances 108 18.0301 %

Kappa statistic 0.5967

Mean absolute error 0.2357

Root mean squared error 0.3562

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.736 0.138 0.729 0.736 0.733 0.597 0.887 0.816 0

0.862 0.264 0.866 0.862 0.864 0.597 0.887 0.935 1

Weighted Avg. 0.820 0.222 0.820 0.820 0.820 0.597 0.887 0.895

=== Confusion Matrix ===

a b <-- classified as

148 53 | a = 0

55 343 | b = 1

# Test Results: OneRAttributeEval

## Description

The OneRAttributeEval creates a rule for each predictor and ranks attributes based upon the created rules with the lowest error rates relative to the class.

## Attributes Selected

pctBlack

pctWhite

medIncome

pctWdiv

persPoverty

pctAllDivorc

pctKids2Par

kidsBornNevrMarr

medNumBedrm

persEmergShelt

persHomeless

Class

The attributes selected were all ranked highly by the selection method, although I did make some executive decisions to exclude some of the other highly ranked attributes that were different representations of the same indicator (e.g. persPoverty and pctPoverty) and attributes that are highly correlated (e.g. pctAllDivorc, pctFemDivorc, pctMaleDivorc, or pct2Par, pctKids-4w2Par,…and so on).

## J48 Model

=== Classifier model ===

J48 pruned tree

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pctKids2Par <= 71.82

| pctKids2Par <= 59.16

| | persPoverty <= 2633

| | | pctAllDivorc <= 13.01: 1 (9.0/1.0)

| | | pctAllDivorc > 13.01

| | | | kidsBornNevrMarr <= 741: 0 (9.0)

| | | | kidsBornNevrMarr > 741: 1 (3.0/1.0)

| | persPoverty > 2633: 0 (150.0/17.0)

| pctKids2Par > 59.16

| | persHomeless <= 1

| | | pctAllDivorc <= 14.68

| | | | medNumBedrm <= 2

| | | | | medIncome <= 31510

| | | | | | persEmergShelt <= 33: 1 (87.0/32.0)

| | | | | | persEmergShelt > 33

| | | | | | | kidsBornNevrMarr <= 707: 1 (5.0/1.0)

| | | | | | | kidsBornNevrMarr > 707: 0 (16.0/1.0)

| | | | | medIncome > 31510: 1 (22.0/1.0)

| | | | medNumBedrm > 2

| | | | | kidsBornNevrMarr <= 257: 1 (20.0/1.0)

| | | | | kidsBornNevrMarr > 257

| | | | | | persHomeless <= 0

| | | | | | | pctBlack <= 1.24: 0 (8.0/1.0)

| | | | | | | pctBlack > 1.24: 1 (71.0/21.0)

| | | | | | persHomeless > 0

| | | | | | | pctBlack <= 3.94: 1 (4.0)

| | | | | | | pctBlack > 3.94: 0 (2.0)

| | | pctAllDivorc > 14.68

| | | | medNumBedrm <= 2

| | | | | kidsBornNevrMarr <= 635

| | | | | | pctWdiv <= 41.36: 0 (18.0/1.0)

| | | | | | pctWdiv > 41.36: 1 (3.0)

| | | | | kidsBornNevrMarr > 635: 1 (4.0)

| | | | medNumBedrm > 2: 0 (4.0)

| | persHomeless > 1

| | | pctAllDivorc <= 11.8

| | | | medNumBedrm <= 2

| | | | | pctAllDivorc <= 9.03: 1 (4.0)

| | | | | pctAllDivorc > 9.03: 0 (20.0/8.0)

| | | | medNumBedrm > 2: 1 (13.0/4.0)

| | | pctAllDivorc > 11.8

| | | | persEmergShelt <= 130

| | | | | persHomeless <= 50

| | | | | | medNumBedrm <= 2

| | | | | | | pctAllDivorc <= 12.72

| | | | | | | | persHomeless <= 10: 1 (4.0)

| | | | | | | | persHomeless > 10: 0 (2.0)

| | | | | | | pctAllDivorc > 12.72: 0 (36.0/2.0)

| | | | | | medNumBedrm > 2

| | | | | | | persPoverty <= 5282

| | | | | | | | pctWhite <= 76.46: 0 (4.0/1.0)

| | | | | | | | pctWhite > 76.46: 1 (6.0)

| | | | | | | persPoverty > 5282: 0 (11.0)

| | | | | persHomeless > 50: 1 (5.0/1.0)

| | | | persEmergShelt > 130: 0 (30.0)

pctKids2Par > 71.82

| persHomeless <= 4: 1 (620.0/57.0)

| persHomeless > 4

| | pctAllDivorc <= 12.08

| | | pctBlack <= 9.19: 1 (15.0)

| | | pctBlack > 9.19: 0 (2.0)

| | pctAllDivorc > 12.08

| | | medNumBedrm <= 2: 0 (3.0)

| | | medNumBedrm > 2

| | | | pctWhite <= 87.64: 0 (5.0)

| | | | pctWhite > 87.64: 1 (5.0/1.0)

Number of Leaves : 34

Size of the tree : 67

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 488 81.4691 %

Incorrectly Classified Instances 111 18.5309 %

Kappa statistic 0.5601

Mean absolute error 0.245

Root mean squared error 0.3812

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.612 0.083 0.788 0.612 0.689 0.569 0.816 0.709 0

0.917 0.388 0.824 0.917 0.868 0.569 0.816 0.858 1

Weighted Avg. 0.815 0.286 0.812 0.815 0.808 0.569 0.816 0.808

=== Confusion Matrix ===

a b <-- classified as

123 78 | a = 0

33 365 | b = 1

## NaiveBayes Model

=== Classifier model ===

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

=========================================

pctBlack

mean 16.6775 4.7559

std. dev. 18.461 8.4149

weight sum 410 810

precision 0.1229 0.1229

pctWhite

mean 74.9498 89.1821

std. dev. 18.1747 12.469

weight sum 410 810

precision 0.0922 0.0922

medIncome

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctWdiv

mean 36.9869 47.8489

std. dev. 10.6441 12.1074

weight sum 410 810

precision 0.0682 0.0682

persPoverty

mean 19166.2482 2499.0162

std. dev. 84839.4888 4191.4031

weight sum 410 810

precision 1236.5321 1236.5321

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pctKids2Par

mean 62.1493 76.4552

std. dev. 10.9557 8.9928

weight sum 410 810

precision 0.0706 0.0706

kidsBornNevrMarr

mean 5919.5829 446.2797

std. dev. 31866.0269 1176.6982

weight sum 410 810

precision 666.9494 666.9494

medNumBedrm

mean 2.3805 2.7667

std. dev. 0.4955 0.4726

weight sum 410 810

precision 1 1

persEmergShelt

mean 179.5443 8.8589

std. dev. 1237.9729 46.3828

weight sum 410 810

precision 123.7196 123.7196

persHomeless

mean 50.654 3.4186

std. dev. 546.477 42.7415

weight sum 410 810

precision 125.8675 125.8675

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 464 77.4624 %

Incorrectly Classified Instances 135 22.5376 %

Kappa statistic 0.4276

Mean absolute error 0.2248

Root mean squared error 0.4664

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.428 0.050 0.811 0.428 0.560 0.467 0.887 0.779 0

0.950 0.572 0.767 0.950 0.848 0.467 0.887 0.935 1

Weighted Avg. 0.775 0.397 0.782 0.775 0.752 0.467 0.887 0.883

=== Confusion Matrix ===

a b <-- classified as

86 115 | a = 0

20 378 | b = 1

## IBk (KNN) Model

=== Classifier model ===

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 489 81.6361 %

Incorrectly Classified Instances 110 18.3639 %

Kappa statistic 0.5882

Mean absolute error 0.2543

Root mean squared error 0.365

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.138 0.726 0.726 0.726 0.588 0.865 0.768 0

0.862 0.274 0.862 0.862 0.862 0.588 0.865 0.903 1

Weighted Avg. 0.816 0.228 0.816 0.816 0.816 0.588 0.865 0.858

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

55 343 | b = 1

## Bagging with J48 Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.trees.J48 -C 0.25 -M 2

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 491 81.9699 %

Incorrectly Classified Instances 108 18.0301 %

Kappa statistic 0.5906

Mean absolute error 0.2506

Root mean squared error 0.3604

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.706 0.123 0.743 0.706 0.724 0.591 0.875 0.795 0

0.877 0.294 0.855 0.877 0.866 0.591 0.875 0.925 1

Weighted Avg. 0.820 0.236 0.818 0.820 0.819 0.591 0.875 0.881

=== Confusion Matrix ===

a b <-- classified as

142 59 | a = 0

49 349 | b = 1

## Bagging with NaiveBayes Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.bayes.NaiveBayes

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 460 76.7947 %

Incorrectly Classified Instances 139 23.2053 %

Kappa statistic 0.409

Mean absolute error 0.2275

Root mean squared error 0.4641

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.413 0.053 0.798 0.413 0.544 0.449 0.888 0.792 0

0.947 0.587 0.762 0.947 0.844 0.449 0.887 0.935 1

Weighted Avg. 0.768 0.408 0.774 0.768 0.744 0.449 0.888 0.887

=== Confusion Matrix ===

a b <-- classified as

83 118 | a = 0

21 377 | b = 1

## Bagging with IBk (KNN) Model

=== Classifier model ===

Bagging with 10 iterations and base learner

weka.classifiers.lazy.IBk -K 10 -W 0 -A "weka.core.neighboursearch.LinearNNSearch -A \"weka.core.EuclideanDistance -R first-last\""

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 496 82.8047 %

Incorrectly Classified Instances 103 17.1953 %

Kappa statistic 0.6071

Mean absolute error 0.2509

Root mean squared error 0.359

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.706 0.111 0.763 0.706 0.734 0.608 0.876 0.803 0

0.889 0.294 0.857 0.889 0.873 0.608 0.876 0.917 1

Weighted Avg. 0.828 0.232 0.826 0.828 0.826 0.608 0.876 0.878

=== Confusion Matrix ===

a b <-- classified as

142 59 | a = 0

44 354 | b = 1

## AdaBoostM1 with J48

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

J48 pruned tree

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pctKids2Par <= 71.82

| pctKids2Par <= 59.16

| | persPoverty <= 2633

| | | pctAllDivorc <= 13.01: 1 (9.0/1.0)

| | | pctAllDivorc > 13.01

| | | | kidsBornNevrMarr <= 741: 0 (9.0)

| | | | kidsBornNevrMarr > 741: 1 (3.0/1.0)

| | persPoverty > 2633: 0 (150.0/17.0)

| pctKids2Par > 59.16

| | persHomeless <= 1

| | | pctAllDivorc <= 14.68

| | | | medNumBedrm <= 2

| | | | | medIncome <= 31510

| | | | | | persEmergShelt <= 33: 1 (87.0/32.0)

| | | | | | persEmergShelt > 33

| | | | | | | kidsBornNevrMarr <= 707: 1 (5.0/1.0)

| | | | | | | kidsBornNevrMarr > 707: 0 (16.0/1.0)

| | | | | medIncome > 31510: 1 (22.0/1.0)

| | | | medNumBedrm > 2

| | | | | kidsBornNevrMarr <= 257: 1 (20.0/1.0)

| | | | | kidsBornNevrMarr > 257

| | | | | | persHomeless <= 0

| | | | | | | pctBlack <= 1.24: 0 (8.0/1.0)

| | | | | | | pctBlack > 1.24: 1 (71.0/21.0)

| | | | | | persHomeless > 0

| | | | | | | pctBlack <= 3.94: 1 (4.0)

| | | | | | | pctBlack > 3.94: 0 (2.0)

| | | pctAllDivorc > 14.68

| | | | medNumBedrm <= 2

| | | | | kidsBornNevrMarr <= 635

| | | | | | pctWdiv <= 41.36: 0 (18.0/1.0)

| | | | | | pctWdiv > 41.36: 1 (3.0)

| | | | | kidsBornNevrMarr > 635: 1 (4.0)

| | | | medNumBedrm > 2: 0 (4.0)

| | persHomeless > 1

| | | pctAllDivorc <= 11.8

| | | | medNumBedrm <= 2

| | | | | pctAllDivorc <= 9.03: 1 (4.0)

| | | | | pctAllDivorc > 9.03: 0 (20.0/8.0)

| | | | medNumBedrm > 2: 1 (13.0/4.0)

| | | pctAllDivorc > 11.8

| | | | persEmergShelt <= 130

| | | | | persHomeless <= 50

| | | | | | medNumBedrm <= 2

| | | | | | | pctAllDivorc <= 12.72

| | | | | | | | persHomeless <= 10: 1 (4.0)

| | | | | | | | persHomeless > 10: 0 (2.0)

| | | | | | | pctAllDivorc > 12.72: 0 (36.0/2.0)

| | | | | | medNumBedrm > 2

| | | | | | | persPoverty <= 5282

| | | | | | | | pctWhite <= 76.46: 0 (4.0/1.0)

| | | | | | | | pctWhite > 76.46: 1 (6.0)

| | | | | | | persPoverty > 5282: 0 (11.0)

| | | | | persHomeless > 50: 1 (5.0/1.0)

| | | | persEmergShelt > 130: 0 (30.0)

pctKids2Par > 71.82

| persHomeless <= 4: 1 (620.0/57.0)

| persHomeless > 4

| | pctAllDivorc <= 12.08

| | | pctBlack <= 9.19: 1 (15.0)

| | | pctBlack > 9.19: 0 (2.0)

| | pctAllDivorc > 12.08

| | | medNumBedrm <= 2: 0 (3.0)

| | | medNumBedrm > 2

| | | | pctWhite <= 87.64: 0 (5.0)

| | | | pctWhite > 87.64: 1 (5.0/1.0)

