Anglo

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Contents


```
# Markdown
library(knitr)
library(kableExtra)
```

```
## Warning: package 'kableExtra' was built under R version 4.0.3
```

```
# Data Analysis
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 4.0.3
```

```
library(naniar)
library(caret)
library(rpart)
library(rpart.plot)
library(rattle)
```

Check the operation system

```
sessionInfo()
```

```
## R version 4.0.2 (2020-06-22)
## Platform: x86_64-w64-mingw32/x64 (64-bit)
## Running under: Windows 10 x64 (build 18363)
##
## Matrix products: default
##
## locale:
## [1] LC_COLLATE=English_United States.1252
## [2] LC_CTYPE=English_United States.1252
## [3] LC_MONETARY=English_United States.1252
## [4] LC_NUMERIC=C
```

```
## [5] LC_TIME=English_United States.1252
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
##  [1] rattle_5.4.0     bitops_1.0-6     tibble_3.0.3     rpart.plot_3.0.8
##  [5] rpart_4.1-15     caret_6.0-86     ggplot2_3.3.2    lattice_0.20-41
##  [9] naniar_0.5.2     dplyr_1.0.4      kableExtra_1.3.1 knitr_1.30
##
## loaded via a namespace (and not attached):
##  [1] Rcpp_1.0.5           lubridate_1.7.9      class_7.3-17
##  [4] assertthat_0.2.1     digest_0.6.25        ipred_0.9-9
##  [7] foreach_1.5.0        R6_2.4.1             plyr_1.8.6
## [10] visdat_0.5.3         stats4_4.0.2         evaluate_0.14
## [13] httr_1.4.2           pillar_1.4.6         rlang_0.4.10
## [16] rstudioapi_0.11      data.table_1.13.0    Matrix_1.2-18
## [19] rmarkdown_2.5        splines_4.0.2        webshot_0.5.2
## [22] gower_0.2.2          stringr_1.4.0        munsell_0.5.0
## [25] compiler_4.0.2       xfun_0.18            pkgconfig_2.0.3
## [28] htmltools_0.5.1.1    nnet_7.3-14          tidyselect_1.1.0
## [31] prodlim_2019.11.13   codetools_0.2-16     viridisLite_0.3.0
## [34] crayon_1.3.4         withr_2.4.1          MASS_7.3-51.6
## [37] recipes_0.1.13       ModelMetrics_1.2.2.2 grid_4.0.2
## [40] nlme_3.1-148         gtable_0.3.0         lifecycle_0.2.0
## [43] DBI_1.1.1            magrittr_1.5         pROC_1.16.2
## [46] scales_1.1.1         stringi_1.4.6        reshape2_1.4.4
## [49] timeDate_3043.102    xml2_1.3.2           ellipsis_0.3.1
## [52] generics_0.0.2       vctrs_0.3.6          lava_1.6.7
## [55] iterators_1.0.12     tools_4.0.2          glue_1.4.1
## [58] purrr_0.3.4          survival_3.1-12      yaml_2.2.1
## [61] colorspace_1.4-1     rvest_0.3.6
```

Versions of packages

```
pkg <- tibble::tibble(
  Package = names(installed.packages()[,3]),
  Version = unname(installed.packages()[,3])
)

usePackages <- c("dplyr","naniar","caret","rpart","rpart.plot","rattle")
version <- dplyr::filter(pkg , Package %in% usePackages )
kable(version,caption = "Versions of packages")%>%
  kable_styling(latex_options =c("striped", "hold_position"))
```

Table 1: Versions of packages

Package	Version
caret	6.0-86
dplyr	1.0.4
naniar	0.5.2
rattle	5.4.0
rpart	4.1-15
rpart.plot	3.0.8
rpart	4.1-15

Data

```
dta <- read.csv("PV1.txt",sep="",header = FALSE)
nrow(dta)#sample size
```

```
## [1] 25610
```

```
colnames(dta) <- c("ST004D01T","IMMIG","ESCS","MOTIVAT","ANXTEST","EMOSUPS",
                   "BELONG","TEACHSUP","PVSCIE","ST016Q01NA","SENWT",
                   "IMMIG2","IMMIG3")
dta <- as.data.frame(dta[,c("ST004D01T","IMMIG","ESCS","MOTIVAT","ANXTEST",
                            "EMOSUPS","BELONG","TEACHSUP","PVSCIE","ST016Q01NA")])
dta <- dta%>%mutate_at(c("ST016Q01NA"),as.numeric)%>%replace_with_na_all(condition = ~.x==9999)
apply(dta,2,function(x) sum(is.na(x)/nrow(dta)))
```

```
##  ST004D01T      IMMIG       ESCS    MOTIVAT    ANXTEST    EMOSUPS     BELONG
## 0.00000000 0.04888715 0.03080828 0.02635689 0.02479500 0.02338930 0.02780164
##   TEACHSUP     PVSCIE ST016Q01NA
## 0.10812183 0.00000000 0.02869973
```

```
dta <- dta%>%mutate(wb=cut(ST016Q01NA,
                           quantile(ST016Q01NA, c(0, .25, .75, 1),na.rm=TRUE),
                           labels = c('Low', 'Medium', 'High'),
                           include.lowest = TRUE))

# Check the proportions of low, middle, and high well-being
round(table(dta$wb,useNA = "always")/nrow(dta),digits = 2)#
```

```
##
##    Low Medium   High   <NA>
##   0.30   0.53   0.14   0.03
```

```r
# Selected only low and high well-being students
dta_n <- dta%>%filter(wb=="Low"|wb=="High")%>%
  select(c("ST004D01T","IMMIG","ESCS","MOTIVAT","ANXTEST","EMOSUPS",
           "BELONG","TEACHSUP","PVSCIE","wb"))
nrow(dta_n) #sample size after including low and high well-being
```

```
## [1] 11304
```

```r
dta_n <- dta_n%>%mutate_at(c("ST004D01T","IMMIG"),as.factor)
dta_n$wb<- factor(dta_n$wb)

# 80% training data
set.seed(1234);train <- sample(1:nrow(dta_n),floor(nrow(dta_n)*0.8),replace = FALSE)
training <- dta_n[train,]
testing <- dta_n[-train,]
```

Model 0: Decision tree for training and testing data

- Baseline: default cp=0.01

```r
#training
set.seed(1234);model <- rpart(wb~.,data=training,method = "class",na.action = na.omit)
Model0 <- summary(model)
```

```
## Call:
## rpart(formula = wb ~ ., data = training, na.action = na.omit,
##     method = "class")
##   n=7657 (1386 observations deleted due to missingness)
##
##           CP nsplit rel error    xerror       xstd
## 1 0.24575921      0 1.0000000 1.0000000 0.01682666
## 2 0.05626810      1 0.7542408 0.7716177 0.01553988
## 3 0.01448076      2 0.6979727 0.7141084 0.01512789
## 4 0.01351538      3 0.6834919 0.6954903 0.01498591
## 5 0.01075714      6 0.6429458 0.6818370 0.01487900
## 6 0.01000000      7 0.6321887 0.6752172 0.01482629
##
## Variable importance
##    BELONG   EMOSUPS   ANXTEST ST004D01T      ESCS   MOTIVAT
##        60        26         9         2         1         1
##
## Node number 1: 7657 observations,    complexity param=0.2457592
##   predicted class=Low   expected loss=0.3156589  P(node) =1
##     class counts:  5240  2417
##    probabilities: 0.684 0.316
##   left son=2 (5595 obs) right son=3 (2062 obs)
##   Primary splits:
##       BELONG    < 0.26355  to the left,  improve=608.5835, (0 missing)
##       EMOSUPS   < 0.982    to the left,  improve=515.3075, (0 missing)
##       ANXTEST   < -0.10785 to the right, improve=314.3389, (0 missing)
##       TEACHSUP  < 0.65565  to the left,  improve=169.4996, (0 missing)
##       ST004D01T splits as  RL,           improve=143.3114, (0 missing)
##   Surrogate splits:
##       ANXTEST < -1.17875 to the right, agree=0.734, adj=0.014, (0 split)
##       ESCS    < 1.99845  to the left,  agree=0.731, adj=0.000, (0 split)
```

```
##       PVSCIE  < 229.2385 to the right, agree=0.731, adj=0.000, (0 split)
##
## Node number 2: 5595 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.1946381  P(node) =0.7307039
##     class counts:  4506  1089
##    probabilities: 0.805 0.195
##   left son=4 (4155 obs) right son=5 (1440 obs)
##   Primary splits:
##       EMOSUPS   < 0.982    to the left,  improve=144.24960, (0 missing)
##       BELONG    < -0.38615 to the left,  improve=116.10230, (0 missing)
##       ANXTEST   < 0.261    to the right, improve= 90.61965, (0 missing)
##       ST004D01T splits as  RL,           improve= 52.09384, (0 missing)
##       TEACHSUP  < 1.2768   to the left,  improve= 51.65985, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.5148   to the left,  agree=0.746, adj=0.013, (0 split)
##       PVSCIE < 256.264  to the right, agree=0.743, adj=0.002, (0 split)
##
## Node number 3: 2062 observations,    complexity param=0.0562681
##   predicted class=High  expected loss=0.3559651  P(node) =0.2692961
##     class counts:   734  1328
##    probabilities: 0.356 0.644
##   left son=6 (772 obs) right son=7 (1290 obs)
##   Primary splits:
##       EMOSUPS   < 0.516    to the left,  improve=132.97290, (0 missing)
##       ANXTEST   < 0.10355  to the right, improve= 80.10580, (0 missing)
##       BELONG    < 1.246    to the left,  improve= 43.53596, (0 missing)
##       TEACHSUP  < 0.4875   to the left,  improve= 39.01250, (0 missing)
##       ST004D01T splits as  RL,           improve= 30.28236, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.16375 to the left,  agree=0.648, adj=0.060, (0 split)
##       BELONG   < 0.36235  to the left,  agree=0.642, adj=0.044, (0 split)
##       ANXTEST  < 1.8406   to the right, agree=0.633, adj=0.021, (0 split)
##       ESCS     < -0.93555 to the left,  agree=0.631, adj=0.014, (0 split)
##       TEACHSUP < -0.8684  to the left,  agree=0.631, adj=0.014, (0 split)
##
## Node number 4: 4155 observations
##   predicted class=Low   expected loss=0.1277978  P(node) =0.5426407
##     class counts:  3624   531
##    probabilities: 0.872 0.128
##
## Node number 5: 1440 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.3875  P(node) =0.1880632
##     class counts:   882   558
##    probabilities: 0.613 0.387
##   left son=10 (772 obs) right son=11 (668 obs)
##   Primary splits:
##       ANXTEST   < 0.3134   to the right, improve=54.90149, (0 missing)
##       BELONG    < -0.3794  to the left,  improve=45.96089, (0 missing)
##       ST004D01T splits as  RL,           improve=22.59090, (0 missing)
##       MOTIVAT   < 1.45175  to the left,  improve=17.11675, (0 missing)
##       TEACHSUP  < -0.1181  to the left,  improve=16.41509, (0 missing)
##   Surrogate splits:
##       BELONG    < -0.3651  to the left,  agree=0.614, adj=0.168, (0 split)
##       ST004D01T splits as  RL,           agree=0.605, adj=0.148, (0 split)
```

```
##       ESCS      < 1.0773   to the left,  agree=0.569, adj=0.072, (0 split)
##       PVSCIE    < 582.1975 to the left,  agree=0.559, adj=0.049, (0 split)
##       MOTIVAT   < 1.45175  to the left,  agree=0.541, adj=0.010, (0 split)
##
## Node number 6: 772 observations,    complexity param=0.01448076
##   predicted class=Low   expected loss=0.4119171  P(node) =0.1008228
##     class counts:   454   318
##    probabilities: 0.588 0.412
##   left son=12 (333 obs) right son=13 (439 obs)
##   Primary splits:
##       ANXTEST   < 0.1226   to the right, improve=33.321350, (0 missing)
##       ST004D01T splits as  RL,           improve=30.912980, (0 missing)
##       TEACHSUP  < 0.41835  to the left,  improve=13.983860, (0 missing)
##       BELONG    < 0.63645  to the left,  improve=10.561060, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve= 5.925377, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.631, adj=0.144, (0 split)
##       BELONG    < 0.38695  to the left,  agree=0.596, adj=0.063, (0 split)
##       EMOSUPS   < -1.0563  to the left,  agree=0.582, adj=0.030, (0 split)
##       TEACHSUP  < -0.4066  to the left,  agree=0.582, adj=0.030, (0 split)
##       IMMIG     splits as  RLL,          agree=0.579, adj=0.024, (0 split)
##
## Node number 7: 1290 observations
##   predicted class=High  expected loss=0.2170543  P(node) =0.1684733
##     class counts:   280  1010
##    probabilities: 0.217 0.783
##
## Node number 10: 772 observations
##   predicted class=Low   expected loss=0.2590674  P(node) =0.1008228
##     class counts:   572   200
##    probabilities: 0.741 0.259
##
## Node number 11: 668 observations,    complexity param=0.01351538
##   predicted class=High  expected loss=0.4640719  P(node) =0.08724043
##     class counts:   310   358
##    probabilities: 0.464 0.536
##   left son=22 (290 obs) right son=23 (378 obs)
##   Primary splits:
##       BELONG    < -0.4137  to the left,  improve=15.289500, (0 missing)
##       MOTIVAT   < 0.89985  to the left,  improve=10.479140, (0 missing)
##       PVSCIE    < 557.631  to the right, improve= 9.846661, (0 missing)
##       ANXTEST   < -0.1607  to the right, improve= 6.090499, (0 missing)
##       ST004D01T splits as  RL,           improve= 5.111681, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 366.743  to the left,  agree=0.587, adj=0.048, (0 split)
##       ESCS     < 1.58355  to the right, agree=0.584, adj=0.041, (0 split)
##       TEACHSUP < -1.70135 to the left,  agree=0.578, adj=0.028, (0 split)
##       MOTIVAT  < -1.04655 to the left,  agree=0.570, adj=0.010, (0 split)
##       ANXTEST  < 0.3019   to the right, agree=0.570, adj=0.010, (0 split)
##
## Node number 12: 333 observations
##   predicted class=Low   expected loss=0.2432432  P(node) =0.04348962
##     class counts:   252    81
##    probabilities: 0.757 0.243
```

```
##
## Node number 13: 439 observations,    complexity param=0.01075714
##   predicted class=High  expected loss=0.4601367  P(node) =0.05733316
##     class counts:   202   237
##    probabilities: 0.460 0.540
##   left son=26 (136 obs) right son=27 (303 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=7.230342, (0 missing)
##       TEACHSUP  < 0.37385  to the left,  improve=7.162786, (0 missing)
##       PVSCIE    < 594.952  to the right, improve=5.451322, (0 missing)
##       EMOSUPS   < -2.8315  to the right, improve=4.855819, (0 missing)
##       BELONG    < 0.5086   to the left,  improve=4.686187, (0 missing)
##   Surrogate splits:
##       IMMIG  splits as  RLR,          agree=0.711, adj=0.066, (0 split)
##       ESCS   < -1.8742  to the left,  agree=0.699, adj=0.029, (0 split)
##       PVSCIE < 301.5725 to the left,  agree=0.697, adj=0.022, (0 split)
##
## Node number 22: 290 observations
##   predicted class=Low   expected loss=0.4137931  P(node) =0.03787384
##     class counts:   170   120
##    probabilities: 0.586 0.414
##
## Node number 23: 378 observations
##   predicted class=High  expected loss=0.3703704  P(node) =0.04936659
##     class counts:   140   238
##    probabilities: 0.370 0.630
##
## Node number 26: 136 observations
##   predicted class=Low   expected loss=0.4044118  P(node) =0.01776153
##     class counts:    81    55
##    probabilities: 0.596 0.404
##
## Node number 27: 303 observations
##   predicted class=High  expected loss=0.3993399  P(node) =0.03957163
##     class counts:   121   182
##    probabilities: 0.399 0.601
```

```
model$cptable[which.min(model$cptable[,"xerror"]),"CP"]#show the cp values and find the small cross-val
```

```
## [1] 0.01
```

```
#variables are used in the tree , choosing cp based on the low xerror
prune0 <- prune(model, cp = 0.01)
Pred0 <- predict(prune0,training,type="class")
acc0<- confusionMatrix(Pred0,training$wb)
acc0
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  Low High
##       Low  5528 1245
##       High  619 1651
##
##                Accuracy : 0.7939
##                  95% CI : (0.7854, 0.8022)
```