Number of Leaves : 34

Size of the tree : 67

Weight: 1.95

J48 pruned tree

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pctKids2Par <= 80.15

| pctWhite <= 98.09

| | persPoverty <= 32778

| | | kidsBornNevrMarr <= 1152

| | | | pctAllDivorc <= 10.67

| | | | | kidsBornNevrMarr <= 136: 1 (21.13)

| | | | | kidsBornNevrMarr > 136

| | | | | | pctKids2Par <= 56.13: 1 (10.88/1.14)

| | | | | | pctKids2Par > 56.13

| | | | | | | medIncome <= 23053

| | | | | | | | medNumBedrm <= 2

| | | | | | | | | pctKids2Par <= 75.76: 0 (54.44/4.57)

| | | | | | | | | pctKids2Par > 75.76: 1 (2.86)

| | | | | | | | medNumBedrm > 2: 1 (3.43/0.57)

| | | | | | | medIncome > 23053

| | | | | | | | pctAllDivorc <= 10.56

| | | | | | | | | persPoverty <= 834: 1 (6.85)

| | | | | | | | | persPoverty > 834

| | | | | | | | | | pctBlack <= 7.36

| | | | | | | | | | | pctBlack <= 2.58

| | | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | | persEmergShelt <= 21

| | | | | | | | | | | | | | persPoverty <= 1226: 1 (5.14)

| | | | | | | | | | | | | | persPoverty > 1226

| | | | | | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | | | | | medIncome <= 37911

| | | | | | | | | | | | | | | | | kidsBornNevrMarr <= 353

| | | | | | | | | | | | | | | | | | persPoverty <= 1290: 0 (8.03)

| | | | | | | | | | | | | | | | | | persPoverty > 1290: 1 (6.85)

| | | | | | | | | | | | | | | | | kidsBornNevrMarr > 353: 0 (32.09/3.43)

| | | | | | | | | | | | | | | | medIncome > 37911: 1 (4.0)

| | | | | | | | | | | | | | | persHomeless > 0: 0 (4.01)

| | | | | | | | | | | | | persEmergShelt > 21: 1 (4.0)

| | | | | | | | | | | | persHomeless > 1: 1 (6.28/0.57)

| | | | | | | | | | | pctBlack > 2.58: 1 (14.28/0.57)

| | | | | | | | | | pctBlack > 7.36

| | | | | | | | | | | pctWdiv <= 38.39: 1 (2.86)

| | | | | | | | | | | pctWdiv > 38.39: 0 (35.53/3.43)

| | | | | | | | pctAllDivorc > 10.56: 1 (7.44)

| | | | pctAllDivorc > 10.67

| | | | | medNumBedrm <= 2: 0 (207.8/48.01)

| | | | | medNumBedrm > 2

| | | | | | medIncome <= 38694

| | | | | | | medIncome <= 20461

| | | | | | | | kidsBornNevrMarr <= 897: 1 (11.44/1.71)

| | | | | | | | kidsBornNevrMarr > 897: 0 (2.28)

| | | | | | | medIncome > 20461

| | | | | | | | pctBlack <= 11.17

| | | | | | | | | medIncome <= 27834

| | | | | | | | | | medIncome <= 23287

| | | | | | | | | | | medIncome <= 22291: 1 (4.0/0.57)

| | | | | | | | | | | medIncome > 22291: 0 (13.75/0.57)

| | | | | | | | | | medIncome > 23287: 1 (19.99/1.71)

| | | | | | | | | medIncome > 27834

| | | | | | | | | | persHomeless <= 1: 0 (107.12/19.99)

| | | | | | | | | | persHomeless > 1

| | | | | | | | | | | pctWhite <= 94.42: 1 (2.86)

| | | | | | | | | | | pctWhite > 94.42: 0 (4.01)

| | | | | | | | pctBlack > 11.17: 0 (73.92/6.85)

| | | | | | medIncome > 38694

| | | | | | | medIncome <= 51035: 1 (14.85/0.57)

| | | | | | | medIncome > 51035: 0 (5.73/1.14)

| | | kidsBornNevrMarr > 1152

| | | | medNumBedrm <= 2

| | | | | pctBlack <= 14.2

| | | | | | pctAllDivorc <= 11.16

| | | | | | | pctKids2Par <= 61.53: 0 (3.43/1.14)

| | | | | | | pctKids2Par > 61.53: 1 (32.65/1.14)

| | | | | | pctAllDivorc > 11.16

| | | | | | | persEmergShelt <= 94: 1 (34.92/7.43)

| | | | | | | persEmergShelt > 94: 0 (10.28/1.14)

| | | | | pctBlack > 14.2

| | | | | | pctWdiv <= 30.63

| | | | | | | persEmergShelt <= 15: 0 (6.85)

| | | | | | | persEmergShelt > 15

| | | | | | | | medIncome <= 20950: 0 (3.43/0.57)

| | | | | | | | medIncome > 20950: 1 (18.91/2.86)

| | | | | | pctWdiv > 30.63: 0 (20.56/0.57)

| | | | medNumBedrm > 2

| | | | | persPoverty <= 5186: 1 (19.46/2.28)

| | | | | persPoverty > 5186

| | | | | | medIncome <= 26722

| | | | | | | pctAllDivorc <= 14.32: 1 (39.5/11.99)

| | | | | | | pctAllDivorc > 14.32: 0 (6.28)

| | | | | | medIncome > 26722: 0 (38.36/6.85)

| | persPoverty > 32778: 0 (29.16/0.57)

| pctWhite > 98.09

| | pctBlack <= 0.06: 0 (4.58/0.57)

| | pctBlack > 0.06: 1 (29.72/1.14)

pctKids2Par > 80.15

| pctWhite <= 88.31

| | pctAllDivorc <= 6.89: 0 (22.35/2.28)

| | pctAllDivorc > 6.89: 1 (13.14)

| pctWhite > 88.31: 1 (188.57/24.08)

Number of Leaves : 48

Size of the tree : 95

Weight: 1.89

J48 pruned tree

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pctBlack <= 34.81

| persHomeless <= 2

| | pctWhite <= 98.49

| | | kidsBornNevrMarr <= 25

| | | | pctAllDivorc <= 4.61: 0 (18.26/0.66)

| | | | pctAllDivorc > 4.61

| | | | | pctBlack <= 2.75: 1 (6.25)

| | | | | pctBlack > 2.75: 0 (2.31)

| | | kidsBornNevrMarr > 25

| | | | kidsBornNevrMarr <= 63: 1 (38.58)

| | | | kidsBornNevrMarr > 63

| | | | | persPoverty <= 3748

| | | | | | persHomeless <= 1

| | | | | | | medNumBedrm <= 2

| | | | | | | | pctKids2Par <= 63.46

| | | | | | | | | pctBlack <= 1.82: 0 (12.86)

| | | | | | | | | pctBlack > 1.82

| | | | | | | | | | persPoverty <= 2081: 0 (8.9/0.33)

| | | | | | | | | | persPoverty > 2081: 1 (23.01/4.94)

| | | | | | | | pctKids2Par > 63.46

| | | | | | | | | kidsBornNevrMarr <= 471

| | | | | | | | | | pctWdiv <= 27.28: 1 (19.98/0.33)

| | | | | | | | | | pctWdiv > 27.28

| | | | | | | | | | | pctWdiv <= 30.42: 0 (7.26)

| | | | | | | | | | | pctWdiv > 30.42

| | | | | | | | | | | | pctAllDivorc <= 8.02

| | | | | | | | | | | | | pctKids2Par <= 77.97: 0 (10.22/0.99)

| | | | | | | | | | | | | pctKids2Par > 77.97: 1 (2.3)

| | | | | | | | | | | | pctAllDivorc > 8.02

| | | | | | | | | | | | | pctBlack <= 13.5

| | | | | | | | | | | | | | pctBlack <= 6.65

| | | | | | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | | | | | pctWdiv <= 38.3

| | | | | | | | | | | | | | | | | pctKids2Par <= 72.82

| | | | | | | | | | | | | | | | | | medIncome <= 18253: 1 (2.18)

| | | | | | | | | | | | | | | | | | medIncome > 18253: 0 (12.21)

| | | | | | | | | | | | | | | | | pctKids2Par > 72.82: 1 (3.16)

| | | | | | | | | | | | | | | | pctWdiv > 38.3

| | | | | | | | | | | | | | | | | pctWhite <= 92.57

| | | | | | | | | | | | | | | | | | persEmergShelt <= 2

| | | | | | | | | | | | | | | | | | | pctWhite <= 86.96: 1 (2.83)

| | | | | | | | | | | | | | | | | | | pctWhite > 86.96: 0 (12.86/1.31)

| | | | | | | | | | | | | | | | | | persEmergShelt > 2: 1 (4.68)

| | | | | | | | | | | | | | | | | pctWhite > 92.57: 1 (49.13/0.66)

| | | | | | | | | | | | | | | persHomeless > 0: 0 (5.28/0.66)

| | | | | | | | | | | | | | pctBlack > 6.65: 1 (18.4/0.33)

| | | | | | | | | | | | | pctBlack > 13.5

| | | | | | | | | | | | | | pctWhite <= 72.64: 1 (2.18)

| | | | | | | | | | | | | | pctWhite > 72.64: 0 (6.93)

| | | | | | | | | kidsBornNevrMarr > 471: 1 (40.29/0.66)

| | | | | | | medNumBedrm > 2

| | | | | | | | pctWhite <= 97.8

| | | | | | | | | pctBlack <= 0.7

| | | | | | | | | | pctAllDivorc <= 10.98

| | | | | | | | | | | kidsBornNevrMarr <= 83: 1 (4.48)

| | | | | | | | | | | kidsBornNevrMarr > 83

| | | | | | | | | | | | pctAllDivorc <= 8.83

| | | | | | | | | | | | | pctWhite <= 90.64: 0 (2.31)

| | | | | | | | | | | | | pctWhite > 90.64: 1 (3.29)

| | | | | | | | | | | | pctAllDivorc > 8.83: 0 (31.13/1.64)

| | | | | | | | | | pctAllDivorc > 10.98: 1 (10.02)

| | | | | | | | | pctBlack > 0.7

| | | | | | | | | | pctWhite <= 96.3

| | | | | | | | | | | pctKids2Par <= 81.03

| | | | | | | | | | | | pctWdiv <= 50.94

| | | | | | | | | | | | | pctWdiv <= 39.14

| | | | | | | | | | | | | | pctWhite <= 67.49: 1 (10.16)

| | | | | | | | | | | | | | pctWhite > 67.49

| | | | | | | | | | | | | | | persEmergShelt <= 5

| | | | | | | | | | | | | | | | persPoverty <= 3238

| | | | | | | | | | | | | | | | | kidsBornNevrMarr <= 252

| | | | | | | | | | | | | | | | | | pctBlack <= 2.03: 0 (5.28/0.66)

| | | | | | | | | | | | | | | | | | pctBlack > 2.03: 1 (9.82/0.33)

| | | | | | | | | | | | | | | | | kidsBornNevrMarr > 252: 0 (32.39/4.15)

| | | | | | | | | | | | | | | | persPoverty > 3238: 1 (5.8)

| | | | | | | | | | | | | | | persEmergShelt > 5

| | | | | | | | | | | | | | | | pctBlack <= 23.79: 1 (7.97)

| | | | | | | | | | | | | | | | pctBlack > 23.79: 0 (2.97/0.33)

| | | | | | | | | | | | | pctWdiv > 39.14: 1 (85.84/19.13)

| | | | | | | | | | | | pctWdiv > 50.94

| | | | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | | | pctAllDivorc <= 9.71

| | | | | | | | | | | | | | | pctWdiv <= 60.29: 1 (6.45)

| | | | | | | | | | | | | | | pctWdiv > 60.29: 0 (17.61)

| | | | | | | | | | | | | | pctAllDivorc > 9.71: 0 (21.11/2.63)

| | | | | | | | | | | | | persHomeless > 0: 1 (2.51)

| | | | | | | | | | | pctKids2Par > 81.03

| | | | | | | | | | | | pctBlack <= 17.99

| | | | | | | | | | | | | pctAllDivorc <= 4.68: 0 (2.97/0.66)

| | | | | | | | | | | | | pctAllDivorc > 4.68: 1 (28.8)

| | | | | | | | | | | | pctBlack > 17.99: 0 (2.31)

| | | | | | | | | | pctWhite > 96.3: 1 (25.14)

| | | | | | | | pctWhite > 97.8: 1 (20.79)

| | | | | | persHomeless > 1

| | | | | | | pctKids2Par <= 65.75: 0 (2.97)

| | | | | | | pctKids2Par > 65.75: 1 (22.28/0.33)

| | | | | persPoverty > 3748

| | | | | | pctBlack <= 0.86

| | | | | | | pctWdiv <= 17.39: 1 (4.68)

| | | | | | | pctWdiv > 17.39

| | | | | | | | medIncome <= 31938: 0 (31.93/1.64)

| | | | | | | | medIncome > 31938: 1 (3.16)

| | | | | | pctBlack > 0.86

| | | | | | | pctBlack <= 1.03: 1 (13.85)

| | | | | | | pctBlack > 1.03

| | | | | | | | persHomeless <= 1

| | | | | | | | | medIncome <= 31544

| | | | | | | | | | pctAllDivorc <= 7.98: 1 (8.64/0.33)

| | | | | | | | | | pctAllDivorc > 7.98

| | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | pctWdiv <= 40.85

| | | | | | | | | | | | | persEmergShelt <= 65

| | | | | | | | | | | | | | persPoverty <= 7286

| | | | | | | | | | | | | | | pctBlack <= 3.11: 0 (14.71/0.33)

| | | | | | | | | | | | | | | pctBlack > 3.11

| | | | | | | | | | | | | | | | persPoverty <= 4053: 1 (5.14)

| | | | | | | | | | | | | | | | persPoverty > 4053

| | | | | | | | | | | | | | | | | pctKids2Par <= 68.69

| | | | | | | | | | | | | | | | | | pctBlack <= 23.79: 0 (26.97/1.97)

| | | | | | | | | | | | | | | | | | pctBlack > 23.79

| | | | | | | | | | | | | | | | | | | persPoverty <= 5380: 0 (3.16)

| | | | | | | | | | | | | | | | | | | persPoverty > 5380: 1 (6.8)

| | | | | | | | | | | | | | | | | pctKids2Par > 68.69: 1 (4.35)

| | | | | | | | | | | | | | persPoverty > 7286: 1 (10.28/1.64)

| | | | | | | | | | | | | persEmergShelt > 65: 0 (11.47)

| | | | | | | | | | | | pctWdiv > 40.85

| | | | | | | | | | | | | pctKids2Par <= 76.49: 1 (12.33/0.66)

| | | | | | | | | | | | | pctKids2Par > 76.49: 0 (2.31)

| | | | | | | | | | | persHomeless > 0

| | | | | | | | | | | | kidsBornNevrMarr <= 1821: 1 (5.47/0.33)

| | | | | | | | | | | | kidsBornNevrMarr > 1821: 0 (3.82)

| | | | | | | | | medIncome > 31544

| | | | | | | | | | persEmergShelt <= 2

| | | | | | | | | | | persPoverty <= 7803

| | | | | | | | | | | | pctBlack <= 20.01: 1 (8.83)

| | | | | | | | | | | | pctBlack > 20.01: 0 (2.31)

| | | | | | | | | | | persPoverty > 7803: 0 (4.62)

| | | | | | | | | | persEmergShelt > 2: 1 (18.2/0.66)

| | | | | | | | persHomeless > 1

| | | | | | | | | persPoverty <= 8559: 1 (7.91/1.64)

| | | | | | | | | persPoverty > 8559: 0 (9.63)

| | pctWhite > 98.49

| | | pctWdiv <= 51.01: 1 (14.02)

| | | pctWdiv > 51.01

| | | | pctWdiv <= 60.49

| | | | | persPoverty <= 587: 0 (48.19/2.3)

| | | | | persPoverty > 587

| | | | | | pctBlack <= 0.05: 0 (2.31)

| | | | | | pctBlack > 0.05: 1 (3.94)

| | | | pctWdiv > 60.49: 1 (3.62)

| persHomeless > 2

| | medIncome <= 31394

| | | medNumBedrm <= 2

| | | | persEmergShelt <= 20

| | | | | pctAllDivorc <= 12.96

| | | | | | persPoverty <= 9804: 1 (16.29/1.64)

| | | | | | persPoverty > 9804: 0 (4.68/0.33)

| | | | | pctAllDivorc > 12.96: 0 (7.64)

| | | | persEmergShelt > 20: 0 (48.75/7.78)

| | | medNumBedrm > 2: 0 (36.27/1.97)

| | medIncome > 31394

| | | pctWdiv <= 44.25

| | | | pctAllDivorc <= 12: 1 (21.9)

| | | | pctAllDivorc > 12

| | | | | pctAllDivorc <= 12.43: 0 (3.16)

| | | | | pctAllDivorc > 12.43: 1 (7.44/1.64)

| | | pctWdiv > 44.25

| | | | pctKids2Par <= 74.78

| | | | | pctBlack <= 1.5: 1 (2.51/0.33)

| | | | | pctBlack > 1.5: 0 (11.27/0.33)

| | | | pctKids2Par > 74.78: 1 (8.63/0.66)

pctBlack > 34.81

| medNumBedrm <= 2

| | pctWdiv <= 10.17: 1 (2.64/0.33)

| | pctWdiv > 10.17: 0 (17.25)

| medNumBedrm > 2

| | persHomeless <= 4

| | | pctWhite <= 49.31

| | | | persHomeless <= 0

| | | | | pctBlack <= 56.07: 1 (10.09/2.51)

| | | | | pctBlack > 56.07: 0 (9.37)

| | | | persHomeless > 0: 1 (2.51/0.33)

| | | pctWhite > 49.31: 0 (35.29/0.99)

| | persHomeless > 4: 1 (7.25/2.3)

Number of Leaves : 93

Size of the tree : 185

Weight: 2.75

J48 pruned tree

------------------

pctWhite <= 89.38

| pctKids2Par <= 43.42: 0 (33.63/1.23)

| pctKids2Par > 43.42

| | pctKids2Par <= 45.3

| | | pctKids2Par <= 43.75: 1 (20.44)

| | | pctKids2Par > 43.75: 0 (5.16)

| | pctKids2Par > 45.3

| | | persPoverty <= 2081

| | | | kidsBornNevrMarr <= 503

| | | | | persPoverty <= 706

| | | | | | medIncome <= 56543: 1 (9.46)

| | | | | | medIncome > 56543

| | | | | | | pctWdiv <= 71.57: 0 (5.02/1.33)

| | | | | | | pctWdiv > 71.57: 1 (2.49)

| | | | | persPoverty > 706

| | | | | | medNumBedrm <= 2

| | | | | | | pctAllDivorc <= 8.48: 1 (5.64)

| | | | | | | pctAllDivorc > 8.48

| | | | | | | | medIncome <= 33863: 0 (17.53/2.49)

| | | | | | | | medIncome > 33863: 1 (5.51/0.35)

| | | | | | medNumBedrm > 2

| | | | | | | pctWdiv <= 42.28

| | | | | | | | persPoverty <= 1004: 1 (6.8)

| | | | | | | | persPoverty > 1004

| | | | | | | | | pctAllDivorc <= 13.16: 0 (7.9/0.52)

| | | | | | | | | pctAllDivorc > 13.16: 1 (2.49)

| | | | | | | pctWdiv > 42.28

| | | | | | | | pctWdiv <= 49.87

| | | | | | | | | persEmergShelt <= 4

| | | | | | | | | | persPoverty <= 949: 0 (38.59/0.17)

| | | | | | | | | | persPoverty > 949: 1 (2.03)

| | | | | | | | | persEmergShelt > 4: 0 (19.21)

| | | | | | | | pctWdiv > 49.87

| | | | | | | | | pctAllDivorc <= 10.58: 0 (5.79/0.87)

| | | | | | | | | pctAllDivorc > 10.58: 1 (3.08)

| | | | kidsBornNevrMarr > 503: 1 (70.3/5.61)

| | | persPoverty > 2081

| | | | kidsBornNevrMarr <= 339

| | | | | pctWhite <= 73.36: 1 (9.61)

| | | | | pctWhite > 73.36

| | | | | | pctKids2Par <= 67.54: 0 (5.61/0.35)

| | | | | | pctKids2Par > 67.54

| | | | | | | persEmergShelt <= 4: 1 (12.2/1.23)

| | | | | | | persEmergShelt > 4: 0 (5.89/0.7)

| | | | kidsBornNevrMarr > 339

| | | | | persPoverty <= 2133: 0 (39.99/0.35)

| | | | | persPoverty > 2133

| | | | | | medIncome <= 32375

| | | | | | | persPoverty <= 2833

| | | | | | | | pctAllDivorc <= 14.42

| | | | | | | | | medIncome <= 22102: 1 (11.68)

| | | | | | | | | medIncome > 22102

| | | | | | | | | | pctWdiv <= 37.69: 0 (3.79/0.17)

| | | | | | | | | | pctWdiv > 37.69: 1 (2.67)

| | | | | | | | pctAllDivorc > 14.42: 0 (5.64)

| | | | | | | persPoverty > 2833

| | | | | | | | pctWdiv <= 43.09

| | | | | | | | | persEmergShelt <= 31

| | | | | | | | | | kidsBornNevrMarr <= 407: 0 (21.84/0.17)

| | | | | | | | | | kidsBornNevrMarr > 407

| | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | pctBlack <= 31.59

| | | | | | | | | | | | | pctBlack <= 17.32

| | | | | | | | | | | | | | medIncome <= 22378

| | | | | | | | | | | | | | | kidsBornNevrMarr <= 489: 1 (2.32)

| | | | | | | | | | | | | | | kidsBornNevrMarr > 489: 0 (20.42/1.23)

| | | | | | | | | | | | | | medIncome > 22378

| | | | | | | | | | | | | | | persEmergShelt <= 3: 1 (11.61)

| | | | | | | | | | | | | | | persEmergShelt > 3

| | | | | | | | | | | | | | | | pctWhite <= 84.25: 0 (13.01/1.33)

| | | | | | | | | | | | | | | | pctWhite > 84.25: 1 (5.3/0.17)

| | | | | | | | | | | | | pctBlack > 17.32: 1 (9.02/0.7)

| | | | | | | | | | | | pctBlack > 31.59: 0 (8.2)

| | | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | | persEmergShelt <= 28

| | | | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | | | pctWhite <= 60.64: 0 (10.49)

| | | | | | | | | | | | | | pctWhite > 60.64

| | | | | | | | | | | | | | | pctWhite <= 76.65

| | | | | | | | | | | | | | | | kidsBornNevrMarr <= 739: 0 (2.39)

| | | | | | | | | | | | | | | | kidsBornNevrMarr > 739: 1 (9.68/0.52)

| | | | | | | | | | | | | | | pctWhite > 76.65

| | | | | | | | | | | | | | | | pctWhite <= 82.13: 0 (7.58/0.17)

| | | | | | | | | | | | | | | | pctWhite > 82.13

| | | | | | | | | | | | | | | | | pctKids2Par <= 66.01: 0 (2.46)

| | | | | | | | | | | | | | | | | pctKids2Par > 66.01: 1 (2.67)

| | | | | | | | | | | | | persHomeless > 1: 0 (12.03/0.17)

| | | | | | | | | | | | persEmergShelt > 28: 1 (3.96)

| | | | | | | | | persEmergShelt > 31

| | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | pctWdiv <= 32.1

| | | | | | | | | | | | persHomeless <= 45: 0 (11.22/1.23)

| | | | | | | | | | | | persHomeless > 45: 1 (4.31/0.35)

| | | | | | | | | | | pctWdiv > 32.1: 0 (39.49)

| | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | pctKids2Par <= 71.03: 0 (40.88/3.33)

| | | | | | | | | | | pctKids2Par > 71.03: 1 (2.32)

| | | | | | | | pctWdiv > 43.09: 0 (38.07/0.35)

| | | | | | medIncome > 32375

| | | | | | | pctKids2Par <= 56.55: 0 (8.2)

| | | | | | | pctKids2Par > 56.55

| | | | | | | | medNumBedrm <= 2

| | | | | | | | | pctBlack <= 9.4: 1 (16.02/2.38)

| | | | | | | | | pctBlack > 9.4: 0 (6.87/1.58)

| | | | | | | | medNumBedrm > 2

| | | | | | | | | persEmergShelt <= 25

| | | | | | | | | | medIncome <= 35856: 1 (4.98)

| | | | | | | | | | medIncome > 35856

| | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | pctAllDivorc <= 12.19: 1 (2.56)

| | | | | | | | | | | | pctAllDivorc > 12.19: 0 (2.46)

| | | | | | | | | | | persHomeless > 1: 0 (5.19/0.17)

| | | | | | | | | persEmergShelt > 25: 1 (10.73/0.52)

pctWhite > 89.38

| pctWhite <= 90.4

| | medIncome <= 23207

| | | pctBlack <= 6.93: 0 (2.39)

| | | pctBlack > 6.93: 1 (22.86/0.17)

| | medIncome > 23207: 1 (29.7/0.17)

| pctWhite > 90.4

| | pctKids2Par <= 70.95

| | | medIncome <= 29770

| | | | pctAllDivorc <= 15.18

| | | | | kidsBornNevrMarr <= 210: 1 (18.23/0.35)

| | | | | kidsBornNevrMarr > 210

| | | | | | pctWhite <= 91.56: 1 (19.64/1.23)

| | | | | | pctWhite > 91.56

| | | | | | | persHomeless <= 1

| | | | | | | | pctAllDivorc <= 14.29

| | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | pctKids2Par <= 67.95

| | | | | | | | | | | pctAllDivorc <= 12.12: 1 (4.88)

| | | | | | | | | | | pctAllDivorc > 12.12

| | | | | | | | | | | | pctAllDivorc <= 13.12: 0 (3.62)

| | | | | | | | | | | | pctAllDivorc > 13.12: 1 (2.67/0.17)

| | | | | | | | | | pctKids2Par > 67.95: 0 (6.25/1.33)

| | | | | | | | | medNumBedrm > 2

| | | | | | | | | | pctAllDivorc <= 12.52: 0 (3.02/0.7)

| | | | | | | | | | pctAllDivorc > 12.52: 1 (7.4)

| | | | | | | | pctAllDivorc > 14.29: 0 (5.3)

| | | | | | | persHomeless > 1: 0 (5.75)

| | | | pctAllDivorc > 15.18: 0 (8.09)

| | | medIncome > 29770: 0 (45.75/4.17)

| | pctKids2Par > 70.95

| | | pctBlack <= 1.71

| | | | pctBlack <= 1.16

| | | | | pctBlack <= 0.83

| | | | | | pctBlack <= 0.64

| | | | | | | medIncome <= 41372

| | | | | | | | medIncome <= 41338

| | | | | | | | | pctKids2Par <= 87.66

| | | | | | | | | | pctWhite <= 99.03

| | | | | | | | | | | kidsBornNevrMarr <= 137: 1 (29.08)

| | | | | | | | | | | kidsBornNevrMarr > 137

| | | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | | | pctWdiv <= 52.19: 1 (13.12)

| | | | | | | | | | | | | | pctWdiv > 52.19: 0 (2.46)

| | | | | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | | | | medIncome <= 29354

| | | | | | | | | | | | | | | | pctAllDivorc <= 8.99: 1 (3.43)

| | | | | | | | | | | | | | | | pctAllDivorc > 8.99: 0 (8.25/0.7)

| | | | | | | | | | | | | | | medIncome > 29354: 1 (19.83/1.23)

| | | | | | | | | | | | | | persHomeless > 0: 0 (3.79/1.33)

| | | | | | | | | | | | persHomeless > 1: 1 (11.46)

| | | | | | | | | | pctWhite > 99.03

| | | | | | | | | | | kidsBornNevrMarr <= 50: 0 (8.14)

| | | | | | | | | | | kidsBornNevrMarr > 50: 1 (2.91)

| | | | | | | | | pctKids2Par > 87.66: 0 (8.49/0.35)

| | | | | | | | medIncome > 41338: 0 (8.14)

| | | | | | | medIncome > 41372: 1 (22.06)

| | | | | | pctBlack > 0.64

| | | | | | | pctWhite <= 97.59

| | | | | | | | pctWhite <= 94.6: 1 (2.21)

| | | | | | | | pctWhite > 94.6: 0 (30.93/3.32)

| | | | | | | pctWhite > 97.59: 1 (7.15)

| | | | | pctBlack > 0.83: 1 (29.51/1.23)

| | | | pctBlack > 1.16

| | | | | persPoverty <= 969: 1 (9.49)

| | | | | persPoverty > 969

| | | | | | pctWhite <= 95.13

| | | | | | | pctAllDivorc <= 12.37: 0 (34.64/0.7)

| | | | | | | pctAllDivorc > 12.37: 1 (2.91)

| | | | | | pctWhite > 95.13: 1 (8.2/1.23)

| | | pctBlack > 1.71

| | | | persHomeless <= 0: 1 (65.01/4.91)

| | | | persHomeless > 0

| | | | | medIncome <= 24884: 0 (2.73)

| | | | | medIncome > 24884: 1 (6.17)