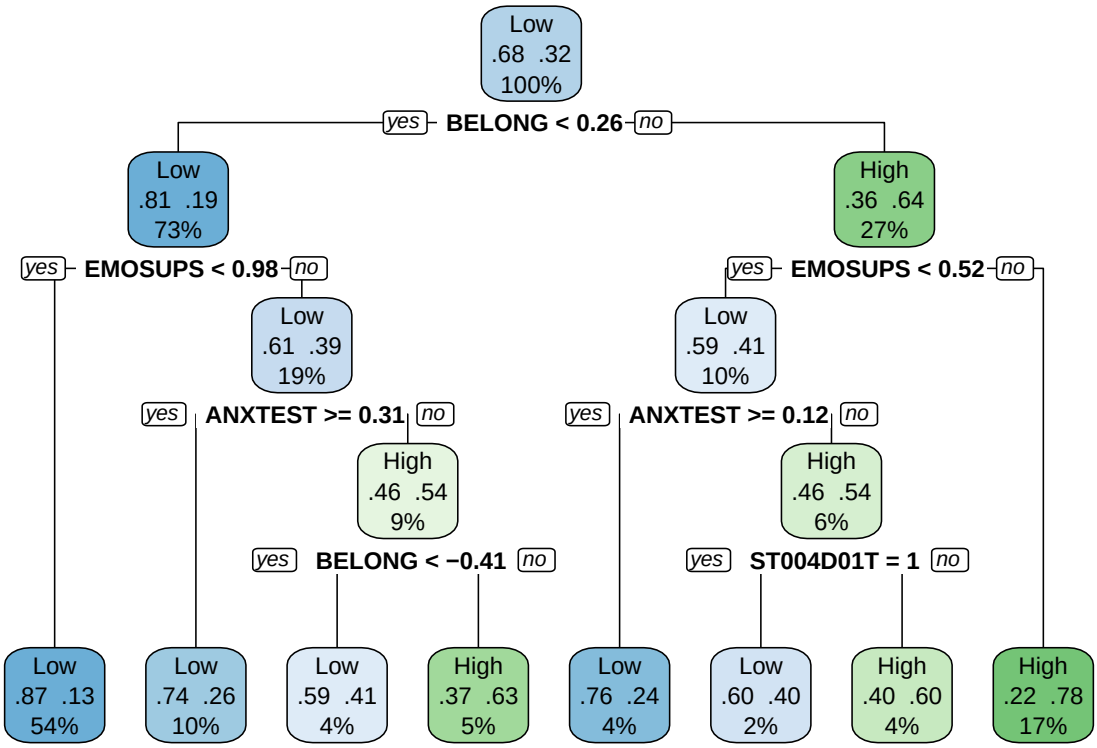
```
##     No Information Rate : 0.6798
##     P-Value [Acc > NIR] : < 2.2e-16
##
##                   Kappa : 0.4979
##
##  Mcnemar's Test P-Value : < 2.2e-16
##
##             Sensitivity : 0.8993
##             Specificity : 0.5701
##          Pos Pred Value : 0.8162
##          Neg Pred Value : 0.7273
##              Prevalence : 0.6798
##          Detection Rate : 0.6113
##    Detection Prevalence : 0.7490
##       Balanced Accuracy : 0.7347
##
##        'Positive' Class : Low
##
```

```
#testing
PredT0 <- predict(prune0,testing,type="class")
accT0 <- confusionMatrix(PredT0,testing$wb)
accT0
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  Low High
##       Low  1317  336
##       High  149  459
##
##                Accuracy : 0.7855
##                  95% CI : (0.768, 0.8023)
##     No Information Rate : 0.6484
##     P-Value [Acc > NIR] : < 2.2e-16
##
##                   Kappa : 0.5028
##
##  Mcnemar's Test P-Value : < 2.2e-16
##
##             Sensitivity : 0.8984
##             Specificity : 0.5774
##          Pos Pred Value : 0.7967
##          Neg Pred Value : 0.7549
##              Prevalence : 0.6484
##          Detection Rate : 0.5825
##    Detection Prevalence : 0.7311
##       Balanced Accuracy : 0.7379
##
##        'Positive' Class : Low
##
```

Plot and important variables for the baseline model

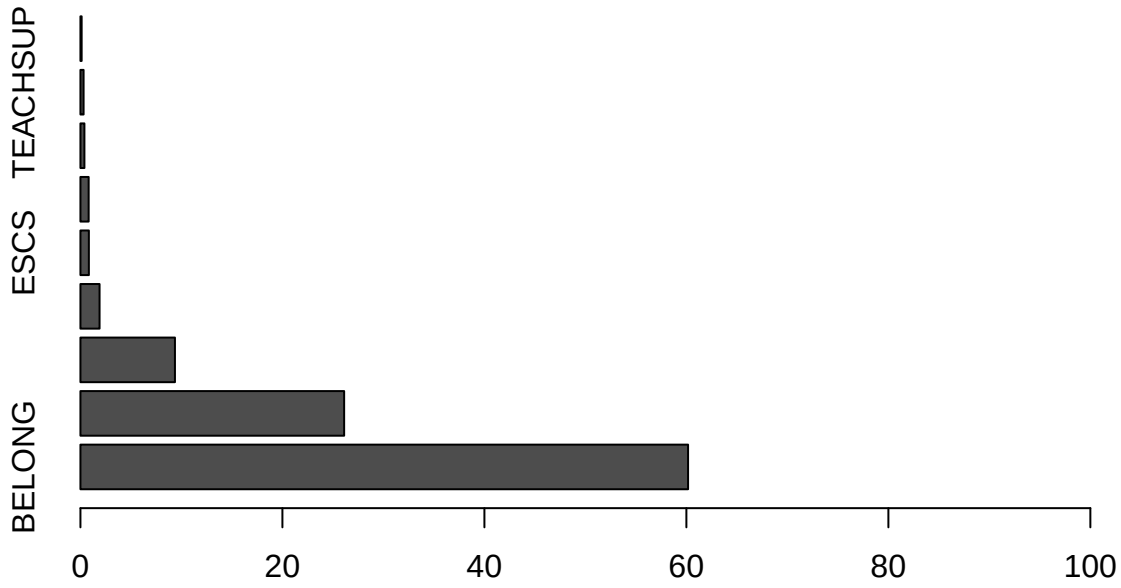
```
rpart.plot(prune0,extra = 104,yesno=2)
```




```
Model0 $variable.importance
```

```
##     BELONG    EMOSUPS    ANXTEST  ST004D01T       ESCS    MOTIVAT     PVSCIE
## 641.035664 278.223146  99.696051  20.170017   8.883471   8.656739   4.205468
##   TEACHSUP       IMMIG
##   3.317112   1.278991
```

```
#importance variables were scaled to 100
barplot(t((Model0 $variable.importance/sum(Model0$variable.importance)*100)),horiz=TRUE,xlim = c(0,100))
```