Number of Leaves : 96

Size of the tree : 191

Weight: 3.09

J48 pruned tree

------------------

pctKids2Par <= 81.3

| kidsBornNevrMarr <= 66

| | pctAllDivorc <= 12.13

| | | pctBlack <= 0.3: 0 (4.35/0.09)

| | | pctBlack > 0.3: 1 (5.05)

| | pctAllDivorc > 12.13: 0 (40.99/1.3)

| kidsBornNevrMarr > 66

| | persHomeless <= 15

| | | persEmergShelt <= 62

| | | | pctBlack <= 18.19

| | | | | pctWdiv <= 49.19

| | | | | | persPoverty <= 1643

| | | | | | | pctKids2Par <= 78.64

| | | | | | | | pctAllDivorc <= 14.75: 1 (115.68/8.03)

| | | | | | | | pctAllDivorc > 14.75: 0 (6.29/1.82)

| | | | | | | pctKids2Par > 78.64

| | | | | | | | pctKids2Par <= 78.71: 0 (10.04)

| | | | | | | | pctKids2Par > 78.71: 1 (5.56)

| | | | | | persPoverty > 1643

| | | | | | | pctAllDivorc <= 12.71

| | | | | | | | persPoverty <= 1684: 0 (10.77/0.09)

| | | | | | | | persPoverty > 1684

| | | | | | | | | pctWdiv <= 27.78

| | | | | | | | | | pctWdiv <= 27.23

| | | | | | | | | | | persHomeless <= 5

| | | | | | | | | | | | persEmergShelt <= 2

| | | | | | | | | | | | | pctKids2Par <= 63.29: 0 (4.15/0.97)

| | | | | | | | | | | | | pctKids2Par > 63.29: 1 (3.76)

| | | | | | | | | | | | persEmergShelt > 2: 1 (2.99/1.47)

| | | | | | | | | | | persHomeless > 5: 0 (4.16/0.09)

| | | | | | | | | | pctWdiv > 27.23: 0 (16.0)

| | | | | | | | | pctWdiv > 27.78

| | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | pctKids2Par <= 63.68: 0 (7.3/1.91)

| | | | | | | | | | | pctKids2Par > 63.68: 1 (62.29/10.49)

| | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | persHomeless <= 0: 1 (55.91/6.53)

| | | | | | | | | | | persHomeless > 0

| | | | | | | | | | | | kidsBornNevrMarr <= 471: 0 (2.71)

| | | | | | | | | | | | kidsBornNevrMarr > 471

| | | | | | | | | | | | | pctWhite <= 79.55: 0 (2.59)

| | | | | | | | | | | | | pctWhite > 79.55: 1 (8.15)

| | | | | | | pctAllDivorc > 12.71

| | | | | | | | persPoverty <= 1706: 1 (13.39)

| | | | | | | | persPoverty > 1706

| | | | | | | | | pctWhite <= 81.32

| | | | | | | | | | pctWdiv <= 37.29

| | | | | | | | | | | persPoverty <= 4878: 1 (23.66/0.09)

| | | | | | | | | | | persPoverty > 4878

| | | | | | | | | | | | medIncome <= 24986: 0 (4.98)

| | | | | | | | | | | | medIncome > 24986: 1 (2.04/0.09)

| | | | | | | | | | pctWdiv > 37.29: 0 (5.51)

| | | | | | | | | pctWhite > 81.32

| | | | | | | | | | pctAllDivorc <= 12.99: 0 (38.24/0.7)

| | | | | | | | | | pctAllDivorc > 12.99

| | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | medIncome <= 24584

| | | | | | | | | | | | | pctAllDivorc <= 13.49: 1 (2.46/0.64)

| | | | | | | | | | | | | pctAllDivorc > 13.49: 0 (43.95/2.46)

| | | | | | | | | | | | medIncome > 24584

| | | | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | | | pctWdiv <= 40.85: 1 (7.5)

| | | | | | | | | | | | | | pctWdiv > 40.85: 0 (6.19/1.91)

| | | | | | | | | | | | | persHomeless > 1: 0 (3.43)

| | | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | | persPoverty <= 5479

| | | | | | | | | | | | | persEmergShelt <= 6

| | | | | | | | | | | | | | medIncome <= 22954: 1 (3.53)

| | | | | | | | | | | | | | medIncome > 22954: 0 (3.3)

| | | | | | | | | | | | | persEmergShelt > 6: 1 (6.87)

| | | | | | | | | | | | persPoverty > 5479: 0 (5.41/0.18)

| | | | | pctWdiv > 49.19

| | | | | | kidsBornNevrMarr <= 105: 1 (10.07/0.64)

| | | | | | kidsBornNevrMarr > 105

| | | | | | | medNumBedrm <= 2

| | | | | | | | pctAllDivorc <= 10.96: 1 (17.83/2.53)

| | | | | | | | pctAllDivorc > 10.96: 0 (18.79/5.03)

| | | | | | | medNumBedrm > 2

| | | | | | | | medIncome <= 31394

| | | | | | | | | medIncome <= 27182

| | | | | | | | | | pctBlack <= 0.54: 0 (2.02/0.09)

| | | | | | | | | | pctBlack > 0.54: 1 (2.16/0.64)

| | | | | | | | | medIncome > 27182: 1 (7.24)

| | | | | | | | medIncome > 31394

| | | | | | | | | pctWdiv <= 51.21: 0 (60.38/2.03)

| | | | | | | | | pctWdiv > 51.21

| | | | | | | | | | pctBlack <= 1.62: 1 (9.73)

| | | | | | | | | | pctBlack > 1.62

| | | | | | | | | | | pctAllDivorc <= 10.6

| | | | | | | | | | | | pctBlack <= 1.68: 0 (4.25)

| | | | | | | | | | | | pctBlack > 1.68: 1 (6.17/0.64)

| | | | | | | | | | | pctAllDivorc > 10.6: 0 (31.03/0.09)

| | | | pctBlack > 18.19

| | | | | pctKids2Par <= 40.6

| | | | | | pctBlack <= 54.99: 1 (14.11)

| | | | | | pctBlack > 54.99: 0 (2.49)

| | | | | pctKids2Par > 40.6

| | | | | | pctAllDivorc <= 11.3

| | | | | | | pctWhite <= 54.5: 0 (16.09/0.73)

| | | | | | | pctWhite > 54.5

| | | | | | | | medNumBedrm <= 2: 0 (6.09/1.85)

| | | | | | | | medNumBedrm > 2

| | | | | | | | | pctKids2Par <= 70.53: 1 (13.11/0.64)

| | | | | | | | | pctKids2Par > 70.53: 0 (3.17/0.61)

| | | | | | pctAllDivorc > 11.3: 0 (108.31/10.37)

| | | persEmergShelt > 62

| | | | pctBlack <= 9.5

| | | | | pctBlack <= 4.68

| | | | | | medNumBedrm <= 2

| | | | | | | pctKids2Par <= 64.53: 0 (2.56)

| | | | | | | pctKids2Par > 64.53

| | | | | | | | persEmergShelt <= 82: 0 (2.16/0.7)

| | | | | | | | persEmergShelt > 82: 1 (24.55/0.09)

| | | | | | medNumBedrm > 2

| | | | | | | pctAllDivorc <= 12.48: 1 (4.19/0.7)

| | | | | | | pctAllDivorc > 12.48: 0 (2.07)

| | | | | pctBlack > 4.68: 0 (8.78/0.18)

| | | | pctBlack > 9.5

| | | | | medNumBedrm <= 2: 1 (66.03/4.25)

| | | | | medNumBedrm > 2

| | | | | | pctAllDivorc <= 13.49: 1 (32.84/1.3)

| | | | | | pctAllDivorc > 13.49: 0 (2.95)

| | persHomeless > 15

| | | pctWhite <= 93.93

| | | | persHomeless <= 52: 0 (46.33/3.45)

| | | | persHomeless > 52

| | | | | persEmergShelt <= 159: 1 (9.62/0.83)

| | | | | persEmergShelt > 159: 0 (13.75/0.61)

| | | pctWhite > 93.93: 1 (4.29)

pctKids2Par > 81.3

| persPoverty <= 486

| | kidsBornNevrMarr <= 84

| | | pctAllDivorc <= 4.6

| | | | kidsBornNevrMarr <= 17: 0 (4.9)

| | | | kidsBornNevrMarr > 17: 1 (2.4)

| | | pctAllDivorc > 4.6: 1 (42.27)

| | kidsBornNevrMarr > 84

| | | kidsBornNevrMarr <= 96: 0 (13.4/0.64)

| | | kidsBornNevrMarr > 96: 1 (4.84/0.64)

| persPoverty > 486: 1 (59.83/1.28)

Number of Leaves : 71

Size of the tree : 141

Weight: 2.66

J48 pruned tree

------------------

pctAllDivorc <= 11.36

| medIncome <= 17394: 1 (26.8/1.37)

| medIncome > 17394

| | kidsBornNevrMarr <= 117: 1 (67.81/11.72)

| | kidsBornNevrMarr > 117

| | | medIncome <= 23634

| | | | persPoverty <= 2552

| | | | | medNumBedrm <= 2: 1 (4.29/0.69)

| | | | | medNumBedrm > 2: 0 (5.89/0.96)

| | | | persPoverty > 2552: 0 (81.66/4.89)

| | | medIncome > 23634

| | | | kidsBornNevrMarr <= 2089

| | | | | pctAllDivorc <= 10.84

| | | | | | pctWdiv <= 35.98: 1 (15.02/1.01)

| | | | | | pctWdiv > 35.98

| | | | | | | pctWhite <= 95.12

| | | | | | | | pctKids2Par <= 65.57: 1 (9.1/0.76)

| | | | | | | | pctKids2Par > 65.57

| | | | | | | | | pctBlack <= 7.36

| | | | | | | | | | persEmergShelt <= 22

| | | | | | | | | | | pctWhite <= 93.83

| | | | | | | | | | | | pctBlack <= 1.25: 0 (20.41/0.34)

| | | | | | | | | | | | pctBlack > 1.25

| | | | | | | | | | | | | kidsBornNevrMarr <= 1002: 1 (19.42)

| | | | | | | | | | | | | kidsBornNevrMarr > 1002: 0 (5.03/0.1)

| | | | | | | | | | | pctWhite > 93.83: 0 (29.24/1.86)

| | | | | | | | | | persEmergShelt > 22: 1 (9.39/0.05)

| | | | | | | | | pctBlack > 7.36: 0 (66.7/7.1)

| | | | | | | pctWhite > 95.12

| | | | | | | | medIncome <= 30535

| | | | | | | | | pctBlack <= 0.62

| | | | | | | | | | pctAllDivorc <= 8.96: 1 (4.67)

| | | | | | | | | | pctAllDivorc > 8.96: 0 (2.5/0.76)

| | | | | | | | | pctBlack > 0.62: 0 (10.38/0.52)

| | | | | | | | medIncome > 30535: 1 (22.66/0.34)

| | | | | pctAllDivorc > 10.84

| | | | | | pctBlack <= 2.36

| | | | | | | medIncome <= 28070: 1 (3.29)

| | | | | | | medIncome > 28070: 0 (57.91/0.79)

| | | | | | pctBlack > 2.36

| | | | | | | pctWhite <= 67.89: 0 (14.65)

| | | | | | | pctWhite > 67.89

| | | | | | | | persPoverty <= 3196: 1 (9.66/0.34)

| | | | | | | | persPoverty > 3196: 0 (7.16/0.7)

| | | | kidsBornNevrMarr > 2089: 1 (31.88/2.6)

pctAllDivorc > 11.36

| persEmergShelt <= 223

| | persPoverty <= 660

| | | pctWdiv <= 55.18: 0 (29.24/1.67)

| | | pctWdiv > 55.18: 1 (5.67)

| | persPoverty > 660

| | | pctBlack <= 1.1

| | | | pctKids2Par <= 64.87: 0 (11.27/0.05)

| | | | pctKids2Par > 64.87

| | | | | pctWhite <= 79.67: 0 (4.98/0.05)

| | | | | pctWhite > 79.67

| | | | | | persHomeless <= 2: 1 (84.62/3.93)

| | | | | | persHomeless > 2

| | | | | | | pctBlack <= 1.01: 0 (2.28)

| | | | | | | pctBlack > 1.01: 1 (4.65)

| | | pctBlack > 1.1

| | | | kidsBornNevrMarr <= 597

| | | | | persPoverty <= 3303

| | | | | | medIncome <= 19507: 1 (18.32/0.86)

| | | | | | medIncome > 19507

| | | | | | | persPoverty <= 983

| | | | | | | | pctAllDivorc <= 13.43: 1 (24.21)

| | | | | | | | pctAllDivorc > 13.43: 0 (5.42)

| | | | | | | persPoverty > 983

| | | | | | | | kidsBornNevrMarr <= 277

| | | | | | | | | medNumBedrm <= 2: 0 (28.99/1.02)

| | | | | | | | | medNumBedrm > 2

| | | | | | | | | | persPoverty <= 1686

| | | | | | | | | | | persPoverty <= 1373: 1 (2.37/0.76)

| | | | | | | | | | | persPoverty > 1373: 0 (10.74/0.1)