Model1: Decision tree for training and testing data

- Pruned model: let a tree fully grows(set cp=0), then find a smallest cross-validated error

```
# training
set.seed(1234);model1 <- rpart(wb~.,data=training,method = "class",na.action = na.omit,
                               control=rpart.control(cp=0))
# set seed to make results reproducible
Model1 <- summary(model1)
```

```
## Call:
## rpart(formula = wb ~ ., data = training, na.action = na.omit,
##     method = "class", control = rpart.control(cp = 0))
##   n=7657 (1386 observations deleted due to missingness)
##
##              CP nsplit rel error    xerror       xstd
## 1  2.457592e-01      0 1.0000000 1.0000000 0.01682666
## 2  5.626810e-02      1 0.7542408 0.7716177 0.01553988
## 3  1.448076e-02      2 0.6979727 0.7141084 0.01512789
## 4  1.351538e-02      3 0.6834919 0.6954903 0.01498591
## 5  1.075714e-02      6 0.6429458 0.6818370 0.01487900
## 6  8.688457e-03      7 0.6321887 0.6764584 0.01483622
## 7  6.206041e-03      8 0.6235002 0.6731485 0.01480971
## 8  4.964832e-03      9 0.6172942 0.6652875 0.01474616
## 9  4.137360e-03     10 0.6123293 0.6590815 0.01469540
## 10 3.309888e-03     11 0.6081920 0.6657013 0.01474952
## 11 2.689284e-03     12 0.6048821 0.6611502 0.01471238
```

```
## 12 2.151427e-03     14 0.5995035 0.6549441 0.01466128
## 13 1.930768e-03     20 0.5846090 0.6474969 0.01459927
## 14 1.861812e-03     23 0.5788167 0.6503930 0.01462348
## 15 1.737691e-03     25 0.5750931 0.6516343 0.01463381
## 16 1.654944e-03     35 0.5544063 0.6516343 0.01463381
## 17 1.517032e-03     46 0.5362019 0.6528755 0.01464413
## 18 1.448076e-03     52 0.5229624 0.6561854 0.01467154
## 19 1.241208e-03     60 0.5113777 0.6644601 0.01473942
## 20 1.103296e-03     71 0.4968970 0.6652875 0.01474616
## 21 1.034340e-03     75 0.4923459 0.6723211 0.01480306
## 22 9.653841e-04     93 0.4695904 0.6739760 0.01481635
## 23 9.309061e-04     96 0.4666942 0.6756309 0.01482961
## 24 8.274721e-04    100 0.4629706 0.6768722 0.01483952
## 25 6.895601e-04    128 0.4377327 0.6834919 0.01489209
## 26 6.206041e-04    131 0.4356640 0.6909392 0.01495054
## 27 5.910515e-04    143 0.4282168 0.6979727 0.01500509
## 28 4.964832e-04    153 0.4203558 0.7012826 0.01503055
## 29 4.137360e-04    158 0.4178734 0.7136947 0.01512478
## 30 2.758240e-04    173 0.4116674 0.7223831 0.01518961
## 31 2.482416e-04    179 0.4100124 0.7302441 0.01524747
## 32 2.068680e-04    189 0.4075300 0.7347952 0.01528062
## 33 1.379120e-04    201 0.4050476 0.7405875 0.01532246
## 34 5.910515e-05    216 0.4029789 0.7509309 0.01539618
## 35 0.000000e+00    223 0.4025652 0.7505172 0.01539326
##
## Variable importance
##    BELONG   EMOSUPS   ANXTEST    PVSCIE      ESCS  TEACHSUP   MOTIVAT ST004D01T
##        39        16        13         8         7         6         6         3
##     IMMIG
##         1
##
## Node number 1: 7657 observations,    complexity param=0.2457592
##   predicted class=Low   expected loss=0.3156589  P(node) =1
##     class counts:  5240  2417
##    probabilities: 0.684 0.316
##   left son=2 (5595 obs) right son=3 (2062 obs)
##   Primary splits:
##       BELONG    < 0.26355  to the left,  improve=608.5835, (0 missing)
##       EMOSUPS   < 0.982    to the left,  improve=515.3075, (0 missing)
##       ANXTEST   < -0.10785 to the right, improve=314.3389, (0 missing)
##       TEACHSUP  < 0.65565  to the left,  improve=169.4996, (0 missing)
##       ST004D01T splits as  RL,           improve=143.3114, (0 missing)
##   Surrogate splits:
##       ANXTEST < -1.17875 to the right, agree=0.734, adj=0.014, (0 split)
##       ESCS    < 1.99845  to the left,  agree=0.731, adj=0.000, (0 split)
##       PVSCIE  < 229.2385 to the right, agree=0.731, adj=0.000, (0 split)
##
## Node number 2: 5595 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.1946381  P(node) =0.7307039
##     class counts:  4506  1089
##    probabilities: 0.805 0.195
##   left son=4 (4155 obs) right son=5 (1440 obs)
##   Primary splits:
##       EMOSUPS   < 0.982    to the left,  improve=144.24960, (0 missing)
```

```
##       BELONG    < -0.38615 to the left,  improve=116.10230, (0 missing)
##       ANXTEST   < 0.261    to the right, improve= 90.61965, (0 missing)
##       ST004D01T splits as  RL,           improve= 52.09384, (0 missing)
##       TEACHSUP  < 1.2768   to the left,  improve= 51.65985, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.5148   to the left,  agree=0.746, adj=0.013, (0 split)
##       PVSCIE < 256.264  to the right, agree=0.743, adj=0.002, (0 split)
##
## Node number 3: 2062 observations,    complexity param=0.0562681
##   predicted class=High  expected loss=0.3559651  P(node) =0.2692961
##     class counts:   734  1328
##    probabilities: 0.356 0.644
##   left son=6 (772 obs) right son=7 (1290 obs)
##   Primary splits:
##       EMOSUPS   < 0.516    to the left,  improve=132.97290, (0 missing)
##       ANXTEST   < 0.10355  to the right, improve= 80.10580, (0 missing)
##       BELONG    < 1.246    to the left,  improve= 43.53596, (0 missing)
##       TEACHSUP  < 0.4875   to the left,  improve= 39.01250, (0 missing)
##       ST004D01T splits as  RL,           improve= 30.28236, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.16375 to the left,  agree=0.648, adj=0.060, (0 split)
##       BELONG   < 0.36235  to the left,  agree=0.642, adj=0.044, (0 split)
##       ANXTEST  < 1.8406   to the right, agree=0.633, adj=0.021, (0 split)
##       ESCS     < -0.93555 to the left,  agree=0.631, adj=0.014, (0 split)
##       TEACHSUP < -0.8684  to the left,  agree=0.631, adj=0.014, (0 split)
##
## Node number 4: 4155 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.1277978  P(node) =0.5426407
##     class counts:  3624   531
##    probabilities: 0.872 0.128
##   left son=8 (2764 obs) right son=9 (1391 obs)
##   Primary splits:
##       BELONG    < -0.4241  to the left,  improve=49.43451, (0 missing)
##       ANXTEST   < 0.2076   to the right, improve=39.68815, (0 missing)
##       ST004D01T splits as  RL,           improve=30.43684, (0 missing)
##       PVSCIE    < 477.3155 to the right, improve=17.55128, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve=17.18877, (0 missing)
##   Surrogate splits:
##       PVSCIE < 748.6005 to the left,  agree=0.666, adj=0.004, (0 split)
##       ESCS   < 2.0571   to the left,  agree=0.666, adj=0.001, (0 split)
##
## Node number 5: 1440 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.3875  P(node) =0.1880632
##     class counts:   882   558
##    probabilities: 0.613 0.387
##   left son=10 (772 obs) right son=11 (668 obs)
##   Primary splits:
##       ANXTEST   < 0.3134   to the right, improve=54.90149, (0 missing)
##       BELONG    < -0.3794  to the left,  improve=45.96089, (0 missing)
##       ST004D01T splits as  RL,           improve=22.59090, (0 missing)
##       MOTIVAT   < 1.45175  to the left,  improve=17.11675, (0 missing)
##       TEACHSUP  < -0.1181  to the left,  improve=16.41509, (0 missing)
##   Surrogate splits:
##       BELONG    < -0.3651  to the left,  agree=0.614, adj=0.168, (0 split)
```

```
##       ST004D01T splits as  RL,           agree=0.605, adj=0.148, (0 split)
##       ESCS      < 1.0773   to the left,  agree=0.569, adj=0.072, (0 split)
##       PVSCIE    < 582.1975 to the left,  agree=0.559, adj=0.049, (0 split)
##       MOTIVAT   < 1.45175  to the left,  agree=0.541, adj=0.010, (0 split)
##
## Node number 6: 772 observations,    complexity param=0.01448076
##   predicted class=Low   expected loss=0.4119171  P(node) =0.1008228
##     class counts:   454   318
##    probabilities: 0.588 0.412
##   left son=12 (333 obs) right son=13 (439 obs)
##   Primary splits:
##       ANXTEST   < 0.1226   to the right, improve=33.321350, (0 missing)
##       ST004D01T splits as  RL,           improve=30.912980, (0 missing)
##       TEACHSUP  < 0.41835  to the left,  improve=13.983860, (0 missing)
##       BELONG    < 0.63645  to the left,  improve=10.561060, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve= 5.925377, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.631, adj=0.144, (0 split)
##       BELONG    < 0.38695  to the left,  agree=0.596, adj=0.063, (0 split)
##       EMOSUPS   < -1.0563  to the left,  agree=0.582, adj=0.030, (0 split)
##       TEACHSUP  < -0.4066  to the left,  agree=0.582, adj=0.030, (0 split)
##       IMMIG     splits as  RLL,          agree=0.579, adj=0.024, (0 split)
##
## Node number 7: 1290 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.2170543  P(node) =0.1684733
##     class counts:   280  1010
##    probabilities: 0.217 0.783
##   left son=14 (516 obs) right son=15 (774 obs)
##   Primary splits:
##       ANXTEST   < 0.07365  to the right, improve=37.312660, (0 missing)
##       BELONG    < 0.99575  to the left,  improve=13.712360, (0 missing)
##       ST004D01T splits as  RL,           improve=10.078750, (0 missing)
##       TEACHSUP  < 1.4392   to the left,  improve= 7.063077, (0 missing)
##       EMOSUPS   < 0.982    to the left,  improve= 5.935818, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.637, adj=0.093, (0 split)
##       BELONG    < 0.45855  to the left,  agree=0.615, adj=0.037, (0 split)
##       ESCS      < -1.03945 to the left,  agree=0.609, adj=0.021, (0 split)
##       PVSCIE    < 400.578  to the left,  agree=0.609, adj=0.021, (0 split)
##       EMOSUPS   < 0.76665  to the left,  agree=0.608, adj=0.019, (0 split)
##
## Node number 8: 2764 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.07308249  P(node) =0.3609769
##     class counts:  2562   202
##    probabilities: 0.927 0.073
##   left son=16 (1678 obs) right son=17 (1086 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=8.725714, (0 missing)
##       ANXTEST   < 0.2529   to the right, improve=7.353934, (0 missing)
##       PVSCIE    < 477.3155 to the right, improve=6.539116, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve=4.642636, (0 missing)
##       BELONG    < -2.42595 to the right, improve=3.960606, (0 missing)
##   Surrogate splits:
##       ANXTEST < 0.09745  to the right, agree=0.665, adj=0.146, (0 split)
```

```
##       PVSCIE  < 610.804  to the left,  agree=0.617, adj=0.025, (0 split)
##       MOTIVAT < -1.99825 to the right, agree=0.612, adj=0.013, (0 split)
##       ESCS    < 2.28175  to the left,  agree=0.609, adj=0.004, (0 split)
##       EMOSUPS < -2.62105 to the right, agree=0.608, adj=0.002, (0 split)
##
## Node number 9: 1391 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.2365205  P(node) =0.1816638
##     class counts:  1062   329
##    probabilities: 0.763 0.237
##   left son=18 (730 obs) right son=19 (661 obs)
##   Primary splits:
##       ANXTEST   < 0.2125   to the right, improve=27.976880, (0 missing)
##       ST004D01T splits as  RL,           improve=18.152090, (0 missing)
##       PVSCIE    < 453.8795 to the right, improve=13.709130, (0 missing)
##       TEACHSUP  < 0.9171   to the left,  improve=11.140870, (0 missing)
##       EMOSUPS   < 0.09765  to the left,  improve= 9.277124, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.648, adj=0.260, (0 split)
##       MOTIVAT   < -0.0209  to the right, agree=0.582, adj=0.120, (0 split)
##       PVSCIE    < 589.892  to the left,  agree=0.567, adj=0.089, (0 split)
##       ESCS      < 0.8433   to the left,  agree=0.556, adj=0.065, (0 split)
##       TEACHSUP  < 1.1011   to the left,  agree=0.548, adj=0.048, (0 split)
##
## Node number 10: 772 observations,    complexity param=0.001861812
##   predicted class=Low   expected loss=0.2590674  P(node) =0.1008228
##     class counts:   572   200
##    probabilities: 0.741 0.259
##   left son=20 (452 obs) right son=21 (320 obs)
##   Primary splits:
##       BELONG    < -0.47615 to the left,  improve=13.150270, (0 missing)
##       PVSCIE    < 490.781  to the right, improve=11.045800, (0 missing)
##       TEACHSUP  < 1.1759   to the left,  improve=10.700600, (0 missing)
##       ANXTEST   < 0.7841   to the right, improve= 8.489152, (0 missing)
##       ST004D01T splits as  RL,           improve= 5.946374, (0 missing)
##   Surrogate splits:
##       ANXTEST < 0.39805  to the right, agree=0.601, adj=0.038, (0 split)
##       ESCS    < -2.07715 to the right, agree=0.589, adj=0.009, (0 split)
##       EMOSUPS < 1.07785  to the right, agree=0.589, adj=0.009, (0 split)
##
## Node number 11: 668 observations,    complexity param=0.01351538
##   predicted class=High  expected loss=0.4640719  P(node) =0.08724043
##     class counts:   310   358
##    probabilities: 0.464 0.536
##   left son=22 (290 obs) right son=23 (378 obs)
##   Primary splits:
##       BELONG    < -0.4137  to the left,  improve=15.289500, (0 missing)
##       MOTIVAT   < 0.89985  to the left,  improve=10.479140, (0 missing)
##       PVSCIE    < 557.631  to the right, improve= 9.846661, (0 missing)
##       ANXTEST   < -0.1607  to the right, improve= 6.090499, (0 missing)
##       ST004D01T splits as  RL,           improve= 5.111681, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 366.743  to the left,  agree=0.587, adj=0.048, (0 split)
##       ESCS     < 1.58355  to the right, agree=0.584, adj=0.041, (0 split)
##       TEACHSUP < -1.70135 to the left,  agree=0.578, adj=0.028, (0 split)
```

```
##       MOTIVAT  < -1.04655 to the left,  agree=0.570, adj=0.010, (0 split)
##       ANXTEST  < 0.3019   to the right, agree=0.570, adj=0.010, (0 split)
##
## Node number 12: 333 observations,    complexity param=0.002689284
##   predicted class=Low   expected loss=0.2432432  P(node) =0.04348962
##     class counts:   252    81
##    probabilities: 0.757 0.243
##   left son=24 (184 obs) right son=25 (149 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=11.498960, (0 missing)
##       ANXTEST   < 0.65545  to the right, improve= 6.818558, (0 missing)
##       TEACHSUP  < -0.0067  to the left,  improve= 5.328972, (0 missing)
##       BELONG    < 1.0972   to the left,  improve= 5.001176, (0 missing)
##       PVSCIE    < 506.995  to the right, improve= 4.303305, (0 missing)
##   Surrogate splits:
##       ANXTEST  < 0.52575  to the right, agree=0.610, adj=0.128, (0 split)
##       MOTIVAT  < 0.06465  to the right, agree=0.583, adj=0.067, (0 split)
##       TEACHSUP < -1.73035 to the right, agree=0.568, adj=0.034, (0 split)
##       PVSCIE   < 391.0965 to the right, agree=0.568, adj=0.034, (0 split)
##       EMOSUPS  < -2.1343  to the right, agree=0.565, adj=0.027, (0 split)
##
## Node number 13: 439 observations,    complexity param=0.01075714
##   predicted class=High  expected loss=0.4601367  P(node) =0.05733316
##     class counts:   202   237
##    probabilities: 0.460 0.540
##   left son=26 (136 obs) right son=27 (303 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=7.230342, (0 missing)
##       TEACHSUP  < 0.37385  to the left,  improve=7.162786, (0 missing)
##       PVSCIE    < 594.952  to the right, improve=5.451322, (0 missing)
##       EMOSUPS   < -2.8315  to the right, improve=4.855819, (0 missing)
##       BELONG    < 0.5086   to the left,  improve=4.686187, (0 missing)
##   Surrogate splits:
##       IMMIG  splits as  RLR,          agree=0.711, adj=0.066, (0 split)
##       ESCS   < -1.8742  to the left,  agree=0.699, adj=0.029, (0 split)
##       PVSCIE < 301.5725 to the left,  agree=0.697, adj=0.022, (0 split)
##
## Node number 14: 516 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.3643411  P(node) =0.06738932
##     class counts:   188   328
##    probabilities: 0.364 0.636
##   left son=28 (322 obs) right son=29 (194 obs)
##   Primary splits:
##       BELONG   < 0.99575  to the left,  improve=7.766540, (0 missing)
##       ANXTEST  < 0.93385  to the right, improve=5.396404, (0 missing)
##       TEACHSUP < 0.48965  to the left,  improve=4.384730, (0 missing)
##       EMOSUPS  < 1.01205  to the left,  improve=3.541628, (0 missing)
##       MOTIVAT  < -0.58195 to the left,  improve=2.824119, (0 missing)
##   Surrogate splits:
##       TEACHSUP < -1.4741  to the right, agree=0.636, adj=0.031, (0 split)
##       ESCS     < 1.5352   to the left,  agree=0.630, adj=0.015, (0 split)
##       MOTIVAT  < -2.43905 to the right, agree=0.628, adj=0.010, (0 split)
##       PVSCIE   < 678.353  to the left,  agree=0.626, adj=0.005, (0 split)
##
```

```
## Node number 15: 774 observations,    complexity param=0.0006206041
##   predicted class=High  expected loss=0.118863  P(node) =0.101084
##     class counts:    92   682
##    probabilities: 0.119 0.881
##   left son=30 (62 obs) right son=31 (712 obs)
##   Primary splits:
##       BELONG  < 0.32135  to the left,  improve=3.252341, (0 missing)
##       PVSCIE  < 710.0665 to the right, improve=1.930506, (0 missing)
##       IMMIG   splits as  RLL,          improve=1.837173, (0 missing)
##       ANXTEST < -0.27155 to the right, improve=1.664264, (0 missing)
##       MOTIVAT < 0.61075  to the left,  improve=1.374490, (0 missing)
##
## Node number 16: 1678 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.04112038  P(node) =0.2191459
##     class counts:  1609    69
##    probabilities: 0.959 0.041
##   left son=32 (1643 obs) right son=33 (35 obs)
##   Primary splits:
##       PVSCIE   < 320.8265 to the right, improve=3.336186, (0 missing)
##       EMOSUPS  < 0.0634   to the left,  improve=2.164084, (0 missing)
##       ANXTEST  < -1.2032  to the right, improve=2.124662, (0 missing)
##       TEACHSUP < 0.4513   to the left,  improve=1.340775, (0 missing)
##       ESCS     < -1.1611  to the right, improve=1.101249, (0 missing)
##
## Node number 17: 1086 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.1224678  P(node) =0.141831
##     class counts:   953   133
##    probabilities: 0.878 0.122
##   left son=34 (645 obs) right son=35 (441 obs)
##   Primary splits:
##       PVSCIE   < 484.2645 to the right, improve=7.334199, (0 missing)
##       BELONG   < -2.09485 to the right, improve=7.310315, (0 missing)
##       MOTIVAT  < 1.48705  to the left,  improve=6.982165, (0 missing)
##       TEACHSUP < 1.21435  to the left,  improve=4.781260, (0 missing)
##       EMOSUPS  < 0.06065  to the left,  improve=3.558694, (0 missing)
##   Surrogate splits:
##       ESCS     < -0.28705 to the right, agree=0.622, adj=0.070, (0 split)
##       TEACHSUP < -2.1748  to the right, agree=0.601, adj=0.018, (0 split)
##       BELONG   < -2.24995 to the right, agree=0.599, adj=0.014, (0 split)
##       EMOSUPS  < -2.8104  to the right, agree=0.597, adj=0.007, (0 split)
##       MOTIVAT  < -2.42825 to the right, agree=0.596, adj=0.005, (0 split)
##
## Node number 18: 730 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.1410959  P(node) =0.0953376
##     class counts:   627   103
##    probabilities: 0.859 0.141
##   left son=36 (482 obs) right son=37 (248 obs)
##   Primary splits:
##       PVSCIE   < 447.617  to the right, improve=7.040022, (0 missing)
##       ANXTEST  < 0.64505  to the right, improve=5.809856, (0 missing)
##       EMOSUPS  < 0.09765  to the left,  improve=4.395024, (0 missing)
##       TEACHSUP < -0.31465 to the left,  improve=2.806432, (0 missing)
##       BELONG   < -0.401   to the right, improve=2.083831, (0 missing)
##   Surrogate splits:
```

```
##       ESCS   < -1.35995 to the right, agree=0.670, adj=0.028, (0 split)
##       BELONG < -0.38165 to the right, agree=0.668, adj=0.024, (0 split)
##
## Node number 19: 661 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.3419062  P(node) =0.08632624
##     class counts:   435   226
##    probabilities: 0.658 0.342
##   left son=38 (464 obs) right son=39 (197 obs)
##   Primary splits:
##       PVSCIE    < 453.9385 to the right, improve=10.267430, (0 missing)
##       TEACHSUP  < 0.5593   to the left,  improve= 8.797866, (0 missing)
##       ST004D01T splits as  RL,           improve= 8.484767, (0 missing)
##       EMOSUPS   < 0.0634   to the left,  improve= 7.441914, (0 missing)
##       ANXTEST   < -0.27155 to the right, improve= 6.216102, (0 missing)
##   Surrogate splits:
##       ESCS     < -1.4073  to the right, agree=0.716, adj=0.046, (0 split)
##       MOTIVAT  < -2.6403  to the right, agree=0.708, adj=0.020, (0 split)
##       EMOSUPS  < -1.97105 to the right, agree=0.705, adj=0.010, (0 split)
##       ANXTEST  < 0.2076   to the left,  agree=0.703, adj=0.005, (0 split)
##       TEACHSUP < -2.3976  to the right, agree=0.703, adj=0.005, (0 split)
##
## Node number 20: 452 observations,    complexity param=0.001241208
##   predicted class=Low   expected loss=0.1814159  P(node) =0.05903095
##     class counts:   370    82
##    probabilities: 0.819 0.181
##   left son=40 (187 obs) right son=41 (265 obs)
##   Primary splits:
##       PVSCIE    < 527.102  to the right, improve=5.861227, (0 missing)
##       ANXTEST   < 0.524    to the right, improve=4.098003, (0 missing)
##       TEACHSUP  < -0.1181  to the left,  improve=3.853940, (0 missing)
##       ESCS      < 1.585    to the left,  improve=2.690612, (0 missing)
##       ST004D01T splits as  RL,           improve=2.498143, (0 missing)
##   Surrogate splits:
##       ESCS    < 0.56965  to the right, agree=0.673, adj=0.209, (0 split)
##       BELONG  < -0.5467  to the right, agree=0.602, adj=0.037, (0 split)
##       ANXTEST < 0.47005  to the left,  agree=0.593, adj=0.016, (0 split)
##       MOTIVAT < -1.0634  to the left,  agree=0.588, adj=0.005, (0 split)
##
## Node number 21: 320 observations,    complexity param=0.001861812
##   predicted class=Low   expected loss=0.36875  P(node) =0.04179182
##     class counts:   202   118
##    probabilities: 0.631 0.369
##   left son=42 (197 obs) right son=43 (123 obs)
##   Primary splits:
##       TEACHSUP  < 0.80545  to the left,  improve=11.256040, (0 missing)
##       PVSCIE    < 490.781  to the right, improve= 7.451012, (0 missing)
##       ESCS      < -1.01805 to the right, improve= 5.296476, (0 missing)
##       MOTIVAT   < 0.96945  to the left,  improve= 4.477703, (0 missing)
##       ST004D01T splits as  RL,           improve= 3.145330, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.08825 to the right, agree=0.650, adj=0.089, (0 split)
##       BELONG  < 0.07535  to the left,  agree=0.634, adj=0.049, (0 split)
##       IMMIG   splits as  LRL,          agree=0.622, adj=0.016, (0 split)
##       MOTIVAT < 1.78185  to the left,  agree=0.619, adj=0.008, (0 split)
```

```
##       PVSCIE  < 678.5475 to the left,  agree=0.619, adj=0.008, (0 split)
##
## Node number 22: 290 observations,    complexity param=0.008688457
##   predicted class=Low   expected loss=0.4137931  P(node) =0.03787384
##     class counts:   170   120
##    probabilities: 0.586 0.414
##   left son=44 (257 obs) right son=45 (33 obs)
##   Primary splits:
##       BELONG  < -2.0625  to the right, improve=12.178870, (0 missing)
##       PVSCIE  < 427.568  to the right, improve= 8.448276, (0 missing)
##       MOTIVAT < 0.89985  to the left,  improve= 6.961084, (0 missing)
##       ESCS    < -0.58545 to the right, improve= 3.832402, (0 missing)
##       ANXTEST < -0.12595 to the right, improve= 3.229779, (0 missing)
##
## Node number 23: 378 observations,    complexity param=0.001517032
##   predicted class=High  expected loss=0.3703704  P(node) =0.04936659
##     class counts:   140   238
##    probabilities: 0.370 0.630
##   left son=46 (253 obs) right son=47 (125 obs)
##   Primary splits:
##       MOTIVAT   < 1.45175  to the left,  improve=6.348470, (0 missing)
##       PVSCIE    < 654.212  to the right, improve=3.940923, (0 missing)
##       ANXTEST   < -0.1636  to the right, improve=3.423314, (0 missing)
##       ST004D01T splits as  RL,           improve=2.544710, (0 missing)
##       ESCS      < -1.28435 to the right, improve=2.318636, (0 missing)
##   Surrogate splits:
##       ANXTEST < -1.56825 to the right, agree=0.688, adj=0.056, (0 split)
##       PVSCIE  < 305.837  to the right, agree=0.677, adj=0.024, (0 split)
##       BELONG  < -0.3778  to the right, agree=0.675, adj=0.016, (0 split)
##
## Node number 24: 184 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.125  P(node) =0.0240303
##     class counts:   161    23
##    probabilities: 0.875 0.125
##   left son=48 (112 obs) right son=49 (72 obs)
##   Primary splits:
##       ANXTEST  < 0.64505  to the right, improve=3.6964290, (0 missing)
##       MOTIVAT  < 0.57455  to the left,  improve=1.3836900, (0 missing)
##       PVSCIE   < 500.6455 to the right, improve=1.0900850, (0 missing)
##       TEACHSUP < 1.1842   to the left,  improve=0.6701439, (0 missing)
##       ESCS     < 1.0632   to the right, improve=0.5265568, (0 missing)
##   Surrogate splits:
##       ESCS    < 1.1945   to the left,  agree=0.658, adj=0.125, (0 split)
##       BELONG  < 0.2964   to the right, agree=0.625, adj=0.042, (0 split)
##       EMOSUPS < 0.425    to the left,  agree=0.620, adj=0.028, (0 split)
##       PVSCIE  < 685.617  to the left,  agree=0.620, adj=0.028, (0 split)
##       IMMIG   splits as  LLR,          agree=0.614, adj=0.014, (0 split)
##
## Node number 25: 149 observations,    complexity param=0.002689284
##   predicted class=Low   expected loss=0.3892617  P(node) =0.01945932
##     class counts:    91    58
##    probabilities: 0.611 0.389
##   left son=50 (104 obs) right son=51 (45 obs)
##   Primary splits:
```

```
##       BELONG   < 0.83185  to the left,  improve=8.396492, (0 missing)
##       TEACHSUP < 0.15995  to the left,  improve=7.957594, (0 missing)
##       PVSCIE   < 519.5945 to the right, improve=4.636067, (0 missing)
##       MOTIVAT  < 0.09305  to the right, improve=3.699049, (0 missing)
##       IMMIG    splits as  RLR,          improve=2.442961, (0 missing)
##   Surrogate splits:
##       EMOSUPS < -2.6343  to the right, agree=0.725, adj=0.089, (0 split)
##       ESCS    < 1.6205   to the left,  agree=0.711, adj=0.044, (0 split)
##       MOTIVAT < -0.91705 to the right, agree=0.705, adj=0.022, (0 split)
##
## Node number 26: 136 observations,    complexity param=0.00413736
##   predicted class=Low   expected loss=0.4044118  P(node) =0.01776153
##     class counts:    81    55
##    probabilities: 0.596 0.404
##   left son=52 (72 obs) right son=53 (64 obs)
##   Primary splits:
##       TEACHSUP < 0.44975  to the left,  improve=7.295956, (0 missing)
##       EMOSUPS  < 0.40455  to the left,  improve=2.997141, (0 missing)
##       ANXTEST  < -0.2053  to the right, improve=2.104394, (0 missing)
##       BELONG   < 2.0763   to the left,  improve=1.764706, (0 missing)
##       MOTIVAT  < -0.2457  to the left,  improve=1.647082, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.6331   to the left,  agree=0.618, adj=0.188, (0 split)
##       BELONG  < 2.0763   to the left,  agree=0.603, adj=0.156, (0 split)
##       ESCS    < 0.92305  to the left,  agree=0.581, adj=0.109, (0 split)
##       ANXTEST < 0.039    to the left,  agree=0.581, adj=0.109, (0 split)
##       EMOSUPS < -1.9543  to the right, agree=0.581, adj=0.109, (0 split)
##
## Node number 27: 303 observations,    complexity param=0.006206041
##   predicted class=High  expected loss=0.3993399  P(node) =0.03957163
##     class counts:   121   182
##    probabilities: 0.399 0.601
##   left son=54 (53 obs) right son=55 (250 obs)
##   Primary splits:
##       PVSCIE   < 594.952  to the right, improve=7.534377, (0 missing)
##       TEACHSUP < -1.04835 to the left,  improve=5.809190, (0 missing)
##       EMOSUPS  < -0.3339  to the left,  improve=4.253591, (0 missing)
##       BELONG   < 0.5086   to the left,  improve=4.235357, (0 missing)
##       ANXTEST  < -0.10785 to the right, improve=1.994219, (0 missing)
##   Surrogate splits:
##       ESCS < 1.59565  to the right, agree=0.842, adj=0.094, (0 split)
##
## Node number 28: 322 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.431677  P(node) =0.04205302
##     class counts:   139   183
##    probabilities: 0.432 0.568
##   left son=56 (149 obs) right son=57 (173 obs)
##   Primary splits:
##       TEACHSUP < 0.48965  to the left,  improve=4.016988, (0 missing)
##       ANXTEST  < 0.64505  to the right, improve=3.506168, (0 missing)
##       EMOSUPS  < 1.0333   to the left,  improve=2.970563, (0 missing)
##       MOTIVAT  < -0.84015 to the left,  improve=2.590614, (0 missing)
##       ESCS     < -1.7157  to the left,  improve=1.662579, (0 missing)
##   Surrogate splits:
```

```
##       MOTIVAT   < 0.25375  to the left,  agree=0.593, adj=0.121, (0 split)
##       BELONG    < 0.377    to the left,  agree=0.562, adj=0.054, (0 split)
##       ST004D01T splits as  LR,           agree=0.559, adj=0.047, (0 split)
##       ANXTEST   < 0.4491   to the left,  agree=0.556, adj=0.040, (0 split)
##       PVSCIE    < 381.137  to the left,  agree=0.556, adj=0.040, (0 split)
##
## Node number 29: 194 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.2525773  P(node) =0.02533629
##     class counts:    49   145
##    probabilities: 0.253 0.747
##   left son=58 (24 obs) right son=59 (170 obs)
##   Primary splits:
##       ANXTEST  < 1.44155  to the right, improve=7.5974230, (0 missing)
##       PVSCIE   < 574.4485 to the right, improve=1.7382270, (0 missing)
##       ESCS     < 0.34345  to the left,  improve=1.6163590, (0 missing)
##       BELONG   < 1.04315  to the right, improve=0.8963255, (0 missing)
##       TEACHSUP < 0.49795  to the left,  improve=0.5221124, (0 missing)
##   Surrogate splits:
##       ESCS   < -1.4995  to the left,  agree=0.881, adj=0.042, (0 split)
##       PVSCIE < 328.2635 to the left,  agree=0.881, adj=0.042, (0 split)
##
## Node number 30: 62 observations,    complexity param=0.0006206041
##   predicted class=High  expected loss=0.2741935  P(node) =0.008097166
##     class counts:    17    45
##    probabilities: 0.274 0.726
##   left son=60 (33 obs) right son=61 (29 obs)
##   Primary splits:
##       ESCS      < 0.6755   to the right, improve=2.0232920, (0 missing)
##       PVSCIE    < 440.8985 to the right, improve=1.5830800, (0 missing)
##       TEACHSUP  < 0.5707   to the left,  improve=1.4379240, (0 missing)
##       ANXTEST   < -0.27155 to the right, improve=1.2410560, (0 missing)
##       ST004D01T splits as  LR,           improve=0.4612031, (0 missing)
##   Surrogate splits:
##       ANXTEST < -0.93    to the right, agree=0.597, adj=0.138, (0 split)
##       BELONG  < 0.3065   to the right, agree=0.597, adj=0.138, (0 split)
##       MOTIVAT < -0.66525 to the right, agree=0.581, adj=0.103, (0 split)
##       PVSCIE  < 470.697  to the right, agree=0.581, adj=0.103, (0 split)
##       EMOSUPS < 0.76665  to the right, agree=0.565, adj=0.069, (0 split)
##
## Node number 31: 712 observations,    complexity param=0.0004964832
##   predicted class=High  expected loss=0.1053371  P(node) =0.09298681
##     class counts:    75   637
##    probabilities: 0.105 0.895
##   left son=62 (501 obs) right son=63 (211 obs)
##   Primary splits:
##       BELONG    < 1.78285  to the left,  improve=2.013573, (0 missing)
##       ST004D01T splits as  RL,           improve=1.692069, (0 missing)
##       IMMIG     splits as  RLL,          improve=1.613092, (0 missing)
##       ANXTEST   < -0.636   to the right, improve=1.291580, (0 missing)
##       MOTIVAT   < 0.8673   to the left,  improve=1.272377, (0 missing)
##   Surrogate splits:
##       ESCS     < 2.517    to the left,  agree=0.708, adj=0.014, (0 split)
##       ANXTEST  < -1.4927  to the right, agree=0.708, adj=0.014, (0 split)
##       TEACHSUP < -2.4491  to the right, agree=0.706, adj=0.009, (0 split)
```

```
##
## Node number 32: 1643 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.03651856  P(node) =0.2145749
##     class counts:  1583    60
##    probabilities: 0.963 0.037
##   left son=64 (1619 obs) right son=65 (24 obs)
##   Primary splits:
##       ANXTEST  < -1.2032  to the right, improve=2.2199960, (0 missing)
##       EMOSUPS  < 0.0634   to the left,  improve=1.5861690, (0 missing)
##       PVSCIE   < 398.152  to the right, improve=1.2459460, (0 missing)
##       TEACHSUP < 0.4513   to the left,  improve=0.8772237, (0 missing)
##       ESCS     < -1.1611  to the right, improve=0.7851700, (0 missing)
##
## Node number 33: 35 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.2571429  P(node) =0.004570981
##     class counts:    26     9
##    probabilities: 0.743 0.257
##   left son=66 (27 obs) right son=67 (8 obs)
##   Primary splits:
##       EMOSUPS  < 0.1011   to the left,  improve=2.8066140, (0 missing)
##       PVSCIE   < 311.656  to the left,  improve=1.7285710, (0 missing)
##       TEACHSUP < 0.2461   to the left,  improve=1.2864610, (0 missing)
##       IMMIG    splits as  LRR,          improve=0.8500611, (0 missing)
##       MOTIVAT  < -0.1787  to the left,  improve=0.5167277, (0 missing)
##
## Node number 34: 645 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.0744186  P(node) =0.08423665
##     class counts:   597    48
##    probabilities: 0.926 0.074
##   left son=68 (635 obs) right son=69 (10 obs)
##   Primary splits:
##       BELONG   < -2.42595 to the right, improve=2.153452, (0 missing)
##       ESCS     < -1.7808  to the right, improve=1.775205, (0 missing)
##       MOTIVAT  < -2.15945 to the right, improve=1.775205, (0 missing)
##       PVSCIE   < 584.998  to the right, improve=1.297888, (0 missing)
##       TEACHSUP < 0.8673   to the left,  improve=1.141063, (0 missing)
##
## Node number 35: 441 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.1927438  P(node) =0.05759436
##     class counts:   356    85
##    probabilities: 0.807 0.193
##   left son=70 (378 obs) right son=71 (63 obs)
##   Primary splits:
##       ANXTEST  < -0.68575 to the right, improve=7.111867, (0 missing)
##       MOTIVAT  < 1.45175  to the left,  improve=6.691786, (0 missing)
##       BELONG   < -2.09485 to the right, improve=4.940416, (0 missing)
##       EMOSUPS  < 0.09765  to the left,  improve=3.918375, (0 missing)
##       TEACHSUP < 1.1011   to the left,  improve=3.593121, (0 missing)
##   Surrogate splits:
##       BELONG < -2.42595 to the right, agree=0.866, adj=0.063, (0 split)
##       PVSCIE < 483.4195 to the left,  agree=0.859, adj=0.016, (0 split)
##
## Node number 36: 482 observations,    complexity param=0.0002482416
##   predicted class=Low   expected loss=0.09128631  P(node) =0.06294894
```

```
##     class counts:   438    44
##    probabilities: 0.909 0.091
##   left son=72 (326 obs) right son=73 (156 obs)
##   Primary splits:
##       EMOSUPS  < 0.09765  to the left,  improve=4.1292240, (0 missing)
##       BELONG   < 0.0226   to the left,  improve=1.5030300, (0 missing)
##       PVSCIE   < 505.683  to the right, improve=1.1916090, (0 missing)
##       TEACHSUP < -0.31465 to the left,  improve=1.1511040, (0 missing)
##       ANXTEST  < 0.72285  to the right, improve=0.7365818, (0 missing)
##   Surrogate splits:
##       BELONG  < 0.17865  to the left,  agree=0.691, adj=0.045, (0 split)
##       ESCS    < -1.91035 to the right, agree=0.683, adj=0.019, (0 split)
##       ANXTEST < 0.2174   to the right, agree=0.678, adj=0.006, (0 split)
##
## Node number 37: 248 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.2379032  P(node) =0.03238866
##     class counts:   189    59
##    probabilities: 0.762 0.238
##   left son=74 (131 obs) right son=75 (117 obs)
##   Primary splits:
##       ANXTEST  < 0.6237   to the right, improve=8.456551, (0 missing)
##       TEACHSUP < 0.9171   to the left,  improve=6.544382, (0 missing)
##       PVSCIE   < 328.211  to the right, improve=2.582181, (0 missing)
##       MOTIVAT  < 0.1535   to the right, improve=1.789588, (0 missing)
##       EMOSUPS  < -2.006   to the right, improve=1.602582, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.1585  to the right, agree=0.605, adj=0.162, (0 split)
##       BELONG   < -0.3347  to the right, agree=0.589, adj=0.128, (0 split)
##       TEACHSUP < 0.9171   to the left,  agree=0.565, adj=0.077, (0 split)
##       PVSCIE   < 404.637  to the left,  agree=0.565, adj=0.077, (0 split)
##       ESCS     < 0.54645  to the left,  agree=0.556, adj=0.060, (0 split)
##
## Node number 38: 464 observations,    complexity param=0.001930768
##   predicted class=Low   expected loss=0.2844828  P(node) =0.06059815
##     class counts:   332   132
##    probabilities: 0.716 0.284
##   left son=76 (335 obs) right son=77 (129 obs)
##   Primary splits:
##       EMOSUPS   < 0.0634   to the left,  improve=8.850734, (0 missing)
##       TEACHSUP  < 0.5593   to the left,  improve=6.966875, (0 missing)
##       ANXTEST   < -0.27155 to the right, improve=4.045749, (0 missing)
##       ST004D01T splits as  RL,           improve=3.351724, (0 missing)
##       BELONG    < -0.33835 to the left,  improve=2.984431, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.5473   to the left,  agree=0.728, adj=0.023, (0 split)
##       PVSCIE < 460.141  to the right, agree=0.724, adj=0.008, (0 split)
##
## Node number 39: 197 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.4771574  P(node) =0.02572809
##     class counts:   103    94
##    probabilities: 0.523 0.477
##   left son=78 (42 obs) right son=79 (155 obs)
##   Primary splits:
##       MOTIVAT   < -0.50925 to the left,  improve=6.101482, (0 missing)
```

```
##       EMOSUPS   < -0.9514  to the left,  improve=5.568991, (0 missing)
##       ST004D01T splits as  RL,           improve=4.851070, (0 missing)
##       ANXTEST   < -0.44595 to the right, improve=3.273516, (0 missing)
##       TEACHSUP  < -0.1313  to the left,  improve=3.195725, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.7312  to the left,  agree=0.792, adj=0.024, (0 split)
##       EMOSUPS < -2.38595 to the left,  agree=0.792, adj=0.024, (0 split)
##       BELONG  < 0.2216   to the right, agree=0.792, adj=0.024, (0 split)
##
## Node number 40: 187 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.0855615  P(node) =0.0244221
##     class counts:   171    16
##    probabilities: 0.914 0.086
##   left son=80 (119 obs) right son=81 (68 obs)
##   Primary splits:
##       ANXTEST  < 0.7506   to the right, improve=1.7662340, (0 missing)
##       TEACHSUP < -0.3799  to the left,  improve=0.9191749, (0 missing)
##       BELONG   < -1.18665 to the left,  improve=0.7848869, (0 missing)
##       PVSCIE   < 659.1185 to the left,  improve=0.5207814, (0 missing)
##       MOTIVAT  < 0.09305  to the left,  improve=0.3732566, (0 missing)
##   Surrogate splits:
##       BELONG   < -1.8872  to the right, agree=0.663, adj=0.074, (0 split)
##       MOTIVAT  < -1.13085 to the right, agree=0.647, adj=0.029, (0 split)
##       TEACHSUP < -0.75935 to the right, agree=0.642, adj=0.015, (0 split)
##
## Node number 41: 265 observations,    complexity param=0.001241208
##   predicted class=Low   expected loss=0.2490566  P(node) =0.03460885
##     class counts:   199    66
##    probabilities: 0.751 0.249
##   left son=82 (235 obs) right son=83 (30 obs)
##   Primary splits:
##       ESCS      < 1.03945  to the left,  improve=8.333039, (0 missing)
##       ST004D01T splits as  RL,           improve=4.093113, (0 missing)
##       TEACHSUP  < -0.1181  to the left,  improve=3.054371, (0 missing)
##       ANXTEST   < 0.5514   to the right, improve=2.796886, (0 missing)
##       PVSCIE    < 358.228  to the right, improve=2.702480, (0 missing)
##
## Node number 42: 197 observations,    complexity param=0.0009653841
##   predicted class=Low   expected loss=0.2639594  P(node) =0.02572809
##     class counts:   145    52
##    probabilities: 0.736 0.264
##   left son=84 (98 obs) right son=85 (99 obs)
##   Primary splits:
##       PVSCIE    < 491.0015 to the right, improve=5.719941, (0 missing)
##       ESCS      < -1.01805 to the right, improve=3.939758, (0 missing)
##       ST004D01T splits as  RL,           improve=2.420324, (0 missing)
##       MOTIVAT   < 0.96945  to the left,  improve=1.725286, (0 missing)
##       TEACHSUP  < -1.27135 to the right, improve=1.540879, (0 missing)
##   Surrogate splits:
##       ESCS     < -0.26    to the right, agree=0.584, adj=0.163, (0 split)
##       TEACHSUP < -0.7298  to the right, agree=0.563, adj=0.122, (0 split)
##       ANXTEST  < 1.23875  to the left,  agree=0.548, adj=0.092, (0 split)
##       MOTIVAT  < 0.57455  to the right, agree=0.543, adj=0.082, (0 split)
##       BELONG   < -0.3023  to the left,  agree=0.533, adj=0.061, (0 split)
```

```
##
## Node number 43: 123 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4634146  P(node) =0.01606373
##     class counts:    57    66
##    probabilities: 0.463 0.537
##   left son=86 (113 obs) right son=87 (10 obs)
##   Primary splits:
##       PVSCIE  < 354.964  to the right, improve=2.875156, (0 missing)
##       ANXTEST < 0.8442   to the right, improve=2.497716, (0 missing)
##       ESCS    < -1.27905 to the right, improve=2.410498, (0 missing)
##       MOTIVAT < -0.5565  to the left,  improve=2.301274, (0 missing)
##       BELONG  < -0.4575  to the left,  improve=1.682095, (0 missing)
##
## Node number 44: 257 observations,    complexity param=0.004964832
##   predicted class=Low   expected loss=0.3618677  P(node) =0.03356406
##     class counts:   164    93
##    probabilities: 0.638 0.362
##   left son=88 (205 obs) right son=89 (52 obs)
##   Primary splits:
##       PVSCIE  < 427.568  to the right, improve=8.379661, (0 missing)
##       BELONG  < -0.7087  to the left,  improve=4.267332, (0 missing)
##       ESCS    < -0.58545 to the right, improve=4.210945, (0 missing)
##       MOTIVAT < 0.96945  to the left,  improve=3.768630, (0 missing)
##       IMMIG   splits as  LLR,          improve=1.621814, (0 missing)
##   Surrogate splits:
##       ESCS < 2.2695   to the left,  agree=0.802, adj=0.019, (0 split)
##
## Node number 45: 33 observations
##   predicted class=High  expected loss=0.1818182  P(node) =0.004309782
##     class counts:     6    27
##    probabilities: 0.182 0.818
##
## Node number 46: 253 observations,    complexity param=0.001517032
##   predicted class=High  expected loss=0.4347826  P(node) =0.03304166
##     class counts:   110   143
##    probabilities: 0.435 0.565
##   left son=92 (227 obs) right son=93 (26 obs)
##   Primary splits:
##       ESCS      < -0.8852  to the right, improve=3.407467, (0 missing)
##       PVSCIE    < 654.212  to the right, improve=3.380884, (0 missing)
##       ANXTEST   < -0.1818  to the right, improve=2.842462, (0 missing)
##       MOTIVAT   < -0.06735 to the right, improve=2.096655, (0 missing)
##       ST004D01T splits as  RL,           improve=2.004315, (0 missing)
##
## Node number 47: 125 observations,    complexity param=0.000413736
##   predicted class=High  expected loss=0.24  P(node) =0.01632493
##     class counts:    30    95
##    probabilities: 0.240 0.760
##   left son=94 (7 obs) right son=95 (118 obs)
##   Primary splits:
##       TEACHSUP < -1.24295 to the left,  improve=1.6290560, (0 missing)
##       PVSCIE   < 663.207  to the right, improve=1.6290560, (0 missing)
##       BELONG   < -0.0407  to the right, improve=0.9365130, (0 missing)
##       ANXTEST  < -0.30665 to the right, improve=0.8307692, (0 missing)
```

```
##       ESCS     < 1.3064   to the left,  improve=0.6767263, (0 missing)
##
## Node number 48: 112 observations
##   predicted class=Low   expected loss=0.04464286  P(node) =0.01462714
##     class counts:   107     5
##    probabilities: 0.955 0.045
##
## Node number 49: 72 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.25  P(node) =0.009403161
##     class counts:    54    18
##    probabilities: 0.750 0.250
##   left son=98 (35 obs) right son=99 (37 obs)
##   Primary splits:
##       MOTIVAT  < 0.56695  to the left,  improve=3.676448, (0 missing)
##       ESCS     < -0.30675 to the right, improve=2.438127, (0 missing)
##       ANXTEST  < 0.5331   to the left,  improve=2.266766, (0 missing)
##       PVSCIE   < 469.597  to the right, improve=2.008494, (0 missing)
##       TEACHSUP < 1.1842   to the left,  improve=1.108374, (0 missing)
##   Surrogate splits:
##       EMOSUPS  < -0.2093  to the left,  agree=0.639, adj=0.257, (0 split)
##       TEACHSUP < -0.26345 to the left,  agree=0.611, adj=0.200, (0 split)
##       ESCS     < 0.5236   to the right, agree=0.583, adj=0.143, (0 split)
##       BELONG   < 0.7088   to the left,  agree=0.583, adj=0.143, (0 split)
##       ANXTEST  < 0.5192   to the right, agree=0.569, adj=0.114, (0 split)
##
## Node number 50: 104 observations,    complexity param=0.001448076
##   predicted class=Low   expected loss=0.2788462  P(node) =0.01358234
##     class counts:    75    29
##    probabilities: 0.721 0.279
##   left son=100 (64 obs) right son=101 (40 obs)
##   Primary splits:
##       MOTIVAT  < 0.09305  to the right, improve=6.358173, (0 missing)
##       TEACHSUP < -0.12415 to the left,  improve=5.440018, (0 missing)
##       PVSCIE   < 473.992  to the right, improve=3.837293, (0 missing)
##       EMOSUPS  < -0.14725 to the left,  improve=2.421819, (0 missing)
##       BELONG   < 0.3059   to the left,  improve=2.174749, (0 missing)
##   Surrogate splits:
##       TEACHSUP < 0.80545  to the left,  agree=0.663, adj=0.125, (0 split)
##       PVSCIE   < 316.777  to the right, agree=0.635, adj=0.050, (0 split)
##       ESCS     < 1.5434   to the left,  agree=0.625, adj=0.025, (0 split)
##       ANXTEST  < 1.76595  to the left,  agree=0.625, adj=0.025, (0 split)
##
## Node number 51: 45 observations,    complexity param=0.001654944
##   predicted class=High  expected loss=0.3555556  P(node) =0.005876975
##     class counts:    16    29
##    probabilities: 0.356 0.644
##   left son=102 (28 obs) right son=103 (17 obs)
##   Primary splits:
##       ESCS     < 0.07655  to the left,  improve=4.811298, (0 missing)
##       PVSCIE   < 381.1935 to the right, improve=2.095906, (0 missing)
##       ANXTEST  < 0.8209   to the right, improve=1.651634, (0 missing)
##       EMOSUPS  < -0.38175 to the left,  improve=1.086508, (0 missing)
##       TEACHSUP < -0.3763  to the left,  improve=1.050030, (0 missing)
##   Surrogate splits:
```

```
##       EMOSUPS  < 0.38295  to the left,  agree=0.689, adj=0.176, (0 split)
##       MOTIVAT  < 0.29245  to the left,  agree=0.667, adj=0.118, (0 split)
##       ANXTEST  < 1.75945  to the left,  agree=0.667, adj=0.118, (0 split)
##       TEACHSUP < -0.61225 to the right, agree=0.667, adj=0.118, (0 split)
##
## Node number 52: 72 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.25  P(node) =0.009403161
##     class counts:    54    18
##    probabilities: 0.750 0.250
##   left son=104 (58 obs) right son=105 (14 obs)
##   Primary splits:
##       EMOSUPS < 0.38295  to the left,  improve=2.1724140, (0 missing)
##       PVSCIE  < 606.8445 to the left,  improve=1.9206350, (0 missing)
##       ESCS    < 0.44945  to the right, improve=1.0519480, (0 missing)
##       BELONG  < 0.52815  to the left,  improve=0.8962963, (0 missing)
##       MOTIVAT < 1.01825  to the right, improve=0.8000000, (0 missing)
##   Surrogate splits:
##       TEACHSUP < 0.3143   to the left,  agree=0.833, adj=0.143, (0 split)
##       PVSCIE   < 673.47   to the left,  agree=0.833, adj=0.143, (0 split)
##
## Node number 53: 64 observations,    complexity param=0.001241208
##   predicted class=High  expected loss=0.421875  P(node) =0.008358365
##     class counts:    27    37
##    probabilities: 0.422 0.578
##   left son=106 (53 obs) right son=107 (11 obs)
##   Primary splits:
##       PVSCIE  < 404.2875 to the right, improve=2.910002, (0 missing)
##       ANXTEST < -1.03405 to the right, improve=2.455787, (0 missing)
##       IMMIG   splits as  RLR,         improve=2.386171, (0 missing)
##       EMOSUPS < -1.60745 to the right, improve=2.022790, (0 missing)
##       ESCS    < -0.9701  to the left,  improve=1.968750, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.1585  to the right, agree=0.844, adj=0.091, (0 split)
##
## Node number 54: 53 observations,    complexity param=0.001654944
##   predicted class=Low   expected loss=0.3584906  P(node) =0.006921771
##     class counts:    34    19
##    probabilities: 0.642 0.358
##   left son=108 (30 obs) right son=109 (23 obs)
##   Primary splits:
##       TEACHSUP < 0.42265  to the left,  improve=3.473011, (0 missing)
##       MOTIVAT  < 0.2419   to the left,  improve=3.234501, (0 missing)
##       BELONG   < 0.86455  to the left,  improve=3.076992, (0 missing)
##       ANXTEST  < -0.48185 to the right, improve=2.348033, (0 missing)
##       EMOSUPS  < -0.14665 to the left,  improve=1.165764, (0 missing)
##   Surrogate splits:
##       BELONG  < 0.7444   to the left,  agree=0.679, adj=0.261, (0 split)
##       ESCS    < 0.00765  to the right, agree=0.660, adj=0.217, (0 split)
##       ANXTEST < -0.9271  to the right, agree=0.660, adj=0.217, (0 split)
##       MOTIVAT < 0.2419   to the left,  agree=0.642, adj=0.174, (0 split)
##       EMOSUPS < -2.435   to the right, agree=0.585, adj=0.043, (0 split)
##
## Node number 55: 250 observations,    complexity param=0.003309888
##   predicted class=High  expected loss=0.348  P(node) =0.03264986
```

```
##     class counts:    87   163
##    probabilities: 0.348 0.652
##   left son=110 (34 obs) right son=111 (216 obs)
##   Primary splits:
##       TEACHSUP < -1.0147  to the left,  improve=5.722510, (0 missing)
##       BELONG   < 0.5086   to the left,  improve=4.308878, (0 missing)
##       EMOSUPS  < -0.3339  to the left,  improve=2.656378, (0 missing)
##       PVSCIE   < 402.2435 to the right, improve=1.923277, (0 missing)
##       ANXTEST  < -0.16655 to the right, improve=1.478265, (0 missing)
##   Surrogate splits:
##       ESCS < -1.9137  to the left,  agree=0.868, adj=0.029, (0 split)
##
## Node number 56: 149 observations,    complexity param=0.001737691
##   predicted class=Low   expected loss=0.4832215  P(node) =0.01945932
##     class counts:    77    72
##    probabilities: 0.517 0.483
##   left son=112 (35 obs) right son=113 (114 obs)
##   Primary splits:
##       ANXTEST   < 0.93385  to the right, improve=3.568990, (0 missing)
##       ESCS      < -1.06545 to the left,  improve=3.090316, (0 missing)
##       MOTIVAT   < -0.5489  to the left,  improve=1.701822, (0 missing)
##       ST004D01T splits as  RL,           improve=1.396403, (0 missing)
##       TEACHSUP  < -1.08825 to the right, improve=1.285100, (0 missing)
##   Surrogate splits:
##       ESCS < -1.7349  to the left,  agree=0.785, adj=0.086, (0 split)
##
## Node number 57: 173 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.3583815  P(node) =0.02259371
##     class counts:    62   111
##    probabilities: 0.358 0.642
##   left son=114 (83 obs) right son=115 (90 obs)
##   Primary splits:
##       ESCS    < 0.3568   to the right, improve=3.155874, (0 missing)
##       IMMIG   splits as  RLR,          improve=2.506554, (0 missing)
##       BELONG  < 0.45855  to the left,  improve=2.080368, (0 missing)
##       ANXTEST < 0.58195  to the right, improve=1.811832, (0 missing)
##       EMOSUPS < 1.0333   to the left,  improve=1.526640, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 474.0255 to the right, agree=0.601, adj=0.169, (0 split)
##       ANXTEST  < 0.47445  to the left,  agree=0.572, adj=0.108, (0 split)
##       TEACHSUP < 0.6028   to the left,  agree=0.566, adj=0.096, (0 split)
##       MOTIVAT  < 0.96945  to the right, agree=0.561, adj=0.084, (0 split)
##       BELONG   < 0.46175  to the left,  agree=0.561, adj=0.084, (0 split)
##
## Node number 58: 24 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.375  P(node) =0.003134387
##     class counts:    15     9
##    probabilities: 0.625 0.375
##   left son=116 (16 obs) right son=117 (8 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=1.5000000, (0 missing)
##       ESCS      < 0.7378   to the left,  improve=0.7626050, (0 missing)
##       TEACHSUP  < 0.63835  to the left,  improve=0.5357143, (0 missing)
##       ANXTEST   < 1.88045  to the left,  improve=0.4248252, (0 missing)
```

```
##       BELONG    < 1.45115  to the left,  improve=0.3750000, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 366.338  to the right, agree=0.792, adj=0.375, (0 split)
##       BELONG   < 2.0763   to the left,  agree=0.750, adj=0.250, (0 split)
##       TEACHSUP < -0.4227  to the right, agree=0.750, adj=0.250, (0 split)
##
## Node number 59: 170 observations,    complexity param=0.0002482416
##   predicted class=High  expected loss=0.2  P(node) =0.02220191
##     class counts:    34   136
##    probabilities: 0.200 0.800
##   left son=118 (18 obs) right son=119 (152 obs)
##   Primary splits:
##       PVSCIE  < 572.625  to the right, improve=2.4058480, (0 missing)
##       ESCS    < 0.34345  to the left,  improve=1.9285970, (0 missing)
##       ANXTEST < 0.79375  to the left,  improve=0.9882353, (0 missing)
##       BELONG  < 1.04315  to the right, improve=0.8441379, (0 missing)
##       IMMIG   splits as  RLR,          improve=0.7628396, (0 missing)
##
## Node number 60: 33 observations,    complexity param=0.0006206041
##   predicted class=High  expected loss=0.3939394  P(node) =0.004309782
##     class counts:    13    20
##    probabilities: 0.394 0.606
##   left son=120 (22 obs) right son=121 (11 obs)
##   Primary splits:
##       ESCS     < 1.31935  to the left,  improve=3.0303030, (0 missing)
##       PVSCIE   < 544.5575 to the right, improve=1.5320120, (0 missing)
##       ANXTEST  < -0.2891  to the right, improve=0.8960373, (0 missing)
##       TEACHSUP < 0.8673   to the left,  improve=0.7813853, (0 missing)
##       MOTIVAT  < 0.52915  to the left,  improve=0.6987522, (0 missing)
##   Surrogate splits:
##       EMOSUPS   < 0.76665  to the right, agree=0.727, adj=0.182, (0 split)
##       ST004D01T splits as  LR,           agree=0.697, adj=0.091, (0 split)
##       PVSCIE    < 570.241  to the left,  agree=0.697, adj=0.091, (0 split)
##
## Node number 61: 29 observations
##   predicted class=High  expected loss=0.137931  P(node) =0.003787384
##     class counts:     4    25
##    probabilities: 0.138 0.862
##
## Node number 62: 501 observations,    complexity param=0.0004964832
##   predicted class=High  expected loss=0.1297405  P(node) =0.06543033
##     class counts:    65   436
##    probabilities: 0.130 0.870
##   left son=124 (75 obs) right son=125 (426 obs)
##   Primary splits:
##       IMMIG     splits as  RLL,          improve=2.1446250, (0 missing)
##       ST004D01T splits as  RL,           improve=2.0188780, (0 missing)
##       ANXTEST   < -0.636   to the right, improve=1.2890750, (0 missing)
##       PVSCIE    < 710.0665 to the right, improve=1.2679140, (0 missing)
##       BELONG    < 0.4905   to the right, improve=0.8668391, (0 missing)
##   Surrogate splits:
##       ESCS < -1.68625 to the left,  agree=0.856, adj=0.04, (0 split)
##
## Node number 63: 211 observations
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```
##   predicted class=High  expected loss=0.04739336  P(node) =0.02755648
##     class counts:    10   201
##    probabilities: 0.047 0.953
##
## Node number 64: 1619 observations,    complexity param=0.000137912
##   predicted class=Low   expected loss=0.03335392  P(node) =0.2114405
##     class counts:  1565    54
##    probabilities: 0.967 0.033
##   left son=128 (1227 obs) right son=129 (392 obs)
##   Primary splits:
##       EMOSUPS  < 0.0634   to the left,  improve=1.3054280, (0 missing)
##       ANXTEST  < 0.21565  to the right, improve=1.2584940, (0 missing)
##       PVSCIE   < 398.152  to the right, improve=1.2042870, (0 missing)
##       BELONG   < -0.486   to the left,  improve=0.6255355, (0 missing)
##       TEACHSUP < 0.4513   to the left,  improve=0.5957620, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.65485  to the left,  agree=0.760, adj=0.010, (0 split)
##       PVSCIE < 746.883  to the left,  agree=0.759, adj=0.005, (0 split)
##
## Node number 65: 24 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.25  P(node) =0.003134387
##     class counts:    18     6
##    probabilities: 0.750 0.250
##   left son=130 (15 obs) right son=131 (9 obs)
##   Primary splits:
##       TEACHSUP < 0.4021   to the left,  improve=2.688889, (0 missing)
##       ANXTEST  < -1.4367  to the left,  improve=2.042017, (0 missing)
##       ESCS     < 0.3935   to the right, improve=1.800000, (0 missing)
##       EMOSUPS  < -1.13795 to the left,  improve=1.800000, (0 missing)
##       MOTIVAT  < 0.62655  to the right, improve=1.235294, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 407.064  to the right, agree=0.750, adj=0.333, (0 split)
##       EMOSUPS < -2.5329  to the right, agree=0.708, adj=0.222, (0 split)
##       MOTIVAT < 0.5085   to the left,  agree=0.667, adj=0.111, (0 split)
##       ANXTEST < -1.4367  to the left,  agree=0.667, adj=0.111, (0 split)
##       BELONG  < -0.68815 to the right, agree=0.667, adj=0.111, (0 split)
##
## Node number 66: 27 observations
##   predicted class=Low   expected loss=0.1481481  P(node) =0.003526185
##     class counts:    23     4
##    probabilities: 0.852 0.148
##
## Node number 67: 8 observations
##   predicted class=High  expected loss=0.375  P(node) =0.001044796
##     class counts:     3     5
##    probabilities: 0.375 0.625
##
## Node number 68: 635 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.06929134  P(node) =0.08293065
##     class counts:   591    44
##    probabilities: 0.931 0.069
##   left son=136 (628 obs) right son=137 (7 obs)
##   Primary splits:
##       ESCS    < -1.7808  to the right, improve=1.827294, (0 missing)
```