| | | | | | | | | | persPoverty > 1686: 1 (3.17)

| | | | | | | | kidsBornNevrMarr > 277

| | | | | | | | | pctBlack <= 10.18

| | | | | | | | | | pctKids2Par <= 78.69

| | | | | | | | | | | persPoverty <= 1481

| | | | | | | | | | | | pctBlack <= 4.08: 1 (5.02)

| | | | | | | | | | | | pctBlack > 4.08: 0 (6.67/0.32)

| | | | | | | | | | | persPoverty > 1481: 1 (36.7/3.03)

| | | | | | | | | | pctKids2Par > 78.69: 0 (5.74/0.81)

| | | | | | | | | pctBlack > 10.18

| | | | | | | | | | pctWhite <= 65.61: 1 (4.97)

| | | | | | | | | | pctWhite > 65.61: 0 (22.8/0.65)

| | | | | persPoverty > 3303

| | | | | | persEmergShelt <= 80: 0 (45.0/1.39)

| | | | | | persEmergShelt > 80: 1 (3.09/0.05)

| | | | kidsBornNevrMarr > 597

| | | | | persHomeless <= 1

| | | | | | pctKids2Par <= 55.48

| | | | | | | persEmergShelt <= 14

| | | | | | | | kidsBornNevrMarr <= 873: 0 (3.92)

| | | | | | | | kidsBornNevrMarr > 873

| | | | | | | | | medIncome <= 18546

| | | | | | | | | | kidsBornNevrMarr <= 897: 1 (4.93)

| | | | | | | | | | kidsBornNevrMarr > 897: 0 (9.79)

| | | | | | | | | medIncome > 18546: 1 (31.12/1.51)

| | | | | | | persEmergShelt > 14: 0 (11.79)

| | | | | | pctKids2Par > 55.48

| | | | | | | pctAllDivorc <= 11.91: 0 (6.92/1.56)

| | | | | | | pctAllDivorc > 11.91

| | | | | | | | pctBlack <= 23.79

| | | | | | | | | persEmergShelt <= 25: 1 (46.42/3.42)

| | | | | | | | | persEmergShelt > 25

| | | | | | | | | | pctBlack <= 12.05

| | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | pctKids2Par <= 66.19: 0 (3.02/0.05)

| | | | | | | | | | | | pctKids2Par > 66.19: 1 (8.14)

| | | | | | | | | | | medNumBedrm > 2: 1 (12.17/0.34)

| | | | | | | | | | pctBlack > 12.05: 0 (9.04)

| | | | | | | | pctBlack > 23.79: 1 (46.92/0.15)

| | | | | persHomeless > 1

| | | | | | pctWhite <= 58.66

| | | | | | | pctAllDivorc <= 14.32

| | | | | | | | pctWhite <= 47.05: 0 (2.24/0.34)

| | | | | | | | pctWhite > 47.05: 1 (30.56/2.15)

| | | | | | | pctAllDivorc > 14.32: 0 (3.58)

| | | | | | pctWhite > 58.66

| | | | | | | pctBlack <= 17.79

| | | | | | | | persEmergShelt <= 96

| | | | | | | | | persEmergShelt <= 70

| | | | | | | | | | pctAllDivorc <= 12.19: 1 (8.54/0.37)

| | | | | | | | | | pctAllDivorc > 12.19: 0 (17.75/3.01)

| | | | | | | | | persEmergShelt > 70: 1 (13.36/1.35)

| | | | | | | | persEmergShelt > 96: 0 (8.82/0.32)

| | | | | | | pctBlack > 17.79: 0 (22.37/0.32)

| persEmergShelt > 223

| | medIncome <= 45043: 0 (22.51)

| | medIncome > 45043: 1 (4.65)

Number of Leaves : 67

Size of the tree : 133

Weight: 2.85

J48 pruned tree

------------------

pctWhite <= 98.49

| kidsBornNevrMarr <= 25: 0 (29.87/1.87)

| kidsBornNevrMarr > 25

| | pctAllDivorc <= 14.94

| | | persEmergShelt <= 71

| | | | kidsBornNevrMarr <= 84

| | | | | pctAllDivorc <= 13.43: 1 (24.52)

| | | | | pctAllDivorc > 13.43: 0 (2.84)

| | | | kidsBornNevrMarr > 84

| | | | | persPoverty <= 443

| | | | | | persPoverty <= 413: 1 (3.68)

| | | | | | persPoverty > 413: 0 (26.26/0.18)

| | | | | persPoverty > 443

| | | | | | persPoverty <= 978

| | | | | | | pctWdiv <= 53.53

| | | | | | | | medNumBedrm <= 2: 1 (27.23)

| | | | | | | | medNumBedrm > 2

| | | | | | | | | persEmergShelt <= 2

| | | | | | | | | | pctBlack <= 11.86

| | | | | | | | | | | medIncome <= 33527: 0 (3.66/0.82)

| | | | | | | | | | | medIncome > 33527: 1 (24.29)

| | | | | | | | | | pctBlack > 11.86: 0 (2.89/0.05)

| | | | | | | | | persEmergShelt > 2: 1 (11.54)

| | | | | | | pctWdiv > 53.53

| | | | | | | | persPoverty <= 764

| | | | | | | | | pctWhite <= 96.46: 0 (19.57/3.22)

| | | | | | | | | pctWhite > 96.46: 1 (3.86)

| | | | | | | | persPoverty > 764: 1 (10.3)

| | | | | | persPoverty > 978

| | | | | | | persEmergShelt <= 20

| | | | | | | | pctKids2Par <= 79.27

| | | | | | | | | pctBlack <= 3.07

| | | | | | | | | | pctWhite <= 97.66

| | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | pctAllDivorc <= 14.15

| | | | | | | | | | | | | persHomeless <= 1

| | | | | | | | | | | | | | persPoverty <= 2133: 0 (27.28/3.41)

| | | | | | | | | | | | | | persPoverty > 2133

| | | | | | | | | | | | | | | persPoverty <= 2827: 1 (8.46)

| | | | | | | | | | | | | | | persPoverty > 2827

| | | | | | | | | | | | | | | | pctKids2Par <= 61.06: 1 (5.28/0.36)

| | | | | | | | | | | | | | | | pctKids2Par > 61.06

| | | | | | | | | | | | | | | | | pctWdiv <= 16.61: 1 (3.0)

| | | | | | | | | | | | | | | | | pctWdiv > 16.61

| | | | | | | | | | | | | | | | | | pctKids2Par <= 71.01: 0 (20.69/0.99)

| | | | | | | | | | | | | | | | | | pctKids2Par > 71.01

| | | | | | | | | | | | | | | | | | | pctAllDivorc <= 7.56: 0 (5.22)

| | | | | | | | | | | | | | | | | | | pctAllDivorc > 7.56: 1 (6.05)

| | | | | | | | | | | | | persHomeless > 1: 1 (8.27/1.24)

| | | | | | | | | | | | pctAllDivorc > 14.15: 0 (13.63)

| | | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | | pctWhite <= 95.81

| | | | | | | | | | | | | pctKids2Par <= 70.77: 0 (32.39/0.46)

| | | | | | | | | | | | | pctKids2Par > 70.77

| | | | | | | | | | | | | | pctAllDivorc <= 12.45: 0 (32.81/5.52)

| | | | | | | | | | | | | | pctAllDivorc > 12.45: 1 (8.85/0.18)

| | | | | | | | | | | | pctWhite > 95.81

| | | | | | | | | | | | | pctBlack <= 0.8

| | | | | | | | | | | | | | pctBlack <= 0.47: 1 (4.51/0.55)

| | | | | | | | | | | | | | pctBlack > 0.47: 0 (11.42/1.14)

| | | | | | | | | | | | | pctBlack > 0.8: 1 (6.03)

| | | | | | | | | | pctWhite > 97.66: 1 (14.86/0.53)

| | | | | | | | | pctBlack > 3.07

| | | | | | | | | | pctBlack <= 4.17: 1 (27.36/1.15)

| | | | | | | | | | pctBlack > 4.17

| | | | | | | | | | | pctWdiv <= 49.28

| | | | | | | | | | | | persPoverty <= 2679

| | | | | | | | | | | | | persPoverty <= 2175

| | | | | | | | | | | | | | pctBlack <= 6.27: 1 (11.4)

| | | | | | | | | | | | | | pctBlack > 6.27

| | | | | | | | | | | | | | | pctWdiv <= 41.28

| | | | | | | | | | | | | | | | persHomeless <= 30

| | | | | | | | | | | | | | | | | pctWhite <= 46.31: 1 (6.61)

| | | | | | | | | | | | | | | | | pctWhite > 46.31

| | | | | | | | | | | | | | | | | | pctKids2Par <= 69.15: 0 (30.47/0.65)

| | | | | | | | | | | | | | | | | | pctKids2Par > 69.15

| | | | | | | | | | | | | | | | | | | kidsBornNevrMarr <= 514: 0 (6.44/1.04)

| | | | | | | | | | | | | | | | | | | kidsBornNevrMarr > 514: 1 (3.53)

| | | | | | | | | | | | | | | | persHomeless > 30: 1 (2.97)

| | | | | | | | | | | | | | | pctWdiv > 41.28

| | | | | | | | | | | | | | | | pctBlack <= 7.2: 0 (2.61)

| | | | | | | | | | | | | | | | pctBlack > 7.2: 1 (20.54)

| | | | | | | | | | | | | persPoverty > 2175: 1 (28.45/0.73)

| | | | | | | | | | | | persPoverty > 2679

| | | | | | | | | | | | | pctAllDivorc <= 9.1: 1 (9.1/0.4)

| | | | | | | | | | | | | pctAllDivorc > 9.1

| | | | | | | | | | | | | | pctAllDivorc <= 10.59: 0 (12.95/0.59)

| | | | | | | | | | | | | | pctAllDivorc > 10.59

| | | | | | | | | | | | | | | pctWdiv <= 30.29

| | | | | | | | | | | | | | | | medIncome <= 18546: 0 (7.96)

| | | | | | | | | | | | | | | | medIncome > 18546

| | | | | | | | | | | | | | | | | pctBlack <= 30.12: 1 (24.7/0.58)

| | | | | | | | | | | | | | | | | pctBlack > 30.12

| | | | | | | | | | | | | | | | | | pctWhite <= 54.68: 1 (7.56/0.39)

| | | | | | | | | | | | | | | | | | pctWhite > 54.68: 0 (10.75)

| | | | | | | | | | | | | | | pctWdiv > 30.29

| | | | | | | | | | | | | | | | pctWdiv <= 31.72: 0 (10.11)

| | | | | | | | | | | | | | | | pctWdiv > 31.72

| | | | | | | | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | | | | | | | persEmergShelt <= 2: 0 (9.66)

| | | | | | | | | | | | | | | | | | persEmergShelt > 2

| | | | | | | | | | | | | | | | | | | pctBlack <= 9.83: 1 (9.7/1.14)

| | | | | | | | | | | | | | | | | | | pctBlack > 9.83: 0 (4.83)

| | | | | | | | | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | | | | | | | | persHomeless <= 0

| | | | | | | | | | | | | | | | | | | pctWhite <= 88.96

| | | | | | | | | | | | | | | | | | | | pctWhite <= 77.47: 1 (5.61)

| | | | | | | | | | | | | | | | | | | | pctWhite > 77.47: 0 (22.14/5.17)

| | | | | | | | | | | | | | | | | | | pctWhite > 88.96: 1 (5.82)

| | | | | | | | | | | | | | | | | | persHomeless > 0: 0 (6.71)

| | | | | | | | | | | pctWdiv > 49.28

| | | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | | persEmergShelt <= 3: 0 (12.33/1.31)

| | | | | | | | | | | | | persEmergShelt > 3: 1 (2.46)

| | | | | | | | | | | | medNumBedrm > 2: 0 (6.3)

| | | | | | | | pctKids2Par > 79.27

| | | | | | | | | kidsBornNevrMarr <= 318: 1 (24.25)

| | | | | | | | | kidsBornNevrMarr > 318

| | | | | | | | | | medNumBedrm <= 2: 1 (3.05)

| | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | kidsBornNevrMarr <= 448: 0 (7.67/0.47)

| | | | | | | | | | | kidsBornNevrMarr > 448: 1 (4.34)

| | | | | | | persEmergShelt > 20

| | | | | | | | pctBlack <= 0.74

| | | | | | | | | pctAllDivorc <= 12.29: 0 (22.32/1.03)

| | | | | | | | | pctAllDivorc > 12.29: 1 (3.59/0.03)

| | | | | | | | pctBlack > 0.74

| | | | | | | | | pctWhite <= 88.68

| | | | | | | | | | persEmergShelt <= 58

| | | | | | | | | | | persEmergShelt <= 56

| | | | | | | | | | | | persEmergShelt <= 43

| | | | | | | | | | | | | medIncome <= 27074

| | | | | | | | | | | | | | persEmergShelt <= 27

| | | | | | | | | | | | | | | pctAllDivorc <= 14.9: 0 (9.62/1.21)

| | | | | | | | | | | | | | | pctAllDivorc > 14.9: 1 (2.61)

| | | | | | | | | | | | | | persEmergShelt > 27: 1 (14.99/2.26)

| | | | | | | | | | | | | medIncome > 27074: 1 (32.5/1.29)

| | | | | | | | | | | | persEmergShelt > 43: 0 (18.84/2.45)

| | | | | | | | | | | persEmergShelt > 56: 1 (18.18)

| | | | | | | | | | persEmergShelt > 58: 0 (11.22/1.36)

| | | | | | | | | pctWhite > 88.68: 1 (46.57/0.59)

| | | persEmergShelt > 71

| | | | medIncome <= 36121

| | | | | pctWhite <= 79.88

| | | | | | pctBlack <= 34.26: 0 (59.41/0.54)

| | | | | | pctBlack > 34.26

| | | | | | | pctBlack <= 42.37: 1 (8.06/1.23)

| | | | | | | pctBlack > 42.37: 0 (10.15)

| | | | | pctWhite > 79.88

| | | | | | medNumBedrm <= 2

| | | | | | | pctAllDivorc <= 14.37

| | | | | | | | pctKids2Par <= 69.33: 0 (8.85/0.4)

| | | | | | | | pctKids2Par > 69.33: 1 (12.64/0.66)

| | | | | | | pctAllDivorc > 14.37: 1 (7.31/0.59)

| | | | | | medNumBedrm > 2

| | | | | | | pctWdiv <= 41.01: 0 (8.24)

| | | | | | | pctWdiv > 41.01: 1 (5.17/0.37)

| | | | medIncome > 36121

| | | | | pctAllDivorc <= 13.14: 1 (17.78/0.18)

| | | | | pctAllDivorc > 13.14: 0 (2.11/0.4)

| | pctAllDivorc > 14.94

| | | pctWhite <= 70

| | | | kidsBornNevrMarr <= 2286: 1 (9.43/0.5)

| | | | kidsBornNevrMarr > 2286: 0 (3.5)

| | | pctWhite > 70

| | | | pctKids2Par <= 64.34: 0 (32.12/0.17)

| | | | pctKids2Par > 64.34

| | | | | pctKids2Par <= 67.79: 1 (10.51/1.35)

| | | | | pctKids2Par > 67.79: 0 (27.1/0.34)

pctWhite > 98.49: 0 (69.5/6.72)