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##       MOTIVAT < -2.15945 to the right, improve=1.827294, (0 missing)
##       PVSCIE  < 570.182  to the right, improve=1.233817, (0 missing)
##       EMOSUPS < -2.86845 to the right, improve=1.081562, (0 missing)
##       BELONG  < -0.5798  to the left,  improve=0.575505, (0 missing)
##
## Node number 69: 10 observations
##   predicted class=Low   expected loss=0.4  P(node) =0.001305995
##     class counts:     6     4
##    probabilities: 0.600 0.400
##
## Node number 70: 378 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.1560847  P(node) =0.04936659
##     class counts:   319    59
##    probabilities: 0.844 0.156
##   left son=140 (334 obs) right son=141 (44 obs)
##   Primary splits:
##       MOTIVAT  < 1.45175  to the left,  improve=5.281248, (0 missing)
##       EMOSUPS  < -0.0312  to the left,  improve=3.907818, (0 missing)
##       TEACHSUP < 1.1842   to the left,  improve=2.175833, (0 missing)
##       PVSCIE   < 479.9975 to the left,  improve=1.933362, (0 missing)
##       BELONG   < -1.7869  to the right, improve=1.601348, (0 missing)
##   Surrogate splits:
##       BELONG < -0.45295 to the left,  agree=0.889, adj=0.045, (0 split)
##
## Node number 71: 63 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.4126984  P(node) =0.008227765
##     class counts:    37    26
##    probabilities: 0.587 0.413
##   left son=142 (7 obs) right son=143 (56 obs)
##   Primary splits:
##       TEACHSUP < -1.4371  to the left,  improve=2.6825400, (0 missing)
##       BELONG   < -1.52475 to the right, improve=2.6375850, (0 missing)
##       MOTIVAT  < -0.8528  to the left,  improve=1.9100530, (0 missing)
##       EMOSUPS  < 0.0634   to the left,  improve=1.4325400, (0 missing)
##       PVSCIE   < 393.7595 to the right, improve=0.8614217, (0 missing)
##   Surrogate splits:
##       PVSCIE < 478.79   to the right, agree=0.905, adj=0.143, (0 split)
##
## Node number 72: 326 observations
##   predicted class=Low   expected loss=0.04601227  P(node) =0.04257542
##     class counts:   311    15
##    probabilities: 0.954 0.046
##
## Node number 73: 156 observations,    complexity param=0.0002482416
##   predicted class=Low   expected loss=0.1858974  P(node) =0.02037351
##     class counts:   127    29
##    probabilities: 0.814 0.186
##   left son=146 (101 obs) right son=147 (55 obs)
##   Primary splits:
##       PVSCIE   < 510.517  to the right, improve=1.2809550, (0 missing)
##       ANXTEST  < 0.72385  to the right, improve=1.2179490, (0 missing)
##       BELONG   < 0.0233   to the left,  improve=1.1452670, (0 missing)
##       TEACHSUP < -0.27295 to the left,  improve=1.0240820, (0 missing)
##       EMOSUPS  < 0.516    to the left,  improve=0.8541556, (0 missing)
```

```
##   Surrogate splits:
##       ESCS     < -0.7531  to the right, agree=0.654, adj=0.018, (0 split)
##       MOTIVAT  < -0.62125 to the right, agree=0.654, adj=0.018, (0 split)
##       BELONG   < 0.2026   to the left,  agree=0.654, adj=0.018, (0 split)
##       TEACHSUP < -2.0711  to the right, agree=0.654, adj=0.018, (0 split)
##
## Node number 74: 131 observations,    complexity param=0.000137912
##   predicted class=Low   expected loss=0.1145038  P(node) =0.01710853
##     class counts:   116    15
##    probabilities: 0.885 0.115
##   left son=148 (113 obs) right son=149 (18 obs)
##   Primary splits:
##       PVSCIE   < 339.154  to the right, improve=1.9985140, (0 missing)
##       EMOSUPS  < -0.0093  to the left,  improve=1.7769780, (0 missing)
##       TEACHSUP < 0.80545  to the left,  improve=1.6924330, (0 missing)
##       ESCS     < -0.93215 to the left,  improve=1.1103400, (0 missing)
##       BELONG   < -0.35055 to the right, improve=0.9255412, (0 missing)
##
## Node number 75: 117 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.3760684  P(node) =0.01528014
##     class counts:    73    44
##    probabilities: 0.624 0.376
##   left son=150 (53 obs) right son=151 (64 obs)
##   Primary splits:
##       TEACHSUP < -0.1987  to the left,  improve=6.804568, (0 missing)
##       ESCS     < -1.00785 to the right, improve=2.905983, (0 missing)
##       PVSCIE   < 318.8685 to the right, improve=2.401396, (0 missing)
##       IMMIG    splits as  LRL,         improve=2.294768, (0 missing)
##       EMOSUPS  < 0.2102   to the left,  improve=2.151200, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.7611  to the left,  agree=0.650, adj=0.226, (0 split)
##       ESCS    < 0.37175  to the right, agree=0.615, adj=0.151, (0 split)
##       EMOSUPS < -0.07    to the right, agree=0.598, adj=0.113, (0 split)
##       PVSCIE  < 367.456  to the right, agree=0.581, adj=0.075, (0 split)
##       ANXTEST < 0.59385  to the right, agree=0.573, adj=0.057, (0 split)
##
## Node number 76: 335 observations,    complexity param=0.001930768
##   predicted class=Low   expected loss=0.2238806  P(node) =0.04375082
##     class counts:   260    75
##    probabilities: 0.776 0.224
##   left son=152 (328 obs) right son=153 (7 obs)
##   Primary splits:
##       EMOSUPS   < -2.56865 to the right, improve=5.734113, (0 missing)
##       TEACHSUP  < 0.7938   to the left,  improve=4.869431, (0 missing)
##       ANXTEST   < -0.36395 to the right, improve=4.284606, (0 missing)
##       ST004D01T splits as  RL,          improve=4.038711, (0 missing)
##       PVSCIE    < 529.606  to the right, improve=2.371614, (0 missing)
##
## Node number 77: 129 observations,    complexity param=0.001930768
##   predicted class=Low   expected loss=0.4418605  P(node) =0.01684733
##     class counts:    72    57
##    probabilities: 0.558 0.442
##   left son=154 (86 obs) right son=155 (43 obs)
##   Primary splits:
```