Number of Leaves : 86

Size of the tree : 171

Weight: 3.0

J48 pruned tree

------------------

pctKids2Par <= 72.33

| pctKids2Par <= 55.76

| | persPoverty <= 2477: 1 (10.87/1.17)

| | persPoverty > 2477

| | | pctWdiv <= 32.73

| | | | medNumBedrm <= 2

| | | | | pctAllDivorc <= 13.24: 1 (6.2/0.99)

| | | | | pctAllDivorc > 13.24

| | | | | | persEmergShelt <= 64: 0 (9.7)

| | | | | | persEmergShelt > 64: 1 (5.63/2.05)

| | | | medNumBedrm > 2

| | | | | medIncome <= 19030

| | | | | | kidsBornNevrMarr <= 1925: 0 (7.33/1.46)

| | | | | | kidsBornNevrMarr > 1925: 1 (5.74/0.9)

| | | | | medIncome > 19030: 0 (19.94/1.37)

| | | pctWdiv > 32.73: 0 (44.75/0.19)

| pctKids2Par > 55.76

| | pctWdiv <= 21.44: 0 (27.46/2.43)

| | pctWdiv > 21.44

| | | persHomeless <= 1

| | | | pctAllDivorc <= 14.53

| | | | | pctKids2Par <= 70.48

| | | | | | medIncome <= 23487

| | | | | | | medNumBedrm <= 2

| | | | | | | | persHomeless <= 0

| | | | | | | | | persEmergShelt <= 34

| | | | | | | | | | kidsBornNevrMarr <= 1080

| | | | | | | | | | | pctBlack <= 20.39

| | | | | | | | | | | | persPoverty <= 3383

| | | | | | | | | | | | | persEmergShelt <= 11

| | | | | | | | | | | | | | pctKids2Par <= 68.16: 1 (10.54/0.19)

| | | | | | | | | | | | | | pctKids2Par > 68.16

| | | | | | | | | | | | | | | medIncome <= 20066: 0 (3.46)

| | | | | | | | | | | | | | | medIncome > 20066: 1 (2.85)

| | | | | | | | | | | | | persEmergShelt > 11: 0 (3.28)

| | | | | | | | | | | | persPoverty > 3383

| | | | | | | | | | | | | pctWdiv <= 40.85: 0 (17.39/1.56)

| | | | | | | | | | | | | pctWdiv > 40.85: 1 (4.85/1.37)

| | | | | | | | | | | pctBlack > 20.39: 0 (7.83)

| | | | | | | | | | kidsBornNevrMarr > 1080: 1 (3.87)

| | | | | | | | | persEmergShelt > 34: 0 (8.17/0.09)

| | | | | | | | persHomeless > 0

| | | | | | | | | kidsBornNevrMarr <= 492: 0 (3.57)

| | | | | | | | | kidsBornNevrMarr > 492: 1 (3.97/0.25)

| | | | | | | medNumBedrm > 2

| | | | | | | | medIncome <= 22452

| | | | | | | | | pctBlack <= 1.17: 0 (6.32/1.92)

| | | | | | | | | pctBlack > 1.17

| | | | | | | | | | medIncome <= 19906: 1 (19.19)

| | | | | | | | | | medIncome > 19906

| | | | | | | | | | | medIncome <= 20618: 0 (2.87/0.21)

| | | | | | | | | | | medIncome > 20618: 1 (13.05/1.46)

| | | | | | | | medIncome > 22452: 0 (4.31/0.28)

| | | | | | medIncome > 23487

| | | | | | | medIncome <= 25751

| | | | | | | | medNumBedrm <= 2

| | | | | | | | | kidsBornNevrMarr <= 389: 1 (15.85)

| | | | | | | | | kidsBornNevrMarr > 389

| | | | | | | | | | pctBlack <= 12.02: 1 (10.65/1.49)

| | | | | | | | | | pctBlack > 12.02: 0 (3.46)

| | | | | | | | medNumBedrm > 2: 1 (53.29/1.46)

| | | | | | | medIncome > 25751

| | | | | | | | medIncome <= 31250

| | | | | | | | | kidsBornNevrMarr <= 345: 1 (13.33)

| | | | | | | | | kidsBornNevrMarr > 345

| | | | | | | | | | persPoverty <= 1453: 1 (3.1)

| | | | | | | | | | persPoverty > 1453

| | | | | | | | | | | pctWdiv <= 33.01: 1 (5.01/1.46)

| | | | | | | | | | | pctWdiv > 33.01: 0 (20.95/1.21)

| | | | | | | | medIncome > 31250

| | | | | | | | | medNumBedrm <= 2: 1 (38.47/0.3)

| | | | | | | | | medNumBedrm > 2

| | | | | | | | | | medIncome <= 41814

| | | | | | | | | | | pctWhite <= 65.15: 0 (5.89/0.21)

| | | | | | | | | | | pctWhite > 65.15

| | | | | | | | | | | | pctWhite <= 87.64: 1 (14.0)

| | | | | | | | | | | | pctWhite > 87.64

| | | | | | | | | | | | | medIncome <= 34552: 0 (4.73)

| | | | | | | | | | | | | medIncome > 34552: 1 (2.27)

| | | | | | | | | | medIncome > 41814: 1 (10.53)

| | | | | pctKids2Par > 70.48

| | | | | | persEmergShelt <= 11: 0 (26.98/3.91)

| | | | | | persEmergShelt > 11: 1 (3.51/0.31)

| | | | pctAllDivorc > 14.53

| | | | | pctBlack <= 0.76: 1 (4.82/0.27)

| | | | | pctBlack > 0.76

| | | | | | medNumBedrm <= 2

| | | | | | | kidsBornNevrMarr <= 496: 0 (18.89/0.63)

| | | | | | | kidsBornNevrMarr > 496: 1 (9.45/2.16)

| | | | | | medNumBedrm > 2: 0 (11.18/0.09)

| | | persHomeless > 1

| | | | persHomeless <= 52

| | | | | pctWdiv <= 46.03

| | | | | | medIncome <= 31665

| | | | | | | kidsBornNevrMarr <= 205: 1 (4.77)

| | | | | | | kidsBornNevrMarr > 205

| | | | | | | | medNumBedrm <= 2: 0 (49.16/12.62)

| | | | | | | | medNumBedrm > 2

| | | | | | | | | pctBlack <= 41.49: 0 (21.81/0.3)

| | | | | | | | | pctBlack > 41.49: 1 (2.39)

| | | | | | medIncome > 31665

| | | | | | | pctBlack <= 18.08

| | | | | | | | medNumBedrm <= 2

| | | | | | | | | pctAllDivorc <= 10.98: 1 (3.46)

| | | | | | | | | pctAllDivorc > 10.98: 0 (3.02/0.24)

| | | | | | | | medNumBedrm > 2: 1 (12.64/0.63)

| | | | | | | pctBlack > 18.08: 0 (2.11)

| | | | | pctWdiv > 46.03: 0 (31.37/0.25)

| | | | persHomeless > 52

| | | | | pctWdiv <= 31.16: 0 (2.06)

| | | | | pctWdiv > 31.16: 1 (24.09/1.19)

pctKids2Par > 72.33

| persPoverty <= 582

| | pctKids2Par <= 89.65

| | | pctAllDivorc <= 4.6: 0 (12.72/0.12)

| | | pctAllDivorc > 4.6

| | | | persPoverty <= 379: 1 (28.56)

| | | | persPoverty > 379

| | | | | pctWhite <= 94.65

| | | | | | medIncome <= 63607: 1 (20.89)

| | | | | | medIncome > 63607

| | | | | | | pctAllDivorc <= 6.04: 1 (2.53)

| | | | | | | pctAllDivorc > 6.04: 0 (2.78/0.04)

| | | | | pctWhite > 94.65

| | | | | | medIncome <= 32369: 1 (6.13)

| | | | | | medIncome > 32369

| | | | | | | pctAllDivorc <= 5.82: 1 (4.82)

| | | | | | | pctAllDivorc > 5.82

| | | | | | | | kidsBornNevrMarr <= 97: 0 (49.41/2.14)

| | | | | | | | kidsBornNevrMarr > 97

| | | | | | | | | pctBlack <= 1.92: 1 (6.79)

| | | | | | | | | pctBlack > 1.92: 0 (6.02/1.83)

| | pctKids2Par > 89.65: 1 (12.89)

| persPoverty > 582

| | pctAllDivorc <= 12.02

| | | medNumBedrm <= 2

| | | | pctWdiv <= 44.99: 1 (32.98)

| | | | pctWdiv > 44.99

| | | | | pctBlack <= 0.84: 0 (9.12/1.44)

| | | | | pctBlack > 0.84

| | | | | | pctBlack <= 13.09: 1 (29.29/4.11)

| | | | | | pctBlack > 13.09: 0 (3.04)

| | | medNumBedrm > 2

| | | | persHomeless <= 2

| | | | | persHomeless <= 0

| | | | | | pctWdiv <= 49.43

| | | | | | | persPoverty <= 1336

| | | | | | | | persPoverty <= 978: 1 (23.54/1.49)

| | | | | | | | persPoverty > 978

| | | | | | | | | pctKids2Par <= 77.85: 0 (7.88/1.04)

| | | | | | | | | pctKids2Par > 77.85: 1 (2.33)

| | | | | | | persPoverty > 1336

| | | | | | | | pctAllDivorc <= 10.75: 1 (65.74)

| | | | | | | | pctAllDivorc > 10.75

| | | | | | | | | pctBlack <= 14.49: 1 (31.1/1.49)

| | | | | | | | | pctBlack > 14.49: 0 (2.74)

| | | | | | pctWdiv > 49.43

| | | | | | | pctWdiv <= 52.32

| | | | | | | | kidsBornNevrMarr <= 405

| | | | | | | | | pctWhite <= 90.19: 0 (3.35/0.49)

| | | | | | | | | pctWhite > 90.19: 1 (9.85/0.1)

| | | | | | | | kidsBornNevrMarr > 405: 0 (9.29/0.33)

| | | | | | | pctWdiv > 52.32

| | | | | | | | persEmergShelt <= 18

| | | | | | | | | pctKids2Par <= 73.42: 0 (2.01)

| | | | | | | | | pctKids2Par > 73.42: 1 (60.51/0.63)

| | | | | | | | persEmergShelt > 18: 0 (4.92/1.63)

| | | | | persHomeless > 0

| | | | | | pctAllDivorc <= 10.07: 1 (10.4)

| | | | | | pctAllDivorc > 10.07: 0 (3.74/0.34)

| | | | persHomeless > 2: 1 (14.81)

| | pctAllDivorc > 12.02

| | | persHomeless <= 3

| | | | medIncome <= 23487: 0 (3.84)

| | | | medIncome > 23487

| | | | | pctWhite <= 90.55

| | | | | | persHomeless <= 1

| | | | | | | pctKids2Par <= 72.72: 1 (6.62)

| | | | | | | pctKids2Par > 72.72

| | | | | | | | pctAllDivorc <= 13.22: 0 (7.14/0.01)

| | | | | | | | pctAllDivorc > 13.22

| | | | | | | | | pctWhite <= 89.69: 1 (3.19)

| | | | | | | | | pctWhite > 89.69: 0 (2.09)

| | | | | | persHomeless > 1: 1 (2.88)

| | | | | pctWhite > 90.55: 1 (13.98)

| | | persHomeless > 3: 0 (13.64/0.88)

Number of Leaves : 94

Size of the tree : 187

Weight: 2.88

J48 pruned tree

------------------

persPoverty <= 25484

| pctAllDivorc <= 14.94

| | pctBlack <= 7.24

| | | pctBlack <= 1.82

| | | | pctBlack <= 0.64

| | | | | pctWdiv <= 50.73

| | | | | | pctWhite <= 98.32

| | | | | | | pctAllDivorc <= 9.2

| | | | | | | | persEmergShelt <= 17: 1 (34.88/0.05)

| | | | | | | | persEmergShelt > 17

| | | | | | | | | pctWhite <= 87.31: 0 (2.51)

| | | | | | | | | pctWhite > 87.31: 1 (6.5)

| | | | | | | pctAllDivorc > 9.2

| | | | | | | | medIncome <= 23487: 0 (10.86/2.32)

| | | | | | | | medIncome > 23487

| | | | | | | | | medNumBedrm <= 2: 1 (7.48/0.01)

| | | | | | | | | medNumBedrm > 2

| | | | | | | | | | pctAllDivorc <= 10.57: 0 (4.08/0.41)

| | | | | | | | | | pctAllDivorc > 10.57: 1 (12.32/0.77)

| | | | | | pctWhite > 98.32: 1 (44.11)

| | | | | pctWdiv > 50.73

| | | | | | pctWdiv <= 52.79

| | | | | | | pctAllDivorc <= 9.04: 1 (3.07)

| | | | | | | pctAllDivorc > 9.04

| | | | | | | | persEmergShelt <= 0: 0 (10.42)

| | | | | | | | persEmergShelt > 0

| | | | | | | | | persEmergShelt <= 3: 1 (2.26)

| | | | | | | | | persEmergShelt > 3: 0 (2.22/0.1)

| | | | | | pctWdiv > 52.79

| | | | | | | pctAllDivorc <= 8.03

| | | | | | | | kidsBornNevrMarr <= 88: 1 (16.74/0.87)

| | | | | | | | kidsBornNevrMarr > 88

| | | | | | | | | persHomeless <= 1

| | | | | | | | | | medNumBedrm <= 2: 1 (3.84/1.45)

| | | | | | | | | | medNumBedrm > 2: 0 (13.61/1.33)

| | | | | | | | | persHomeless > 1: 1 (2.5)

| | | | | | | pctAllDivorc > 8.03: 1 (25.63)

| | | | pctBlack > 0.64

| | | | | pctBlack <= 0.7: 0 (22.81/0.72)

| | | | | pctBlack > 0.7

| | | | | | medIncome <= 37911

| | | | | | | persEmergShelt <= 6

| | | | | | | | pctWhite <= 95.78: 0 (66.34/3.7)

| | | | | | | | pctWhite > 95.78: 1 (18.87/1.11)

| | | | | | | persEmergShelt > 6

| | | | | | | | persHomeless <= 17: 1 (34.54/2.11)

| | | | | | | | persHomeless > 17: 0 (7.43)

| | | | | | medIncome > 37911

| | | | | | | pctAllDivorc <= 4.61: 0 (6.63/0.13)

| | | | | | | pctAllDivorc > 4.61

| | | | | | | | medNumBedrm <= 2

| | | | | | | | | medIncome <= 50714: 1 (8.03/0.87)

| | | | | | | | | medIncome > 50714: 0 (2.36)

| | | | | | | | medNumBedrm > 2: 1 (46.03/1.69)

| | | pctBlack > 1.82

| | | | persEmergShelt <= 19

| | | | | medNumBedrm <= 2

| | | | | | pctWhite <= 95.22

| | | | | | | pctBlack <= 5.55

| | | | | | | | pctBlack <= 2.54

| | | | | | | | | pctBlack <= 2.47: 1 (5.33/0.77)

| | | | | | | | | pctBlack > 2.47: 0 (2.97)

| | | | | | | | pctBlack > 2.54: 1 (97.76/2.46)

| | | | | | | pctBlack > 5.55: 0 (9.04/2.6)

| | | | | | pctWhite > 95.22: 0 (6.26/0.12)

| | | | | medNumBedrm > 2

| | | | | | persHomeless <= 6: 1 (85.8/6.22)

| | | | | | persHomeless > 6

| | | | | | | pctWhite <= 85.05: 0 (5.23)

| | | | | | | pctWhite > 85.05: 1 (5.38)

| | | | persEmergShelt > 19

| | | | | pctWdiv <= 45.23

| | | | | | pctWdiv <= 37.82

| | | | | | | pctWdiv <= 23: 0 (2.66)

| | | | | | | pctWdiv > 23: 1 (10.46/0.32)

| | | | | | pctWdiv > 37.82: 0 (12.6/1.33)

| | | | | pctWdiv > 45.23: 1 (17.63/0.47)

| | pctBlack > 7.24

| | | pctWhite <= 89.38

| | | | pctWdiv <= 35.83

| | | | | pctBlack <= 13.5

| | | | | | medIncome <= 28745

| | | | | | | persEmergShelt <= 19: 0 (25.72/0.05)

| | | | | | | persEmergShelt > 19

| | | | | | | | persEmergShelt <= 28: 1 (7.18/0.72)

| | | | | | | | persEmergShelt > 28: 0 (5.42)

| | | | | | medIncome > 28745: 1 (11.44/0.26)

| | | | | pctBlack > 13.5

| | | | | | persPoverty <= 13508

| | | | | | | medIncome <= 25422

| | | | | | | | pctKids2Par <= 71.33

| | | | | | | | | persPoverty <= 2914

| | | | | | | | | | medIncome <= 22129: 1 (27.46/2.69)

| | | | | | | | | | medIncome > 22129: 0 (2.62/0.05)

| | | | | | | | | persPoverty > 2914

| | | | | | | | | | pctWhite <= 65.15: 0 (22.58/3.34)

| | | | | | | | | | pctWhite > 65.15: 1 (7.89/1.83)

| | | | | | | | pctKids2Par > 71.33: 1 (13.63/0.72)

| | | | | | | medIncome > 25422

| | | | | | | | pctWdiv <= 31.72

| | | | | | | | | pctKids2Par <= 57.54: 0 (4.46)

| | | | | | | | | pctKids2Par > 57.54

| | | | | | | | | | pctWhite <= 63.24: 1 (16.95)

| | | | | | | | | | pctWhite > 63.24: 0 (2.65/0.88)

| | | | | | | | pctWdiv > 31.72: 1 (57.47/0.83)

| | | | | | persPoverty > 13508: 0 (11.63/0.87)

| | | | pctWdiv > 35.83

| | | | | medIncome <= 21952: 0 (30.35/0.78)

| | | | | medIncome > 21952

| | | | | | medNumBedrm <= 2

| | | | | | | persPoverty <= 3196

| | | | | | | | pctAllDivorc <= 12.97: 1 (13.68/1.03)

| | | | | | | | pctAllDivorc > 12.97: 0 (12.95/0.85)

| | | | | | | persPoverty > 3196

| | | | | | | | medIncome <= 33273: 0 (33.11/0.05)

| | | | | | | | medIncome > 33273: 1 (4.11/0.16)

| | | | | | medNumBedrm > 2

| | | | | | | kidsBornNevrMarr <= 270

| | | | | | | | persEmergShelt <= 2: 0 (30.48/1.24)

| | | | | | | | persEmergShelt > 2: 1 (5.07)

| | | | | | | kidsBornNevrMarr > 270

| | | | | | | | persHomeless <= 0: 1 (47.62/9.75)

| | | | | | | | persHomeless > 0

| | | | | | | | | pctKids2Par <= 67.94: 0 (5.88)

| | | | | | | | | pctKids2Par > 67.94: 1 (2.09/0.06)

| | | pctWhite > 89.38: 1 (29.85/2.03)

| pctAllDivorc > 14.94

| | persEmergShelt <= 0

| | | kidsBornNevrMarr <= 183: 0 (5.44)

| | | kidsBornNevrMarr > 183

| | | | persPoverty <= 2196: 1 (9.51/0.24)

| | | | persPoverty > 2196

| | | | | kidsBornNevrMarr <= 589: 0 (6.49/0.11)

| | | | | kidsBornNevrMarr > 589: 1 (2.11/0.47)

| | persEmergShelt > 0: 0 (44.29/2.47)

persPoverty > 25484: 0 (42.65/1.9)

Number of Leaves : 69

Size of the tree : 137

Weight: 2.87

J48 pruned tree

------------------

pctWhite <= 98.5

| medIncome <= 19030

| | persPoverty <= 11887

| | | pctAllDivorc <= 14.42

| | | | medNumBedrm <= 2

| | | | | pctWhite <= 65.15: 0 (3.78)

| | | | | pctWhite > 65.15

| | | | | | pctBlack <= 2.42

| | | | | | | persHomeless <= 0

| | | | | | | | pctAllDivorc <= 9.6: 1 (8.81/0.47)

| | | | | | | | pctAllDivorc > 9.6: 0 (2.48/0.72)

| | | | | | | persHomeless > 0: 0 (2.23)

| | | | | | pctBlack > 2.42: 1 (35.54/0.51)

| | | | medNumBedrm > 2

| | | | | medIncome <= 16553: 0 (2.1)

| | | | | medIncome > 16553: 1 (37.59/1.8)

| | | pctAllDivorc > 14.42

| | | | pctKids2Par <= 60.5: 0 (7.74)

| | | | pctKids2Par > 60.5: 1 (6.37)

| | persPoverty > 11887: 0 (6.98)

| medIncome > 19030

| | pctBlack <= 0.48

| | | pctKids2Par <= 87.66

| | | | kidsBornNevrMarr <= 248: 1 (42.4/0.6)

| | | | kidsBornNevrMarr > 248

| | | | | pctBlack <= 0.34

| | | | | | pctBlack <= 0.26: 1 (6.2/1.52)

| | | | | | pctBlack > 0.26: 0 (6.37/0.57)

| | | | | pctBlack > 0.34: 1 (5.71)

| | | pctKids2Par > 87.66

| | | | pctBlack <= 0.22: 0 (11.3/0.08)

| | | | pctBlack > 0.22: 1 (2.03/0.38)

| | pctBlack > 0.48

| | | pctKids2Par <= 81.03

| | | | persHomeless <= 0

| | | | | medIncome <= 50987

| | | | | | medIncome <= 40221

| | | | | | | pctWdiv <= 50.58

| | | | | | | | pctBlack <= 34.48

| | | | | | | | | persPoverty <= 1226

| | | | | | | | | | kidsBornNevrMarr <= 32: 0 (10.34)

| | | | | | | | | | kidsBornNevrMarr > 32

| | | | | | | | | | | medIncome <= 40216

| | | | | | | | | | | | pctBlack <= 0.49: 0 (6.75)

| | | | | | | | | | | | pctBlack > 0.49: 1 (45.68/2.32)

| | | | | | | | | | | medIncome > 40216: 0 (7.42)

| | | | | | | | | persPoverty > 1226

| | | | | | | | | | pctKids2Par <= 77.62

| | | | | | | | | | | pctAllDivorc <= 9.56

| | | | | | | | | | | | persEmergShelt <= 62: 1 (22.2/1.31)

| | | | | | | | | | | | persEmergShelt > 62: 0 (6.43)

| | | | | | | | | | | pctAllDivorc > 9.56

| | | | | | | | | | | | pctAllDivorc <= 9.7: 0 (23.56/0.08)

| | | | | | | | | | | | pctAllDivorc > 9.7

| | | | | | | | | | | | | pctAllDivorc <= 11.04

| | | | | | | | | | | | | | pctKids2Par <= 74.78

| | | | | | | | | | | | | | | persEmergShelt <= 70: 1 (27.44/0.97)

| | | | | | | | | | | | | | | persEmergShelt > 70: 0 (2.14/0.17)

| | | | | | | | | | | | | | pctKids2Par > 74.78

| | | | | | | | | | | | | | | pctBlack <= 6.15: 1 (4.3/0.38)

| | | | | | | | | | | | | | | pctBlack > 6.15: 0 (13.57)

| | | | | | | | | | | | | pctAllDivorc > 11.04

| | | | | | | | | | | | | | pctWdiv <= 34.6

| | | | | | | | | | | | | | | pctWdiv <= 34.5

| | | | | | | | | | | | | | | | pctBlack <= 7.75

| | | | | | | | | | | | | | | | | persPoverty <= 7036

| | | | | | | | | | | | | | | | | | pctBlack <= 3.07: 0 (4.19/0.55)

| | | | | | | | | | | | | | | | | | pctBlack > 3.07: 1 (23.86)

| | | | | | | | | | | | | | | | | persPoverty > 7036: 0 (9.57/0.05)

| | | | | | | | | | | | | | | | pctBlack > 7.75

| | | | | | | | | | | | | | | | | medIncome <= 29961

| | | | | | | | | | | | | | | | | | persPoverty <= 5739: 0 (44.96/2.17)

| | | | | | | | | | | | | | | | | | persPoverty > 5739: 1 (11.09/1.53)

| | | | | | | | | | | | | | | | | medIncome > 29961: 1 (2.69)

| | | | | | | | | | | | | | | pctWdiv > 34.5: 1 (8.74)

| | | | | | | | | | | | | | pctWdiv > 34.6

| | | | | | | | | | | | | | | medIncome <= 23207: 0 (52.35/3.22)

| | | | | | | | | | | | | | | medIncome > 23207

| | | | | | | | | | | | | | | | pctAllDivorc <= 14.02

| | | | | | | | | | | | | | | | | pctAllDivorc <= 11.33

| | | | | | | | | | | | | | | | | | pctAllDivorc <= 11.22: 0 (2.98/0.92)

| | | | | | | | | | | | | | | | | | pctAllDivorc > 11.22: 1 (5.5/0.06)

| | | | | | | | | | | | | | | | | pctAllDivorc > 11.33

| | | | | | | | | | | | | | | | | | medNumBedrm <= 2

| | | | | | | | | | | | | | | | | | | medIncome <= 31889: 0 (25.31/1.65)

| | | | | | | | | | | | | | | | | | | medIncome > 31889: 1 (2.8/0.46)

| | | | | | | | | | | | | | | | | | medNumBedrm > 2

| | | | | | | | | | | | | | | | | | | pctWhite <= 90.52

| | | | | | | | | | | | | | | | | | | | medIncome <= 27980

| | | | | | | | | | | | | | | | | | | | | pctBlack <= 12.83: 1 (6.39)

| | | | | | | | | | | | | | | | | | | | | pctBlack > 12.83: 0 (16.39/1.41)

| | | | | | | | | | | | | | | | | | | | medIncome > 27980: 0 (41.52/2.3)

| | | | | | | | | | | | | | | | | | | pctWhite > 90.52: 1 (5.0/0.47)

| | | | | | | | | | | | | | | | pctAllDivorc > 14.02

| | | | | | | | | | | | | | | | | pctKids2Par <= 70.17

| | | | | | | | | | | | | | | | | | persPoverty <= 3196: 0 (5.25)

| | | | | | | | | | | | | | | | | | persPoverty > 3196: 1 (3.76/0.97)

| | | | | | | | | | | | | | | | | pctKids2Par > 70.17: 1 (9.78)

| | | | | | | | | | pctKids2Par > 77.62: 0 (22.09/1.1)

| | | | | | | | pctBlack > 34.48: 0 (26.34/1.03)

| | | | | | | pctWdiv > 50.58

| | | | | | | | pctKids2Par <= 77.62

| | | | | | | | | pctKids2Par <= 70.37: 1 (4.23/1.5)

| | | | | | | | | pctKids2Par > 70.37: 0 (67.16/2.12)