```
##       PVSCIE   < 595.262  to the left,  improve=3.418605, (0 missing)
##       TEACHSUP < -0.8043  to the left,  improve=2.398464, (0 missing)
##       ESCS     < 0.14745  to the left,  improve=2.187907, (0 missing)
##       MOTIVAT  < 0.28365  to the right, improve=1.398914, (0 missing)
##       EMOSUPS  < 0.38295  to the right, improve=1.344392, (0 missing)
##   Surrogate splits:
##       ESCS < 0.69435  to the left,  agree=0.721, adj=0.163, (0 split)
##
## Node number 78: 42 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.2380952  P(node) =0.005485177
##     class counts:    32    10
##    probabilities: 0.762 0.238
##   left son=156 (33 obs) right son=157 (9 obs)
##   Primary splits:
##       MOTIVAT  < -1.2707  to the right, improve=2.308802, (0 missing)
##       ANXTEST  < -0.2398  to the right, improve=1.456277, (0 missing)
##       TEACHSUP < 0.57075  to the left,  improve=1.071429, (0 missing)
##       EMOSUPS  < -1.48325 to the right, improve=0.975469, (0 missing)
##       BELONG   < 0.02875  to the right, improve=0.952381, (0 missing)
##   Surrogate splits:
##       IMMIG    splits as  LLR,          agree=0.833, adj=0.222, (0 split)
##       EMOSUPS  < -2.04655 to the right, agree=0.833, adj=0.222, (0 split)
##       TEACHSUP < 1.1316   to the left,  agree=0.810, adj=0.111, (0 split)
##
## Node number 79: 155 observations,    complexity param=0.002151427
##   predicted class=High  expected loss=0.4580645  P(node) =0.02024291
##     class counts:    71    84
##    probabilities: 0.458 0.542
##   left son=158 (19 obs) right son=159 (136 obs)
##   Primary splits:
##       EMOSUPS   < -0.9558  to the left,  improve=6.387501, (0 missing)
##       MOTIVAT   < 0.61075  to the right, improve=5.637338, (0 missing)
##       ST004D01T splits as  RL,           improve=5.448870, (0 missing)
##       ANXTEST   < -0.4446  to the right, improve=2.431762, (0 missing)
##       TEACHSUP  < 0.2389   to the left,  improve=2.123451, (0 missing)
##
## Node number 80: 119 observations
##   predicted class=Low   expected loss=0.03361345  P(node) =0.01554133
##     class counts:   115     4
##    probabilities: 0.966 0.034
##
## Node number 81: 68 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.1764706  P(node) =0.008880763
##     class counts:    56    12
##    probabilities: 0.824 0.176
##   left son=162 (23 obs) right son=163 (45 obs)
##   Primary splits:
##       TEACHSUP  < -0.3799  to the left,  improve=2.1647060, (0 missing)
##       ST004D01T splits as  LR,           improve=1.0504200, (0 missing)
##       BELONG    < -1.1997  to the left,  improve=0.9063725, (0 missing)
##       PVSCIE    < 542.7365 to the left,  improve=0.5647059, (0 missing)
##       ESCS      < 1.19005  to the left,  improve=0.5535171, (0 missing)
##   Surrogate splits:
##       PVSCIE < 542.7365 to the left,  agree=0.721, adj=0.174, (0 split)
```

```
##       ESCS   < 1.68295  to the right, agree=0.691, adj=0.087, (0 split)
##
## Node number 82: 235 observations,    complexity param=0.0006895601
##   predicted class=Low   expected loss=0.2042553  P(node) =0.03069087
##     class counts:   187    48
##    probabilities: 0.796 0.204
##   left son=164 (155 obs) right son=165 (80 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=4.306812, (0 missing)
##       TEACHSUP  < 0.189    to the left,  improve=2.703741, (0 missing)
##       ANXTEST   < 0.5514   to the right, improve=2.336241, (0 missing)
##       PVSCIE    < 371.5345 to the right, improve=2.178723, (0 missing)
##       ESCS      < -1.04945 to the right, improve=1.441674, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.1846  to the right, agree=0.681, adj=0.063, (0 split)
##       PVSCIE  < 318.302  to the right, agree=0.681, adj=0.063, (0 split)
##       MOTIVAT < -0.95305 to the right, agree=0.672, adj=0.038, (0 split)
##       IMMIG   splits as  LLR,          agree=0.664, adj=0.013, (0 split)
##       BELONG  < -3.12215 to the right, agree=0.664, adj=0.013, (0 split)
##
## Node number 83: 30 observations,    complexity param=0.001241208
##   predicted class=High  expected loss=0.4  P(node) =0.003917984
##     class counts:    12    18
##    probabilities: 0.400 0.600
##   left son=166 (23 obs) right son=167 (7 obs)
##   Primary splits:
##       ESCS    < 1.1727   to the right, improve=2.921739, (0 missing)
##       BELONG  < -1.1752  to the right, improve=1.650000, (0 missing)
##       PVSCIE  < 448.738  to the right, improve=1.314027, (0 missing)
##       ANXTEST < 0.6741   to the right, improve=1.207453, (0 missing)
##       MOTIVAT < 0.1232   to the left,  improve=0.536646, (0 missing)
##
## Node number 84: 98 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.1428571  P(node) =0.01279875
##     class counts:    84    14
##    probabilities: 0.857 0.143
##   left son=168 (77 obs) right son=169 (21 obs)
##   Primary splits:
##       ESCS     < 1.15385  to the left,  improve=3.0303030, (0 missing)
##       MOTIVAT  < 0.83495  to the left,  improve=1.3333330, (0 missing)
##       BELONG   < -0.21005 to the left,  improve=0.9120690, (0 missing)
##       ANXTEST  < 0.9919   to the right, improve=0.7500000, (0 missing)
##       TEACHSUP < -0.4621  to the left,  improve=0.6136364, (0 missing)
##   Surrogate splits:
##       TEACHSUP < -1.23805 to the right, agree=0.806, adj=0.095, (0 split)
##
## Node number 85: 99 observations,    complexity param=0.0009653841
##   predicted class=Low   expected loss=0.3838384  P(node) =0.01292935
##     class counts:    61    38
##    probabilities: 0.616 0.384
##   left son=170 (64 obs) right son=171 (35 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=2.738104, (0 missing)
##       MOTIVAT   < 1.01825  to the left,  improve=2.312027, (0 missing)
```