| | | | | | | | pctKids2Par > 77.62

| | | | | | | | | pctKids2Par <= 78.68: 1 (6.82)

| | | | | | | | | pctKids2Par > 78.68: 0 (15.42/1.55)

| | | | | | medIncome > 40221

| | | | | | | pctWhite <= 53.97: 0 (12.22/1.88)

| | | | | | | pctWhite > 53.97: 1 (26.03/1.08)

| | | | | medIncome > 50987: 0 (25.34/1.18)

| | | | persHomeless > 0

| | | | | persPoverty <= 1194: 0 (14.95/0.74)

| | | | | persPoverty > 1194

| | | | | | persEmergShelt <= 160

| | | | | | | medIncome <= 41096

| | | | | | | | medNumBedrm <= 2: 1 (133.06/30.22)

| | | | | | | | medNumBedrm > 2

| | | | | | | | | medIncome <= 26261

| | | | | | | | | | pctBlack <= 3.84: 1 (5.13/0.44)

| | | | | | | | | | pctBlack > 3.84: 0 (17.1/0.08)

| | | | | | | | | medIncome > 26261

| | | | | | | | | | persHomeless <= 95: 1 (36.31/4.26)

| | | | | | | | | | persHomeless > 95: 0 (6.75)

| | | | | | | medIncome > 41096

| | | | | | | | medIncome <= 42453: 0 (12.67/0.03)

| | | | | | | | medIncome > 42453

| | | | | | | | | medIncome <= 51524: 1 (4.14)

| | | | | | | | | medIncome > 51524: 0 (5.53/1.32)

| | | | | | persEmergShelt > 160

| | | | | | | pctAllDivorc <= 11.7

| | | | | | | | medIncome <= 29407: 0 (3.45)

| | | | | | | | medIncome > 29407: 1 (9.89/0.07)

| | | | | | | pctAllDivorc > 11.7: 0 (26.18)

| | | pctKids2Par > 81.03

| | | | medNumBedrm <= 3

| | | | | pctAllDivorc <= 4.61: 0 (3.51/0.07)

| | | | | pctAllDivorc > 4.61: 1 (38.9/3.44)

| | | | medNumBedrm > 3: 1 (4.1)

pctWhite > 98.5

| pctBlack <= 0.54

| | kidsBornNevrMarr <= 46: 0 (4.49/1.43)

| | kidsBornNevrMarr > 46: 1 (44.2/0.47)

| pctBlack > 0.54: 0 (4.4/1.34)

Number of Leaves : 73

Size of the tree : 145

Weight: 2.62

Number of performed Iterations: 10

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 464 77.4624 %

Incorrectly Classified Instances 135 22.5376 %

Kappa statistic 0.4785

Mean absolute error 0.2181

Root mean squared error 0.4483

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.602 0.138 0.688 0.602 0.642 0.481 0.831 0.726 0

0.862 0.398 0.811 0.862 0.836 0.481 0.831 0.887 1

Weighted Avg. 0.775 0.311 0.769 0.775 0.771 0.481 0.831 0.833

=== Confusion Matrix ===

a b <-- classified as

121 80 | a = 0

55 343 | b = 1

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

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0.862 0.398 0.811 0.862 0.836 0.481 0.831 0.887 1

Weighted Avg. 0.775 0.311 0.769 0.775 0.771 0.481 0.831 0.833

=== Confusion Matrix ===

a b <-- classified as

121 80 | a = 0

55 343 | b = 1

## AdaBoostM1 with NaiveBayes Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

Naive Bayes Classifier

Class

Attribute 0 1

(0.34) (0.66)

=========================================

pctBlack

mean 16.6775 4.7559

std. dev. 18.461 8.4149

weight sum 410 810

precision 0.1229 0.1229

pctWhite

mean 74.9498 89.1821

std. dev. 18.1747 12.469

weight sum 410 810

precision 0.0922 0.0922

medIncome

mean 26943.0189 38108.4673

std. dev. 8824.6048 14238.1532

weight sum 410 810

precision 96.3552 96.3552

pctWdiv

mean 36.9869 47.8489

std. dev. 10.6441 12.1074

weight sum 410 810

precision 0.0682 0.0682

persPoverty

mean 19166.2482 2499.0162

std. dev. 84839.4888 4191.4031

weight sum 410 810

precision 1236.5321 1236.5321

pctAllDivorc

mean 12.9794 9.6623

std. dev. 2.5568 2.6733

weight sum 410 810

precision 0.0215 0.0215

pctKids2Par

mean 62.1493 76.4552

std. dev. 10.9557 8.9928

weight sum 410 810

precision 0.0706 0.0706

kidsBornNevrMarr

mean 5919.5829 446.2797

std. dev. 31866.0269 1176.6982

weight sum 410 810

precision 666.9494 666.9494

medNumBedrm

mean 2.3805 2.7667

std. dev. 0.4955 0.4726

weight sum 410 810

precision 1 1

persEmergShelt

mean 179.5443 8.8589

std. dev. 1237.9729 46.3828

weight sum 410 810

precision 123.7196 123.7196

persHomeless

mean 50.654 3.4186

std. dev. 546.477 42.7415

weight sum 410 810

precision 125.8675 125.8675

Weight: 1.11

Naive Bayes Classifier

Class

Attribute 0 1

(0.53) (0.47)

=========================================

pctBlack

mean 11.9918 6.2101

std. dev. 14.5373 11.441

weight sum 645.1695 574.8305

precision 0.1229 0.1229

pctWhite

mean 79.4195 87.4087

std. dev. 15.5 14.8319

weight sum 645.1695 574.8305

precision 0.0922 0.0922

medIncome

mean 27822.1391 37507.4266

std. dev. 9390.2755 14144.5744

weight sum 645.1695 574.8305

precision 96.3552 96.3552

pctWdiv

mean 38.4087 46.9113

std. dev. 10.6527 12.575

weight sum 645.1695 574.8305

precision 0.0682 0.0682

persPoverty

mean 10654.8148 3310.8137

std. dev. 55670.5948 6239.6656

weight sum 645.1695 574.8305

precision 1236.5321 1236.5321

pctAllDivorc

mean 12.7101 9.836

std. dev. 2.6396 2.7267

weight sum 645.1695 574.8305

precision 0.0215 0.0215

pctKids2Par

mean 64.8038 75.3751

std. dev. 9.64 10.0258

weight sum 645.1695 574.8305

precision 0.0706 0.0706

kidsBornNevrMarr

mean 2971.885 693.0707

std. dev. 20869.1013 1809.8159

weight sum 645.1695 574.8305

precision 666.9494 666.9494

medNumBedrm

mean 2.3981 2.7556

std. dev. 0.4937 0.4757

weight sum 645.1695 574.8305

precision 1 1

persEmergShelt

mean 89.5927 15.5878

std. dev. 809.0675 68.528

weight sum 645.1695 574.8305

precision 123.7196 123.7196

persHomeless

mean 21.6544 7.6527

std. dev. 356.0272 70.0914

weight sum 645.1695 574.8305

precision 125.8675 125.8675

Weight: 0.0

Number of performed Iterations: 2

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 464 77.4624 %

Incorrectly Classified Instances 135 22.5376 %

Kappa statistic 0.4276

Mean absolute error 0.3613

Root mean squared error 0.4184

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.428 0.050 0.811 0.428 0.560 0.467 0.691 0.551 0

0.950 0.572 0.767 0.950 0.848 0.467 0.691 0.763 1

Weighted Avg. 0.775 0.397 0.782 0.775 0.752 0.467 0.691 0.692

=== Confusion Matrix ===

a b <-- classified as

86 115 | a = 0

20 378 | b = 1

## AdaBoostM1 with IBk (KNN) Model

=== Classifier model ===

AdaBoostM1: Base classifiers and their weights:

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 1.58

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.75

IB1 instance-based classifier

using 10 nearest neighbour(s) for classification

Weight: 0.1

Number of performed Iterations: 3

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 489 81.6361 %

Incorrectly Classified Instances 110 18.3639 %

Kappa statistic 0.5882

Mean absolute error 0.281

Root mean squared error 0.3949

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.726 0.138 0.726 0.726 0.726 0.588 0.795 0.645 0

0.862 0.274 0.862 0.862 0.862 0.588 0.795 0.843 1

Weighted Avg. 0.816 0.228 0.816 0.816 0.816 0.588 0.795 0.777

=== Confusion Matrix ===

a b <-- classified as

146 55 | a = 0

55 343 | b = 1

## Multilayer Perceptron Model

=== Classifier model ===

Sigmoid Node 0

Inputs Weights

Threshold 4.124485107852349

Node 2 -1.658576950601059

Node 3 -0.9047897573600795

Node 4 -2.179016644764059

Node 5 -2.1221885877712534

Node 6 -3.7231637712248298

Node 7 -3.0461340922436313

Sigmoid Node 1

Inputs Weights

Threshold -4.124485114489142

Node 2 1.658576951866487

Node 3 0.9047897523675852

Node 4 2.1790166482394255

Node 5 2.122188595181687

Node 6 3.723163866388449

Node 7 3.046134094251707

Sigmoid Node 2

Inputs Weights

Threshold -1.4437621285970434

Attrib pctBlack 5.448893714716502

Attrib pctWhite 0.08924599419261041

Attrib medIncome 15.343450208845724

Attrib pctWdiv 0.04496059996746829

Attrib persPoverty -8.32511544697613

Attrib pctAllDivorc 0.8873013606627912

Attrib pctKids2Par 8.192183068282029

Attrib kidsBornNevrMarr -3.6790861695901023

Attrib medNumBedrm 8.37663832871662

Attrib persEmergShelt -4.410353869554824

Attrib persHomeless 0.7305484708152389

Sigmoid Node 3

Inputs Weights

Threshold -2.3099079271497622

Attrib pctBlack 7.914302238734289

Attrib pctWhite 13.776991730895777

Attrib medIncome 4.695812453472725

Attrib pctWdiv -0.8821560707330621

Attrib persPoverty -2.749467895649432

Attrib pctAllDivorc -7.985853472466651

Attrib pctKids2Par 2.4753726282031234

Attrib kidsBornNevrMarr 0.011725182012220448

Attrib medNumBedrm 2.2240067732406934

Attrib persEmergShelt -0.762991580976126

Attrib persHomeless 1.747554507296875

Sigmoid Node 4

Inputs Weights

Threshold -3.2784293683582755

Attrib pctBlack 8.057499634267266

Attrib pctWhite 15.764309340027307

Attrib medIncome 2.219640551330111

Attrib pctWdiv -3.4041271789995413

Attrib persPoverty -1.1793293312359343

Attrib pctAllDivorc -7.152612136049304

Attrib pctKids2Par 2.841930176434212

Attrib kidsBornNevrMarr 1.3406689067605653

Attrib medNumBedrm -5.942623041644197

Attrib persEmergShelt 0.13370635415610493

Attrib persHomeless 2.7521033446291954

Sigmoid Node 5

Inputs Weights

Threshold -7.358387572390948

Attrib pctBlack -6.5448608582159755

Attrib pctWhite 2.307343313936303

Attrib medIncome 0.5803308907118976

Attrib pctWdiv -14.05766531211955

Attrib persPoverty -6.363102247324845

Attrib pctAllDivorc -9.716512873039928

Attrib pctKids2Par 4.816420758975732

Attrib kidsBornNevrMarr -1.5732605219136753

Attrib medNumBedrm -3.2026273344356078

Attrib persEmergShelt -1.1801594967533322

Attrib persHomeless 5.132043310961777

Sigmoid Node 6

Inputs Weights

Threshold -3.074001953448715

Attrib pctBlack -1.1855531212981483

Attrib pctWhite 2.818606154057244

Attrib medIncome 5.472257964802654

Attrib pctWdiv 1.0006015549220824

Attrib persPoverty 0.41340311965587756

Attrib pctAllDivorc 0.8862128973125385

Attrib pctKids2Par 8.04369762559195

Attrib kidsBornNevrMarr 1.5727391530419272

Attrib medNumBedrm 2.2860693293224226

Attrib persEmergShelt 1.4928078790180954

Attrib persHomeless 2.97712428176102

Sigmoid Node 7

Inputs Weights

Threshold 0.14092309174161413

Attrib pctBlack -2.189081336192281

Attrib pctWhite -6.920817976276614

Attrib medIncome 14.1701261868848

Attrib pctWdiv -3.2774007078907967

Attrib persPoverty -2.665355420061445

Attrib pctAllDivorc -9.328640966524274

Attrib pctKids2Par 1.505201691635561

Attrib kidsBornNevrMarr -1.051950773392726

Attrib medNumBedrm 0.006067642257261817

Attrib persEmergShelt -1.1850010553291404

Attrib persHomeless 0.05849522740061677

Class 0

Input

Node 0

Class 1

Input

Node 1

=== Re-evaluation on test set ===

User supplied test set

Relation: project-crime-binary-weka.filters.supervised.instance.Resample-B0.0-S1-Z14.16-no-replacement-V-weka.filters.unsupervised.attribute.Remove-R1-2-weka.filters.supervised.instance.Resample-B0.0-S1-Z33.0-no-replacement-weka.filters.unsupervised.attribute.Remove-R1-2,5-12,14-15,17-27,29-41,43-44,46-49,51-70,72-91,94-101

Instances: unknown (yet). Reading incrementally

Attributes: 12

=== Summary ===

Correctly Classified Instances 495 82.6377 %

Incorrectly Classified Instances 104 17.3623 %

Kappa statistic 0.628

Mean absolute error 0.2578

Root mean squared error 0.3662

Total Number of Instances 599

=== Detailed Accuracy By Class ===

TP Rate FP Rate Precision Recall F-Measure MCC ROC Area PRC Area Class

0.836 0.178 0.703 0.836 0.764 0.634 0.889 0.787 0

0.822 0.164 0.908 0.822 0.863 0.634 0.889 0.936 1

Weighted Avg. 0.826 0.169 0.839 0.826 0.830 0.634 0.889 0.886

=== Confusion Matrix ===

a b <-- classified as

168 33 | a = 0

71 327 | b = 1