```
##       PVSCIE    < 477.333  to the left,  improve=1.583838, (0 missing)
##       ESCS      < -0.81115 to the right, improve=1.578283, (0 missing)
##       TEACHSUP  < -0.19295 to the left,  improve=1.532138, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < 1.55275  to the left,  agree=0.697, adj=0.143, (0 split)
##       TEACHSUP < -1.566   to the right, agree=0.697, adj=0.143, (0 split)
##       PVSCIE   < 293.3225 to the right, agree=0.667, adj=0.057, (0 split)
##       ESCS     < -1.05995 to the right, agree=0.657, adj=0.029, (0 split)
##       ANXTEST  < 1.72105  to the left,  agree=0.657, adj=0.029, (0 split)
##
## Node number 86: 113 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4955752  P(node) =0.01475774
##     class counts:    56    57
##    probabilities: 0.496 0.504
##   left son=172 (105 obs) right son=173 (8 obs)
##   Primary splits:
##       ESCS    < -1.27905 to the right, improve=2.364623, (0 missing)
##       PVSCIE  < 599.141  to the left,  improve=2.060191, (0 missing)
##       BELONG  < -0.4575  to the left,  improve=2.033439, (0 missing)
##       ANXTEST < 0.7805   to the right, improve=1.988301, (0 missing)
##       MOTIVAT < -0.5565  to the left,  improve=1.951101, (0 missing)
##
## Node number 87: 10 observations
##   predicted class=High  expected loss=0.1  P(node) =0.001305995
##     class counts:     1     9
##    probabilities: 0.100 0.900
##
## Node number 88: 205 observations,    complexity param=0.001654944
##   predicted class=Low   expected loss=0.297561  P(node) =0.02677289
##     class counts:   144    61
##    probabilities: 0.702 0.298
##   left son=176 (128 obs) right son=177 (77 obs)
##   Primary splits:
##       MOTIVAT  < 0.96945  to the left,  improve=4.233275, (0 missing)
##       ESCS     < -0.58545 to the right, improve=3.724340, (0 missing)
##       PVSCIE   < 551.955  to the right, improve=3.281387, (0 missing)
##       BELONG   < -0.7087  to the left,  improve=3.267053, (0 missing)
##       TEACHSUP < -0.7298  to the left,  improve=1.721464, (0 missing)
##   Surrogate splits:
##       ESCS    < 1.72705  to the left,  agree=0.668, adj=0.117, (0 split)
##       BELONG  < -1.1131  to the right, agree=0.649, adj=0.065, (0 split)
##       PVSCIE  < 652.787  to the left,  agree=0.644, adj=0.052, (0 split)
##       IMMIG   splits as  LLR,          agree=0.639, adj=0.039, (0 split)
##       ANXTEST < -1.38715 to the right, agree=0.639, adj=0.039, (0 split)
##
## Node number 89: 52 observations,    complexity param=0.001448076
##   predicted class=High  expected loss=0.3846154  P(node) =0.006791171
##     class counts:    20    32
##    probabilities: 0.385 0.615
##   left son=178 (38 obs) right son=179 (14 obs)
##   Primary splits:
##       BELONG  < -0.61395 to the left,  improve=3.758242, (0 missing)
##       PVSCIE  < 380.744  to the left,  improve=3.661861, (0 missing)
##       ESCS    < 1.056    to the left,  improve=2.797203, (0 missing)
```

```
##       ANXTEST < -0.2053  to the right, improve=2.770147, (0 missing)
##       MOTIVAT < -0.4672  to the left,  improve=1.846154, (0 missing)
##   Surrogate splits:
##       ANXTEST < 0.22775  to the left,  agree=0.769, adj=0.143, (0 split)
##       PVSCIE  < 424.887  to the left,  agree=0.750, adj=0.071, (0 split)
##
## Node number 92: 227 observations,    complexity param=0.001517032
##   predicted class=High  expected loss=0.4625551  P(node) =0.02964608
##     class counts:   105   122
##    probabilities: 0.463 0.537
##   left son=184 (105 obs) right son=185 (122 obs)
##   Primary splits:
##       ANXTEST   < -0.1818  to the right, improve=3.152741, (0 missing)
##       PVSCIE    < 654.212  to the right, improve=2.924042, (0 missing)
##       TEACHSUP  < -0.554   to the left,  improve=2.236978, (0 missing)
##       ST004D01T splits as  RL,           improve=1.787756, (0 missing)
##       ESCS      < 0.99035  to the right, improve=1.256789, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.626, adj=0.190, (0 split)
##       MOTIVAT   < 0.23505  to the right, agree=0.599, adj=0.133, (0 split)
##       PVSCIE    < 454.701  to the left,  agree=0.599, adj=0.133, (0 split)
##       BELONG    < -0.14145 to the left,  agree=0.573, adj=0.076, (0 split)
##       ESCS      < -0.0686  to the left,  agree=0.568, adj=0.067, (0 split)
##
## Node number 93: 26 observations
##   predicted class=High  expected loss=0.1923077  P(node) =0.003395586
##     class counts:     5    21
##    probabilities: 0.192 0.808
##
## Node number 94: 7 observations
##   predicted class=Low   expected loss=0.4285714  P(node) =0.0009141962
##     class counts:     4     3
##    probabilities: 0.571 0.429
##
## Node number 95: 118 observations,    complexity param=0.000275824
##   predicted class=High  expected loss=0.220339  P(node) =0.01541074
##     class counts:    26    92
##    probabilities: 0.220 0.780
##   left son=190 (100 obs) right son=191 (18 obs)
##   Primary splits:
##       TEACHSUP < -0.2425  to the right, improve=1.1534840, (0 missing)
##       BELONG   < 0.2      to the right, improve=0.9786624, (0 missing)
##       ESCS     < 0.5815   to the left,  improve=0.8220932, (0 missing)
##       ANXTEST  < -0.30665 to the right, improve=0.8035175, (0 missing)
##       PVSCIE   < 603.763  to the right, improve=0.6523385, (0 missing)
##
## Node number 98: 35 observations
##   predicted class=Low   expected loss=0.08571429  P(node) =0.004570981
##     class counts:    32     3
##    probabilities: 0.914 0.086
##
## Node number 99: 37 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.4054054  P(node) =0.00483218
##     class counts:    22    15
```

```
##    probabilities: 0.595 0.405
##   left son=198 (22 obs) right son=199 (15 obs)
##   Primary splits:
##       ANXTEST < 0.4409   to the left,  improve=1.910565, (0 missing)
##       PVSCIE  < 460.6885 to the right, improve=1.910565, (0 missing)
##       ESCS    < 0.4877   to the right, improve=1.565111, (0 missing)
##       IMMIG   splits as  LRR,          improve=1.037838, (0 missing)
##       MOTIVAT < 0.88455  to the right, improve=1.037838, (0 missing)
##   Surrogate splits:
##       IMMIG    splits as  LRR,          agree=0.703, adj=0.267, (0 split)
##       ESCS     < 0.5059   to the left,  agree=0.703, adj=0.267, (0 split)
##       TEACHSUP < -0.86205 to the right, agree=0.703, adj=0.267, (0 split)
##       PVSCIE   < 466.734  to the right, agree=0.676, adj=0.200, (0 split)
##       MOTIVAT  < 0.63455  to the right, agree=0.649, adj=0.133, (0 split)
##
## Node number 100: 64 observations
##   predicted class=Low   expected loss=0.140625  P(node) =0.008358365
##     class counts:    55     9
##    probabilities: 0.859 0.141
##
## Node number 101: 40 observations,    complexity param=0.001448076
##   predicted class=Low   expected loss=0.5  P(node) =0.005223978
##     class counts:    20    20
##    probabilities: 0.500 0.500
##   left son=202 (11 obs) right son=203 (29 obs)
##   Primary splits:
##       TEACHSUP < -0.50765 to the left,  improve=3.072100, (0 missing)
##       EMOSUPS  < -0.463   to the left,  improve=1.875000, (0 missing)
##       PVSCIE   < 474.7065 to the right, improve=1.333333, (0 missing)
##       MOTIVAT  < -0.60615 to the left,  improve=1.250000, (0 missing)
##       ANXTEST  < 0.2724   to the right, improve=1.250000, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.60615 to the left,  agree=0.775, adj=0.182, (0 split)
##       IMMIG   splits as  RLR,          agree=0.750, adj=0.091, (0 split)
##       EMOSUPS < -1.21175 to the left,  agree=0.750, adj=0.091, (0 split)
##
## Node number 102: 28 observations,    complexity param=0.001654944
##   predicted class=Low   expected loss=0.4642857  P(node) =0.003656785
##     class counts:    15    13
##    probabilities: 0.536 0.464
##   left son=204 (20 obs) right son=205 (8 obs)
##   Primary splits:
##       PVSCIE  < 392.915  to the right, improve=3.7785710, (0 missing)
##       ESCS    < -0.6709  to the right, improve=2.5234430, (0 missing)
##       ANXTEST < 0.8209   to the right, improve=2.1730160, (0 missing)
##       MOTIVAT < 0.56535  to the right, improve=1.3296410, (0 missing)
##       EMOSUPS < -1.0063  to the left,  improve=0.8396825, (0 missing)
##   Surrogate splits:
##       ESCS  < -0.987   to the right, agree=0.857, adj=0.500, (0 split)
##       IMMIG splits as  LLR,          agree=0.750, adj=0.125, (0 split)
##
## Node number 103: 17 observations
##   predicted class=High  expected loss=0.05882353  P(node) =0.002220191
##     class counts:     1    16
```

```
##    probabilities: 0.059 0.941
##
## Node number 104: 58 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.1896552  P(node) =0.007574768
##     class counts:    47    11
##    probabilities: 0.810 0.190
##   left son=208 (51 obs) right son=209 (7 obs)
##   Primary splits:
##       PVSCIE   < 604.381  to the left,  improve=2.3205830, (0 missing)
##       TEACHSUP < -1.3765  to the right, improve=1.0692530, (0 missing)
##       EMOSUPS  < -1.43225 to the left,  improve=0.6675862, (0 missing)
##       ANXTEST  < -0.7168  to the right, improve=0.6246877, (0 missing)
##       MOTIVAT  < -0.13045 to the right, improve=0.5968170, (0 missing)
##
## Node number 105: 14 observations
##   predicted class=Low   expected loss=0.5  P(node) =0.001828392
##     class counts:     7     7
##    probabilities: 0.500 0.500
##
## Node number 106: 53 observations,    complexity param=0.001241208
##   predicted class=High  expected loss=0.490566  P(node) =0.006921771
##     class counts:    26    27
##    probabilities: 0.491 0.509
##   left son=212 (46 obs) right son=213 (7 obs)
##   Primary splits:
##       ANXTEST < -1.03405 to the right, improve=3.881870, (0 missing)
##       EMOSUPS < -1.5468  to the right, improve=2.518344, (0 missing)
##       IMMIG   splits as  RLL,         improve=1.904485, (0 missing)
##       MOTIVAT < 1.6252   to the left,  improve=1.453404, (0 missing)
##       ESCS    < -0.55985 to the left,  improve=1.402104, (0 missing)
##
## Node number 107: 11 observations
##   predicted class=High  expected loss=0.09090909  P(node) =0.001436594
##     class counts:     1    10
##    probabilities: 0.091 0.909
##
## Node number 108: 30 observations
##   predicted class=Low   expected loss=0.2  P(node) =0.003917984
##     class counts:    24     6
##    probabilities: 0.800 0.200
##
## Node number 109: 23 observations,    complexity param=0.001654944
##   predicted class=High  expected loss=0.4347826  P(node) =0.003003787
##     class counts:    10    13
##    probabilities: 0.435 0.565
##   left son=218 (7 obs) right son=219 (16 obs)
##   Primary splits:
##       MOTIVAT < 0.37355  to the left,  improve=3.590062, (0 missing)
##       EMOSUPS < -0.3775  to the left,  improve=2.488963, (0 missing)
##       BELONG  < 0.86455  to the left,  improve=1.950502, (0 missing)
##       ESCS    < 0.9705   to the left,  improve=0.516469, (0 missing)
##       ANXTEST < -0.97705 to the left,  improve=0.431332, (0 missing)
##   Surrogate splits:
##       BELONG < 0.32135  to the left,  agree=0.739, adj=0.143, (0 split)
```

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##
## Node number 110: 34 observations,    complexity param=0.001448076
##   predicted class=Low   expected loss=0.3823529  P(node) =0.004440381
##     class counts:    21    13
##    probabilities: 0.618 0.382
##   left son=220 (10 obs) right son=221 (24 obs)
##   Primary splits:
##       BELONG   < 0.61205  to the left,  improve=4.1421570, (0 missing)
##       PVSCIE   < 490.04   to the right, improve=3.3163990, (0 missing)
##       ANXTEST  < -0.35975 to the right, improve=1.0112040, (0 missing)
##       EMOSUPS  < -1.0746  to the left,  improve=1.0112040, (0 missing)
##       TEACHSUP < -1.3229  to the left,  improve=0.8366013, (0 missing)
##   Surrogate splits:
##       EMOSUPS < -1.3868  to the left,  agree=0.765, adj=0.2, (0 split)
##       ESCS    < 1.0643   to the right, agree=0.735, adj=0.1, (0 split)
##       PVSCIE  < 409.167  to the left,  agree=0.735, adj=0.1, (0 split)
##
## Node number 111: 216 observations,    complexity param=0.001654944
##   predicted class=High  expected loss=0.3055556  P(node) =0.02820948
##     class counts:    66   150
##    probabilities: 0.306 0.694
##   left son=222 (56 obs) right son=223 (160 obs)
##   Primary splits:
##       BELONG   < 0.5086   to the left,  improve=3.000595, (0 missing)
##       EMOSUPS  < 0.425    to the left,  improve=2.454545, (0 missing)
##       ESCS     < -1.36505 to the left,  improve=2.417179, (0 missing)
##       TEACHSUP < -0.4621  to the right, improve=2.257107, (0 missing)
##       ANXTEST  < -0.16655 to the right, improve=1.523810, (0 missing)
##   Surrogate splits:
##       PVSCIE < 586.152  to the right, agree=0.75, adj=0.036, (0 split)
##
## Node number 112: 35 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.004570981
##     class counts:    25    10
##    probabilities: 0.714 0.286
##
## Node number 113: 114 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.4561404  P(node) =0.01488834
##     class counts:    52    62
##    probabilities: 0.456 0.544
##   left son=226 (61 obs) right son=227 (53 obs)
##   Primary splits:
##       ESCS      < 0.51075  to the left,  improve=2.689458, (0 missing)
##       EMOSUPS   < 0.83245  to the left,  improve=1.770890, (0 missing)
##       TEACHSUP  < -1.08825 to the right, improve=1.581812, (0 missing)
##       ST004D01T splits as  RL,           improve=1.226339, (0 missing)
##       PVSCIE    < 404.236  to the right, improve=1.037688, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 529.2155 to the left,  agree=0.605, adj=0.151, (0 split)
##       BELONG   < 0.3718   to the right, agree=0.579, adj=0.094, (0 split)
##       TEACHSUP < -0.9375  to the right, agree=0.579, adj=0.094, (0 split)
##       IMMIG    splits as  LLR,          agree=0.561, adj=0.057, (0 split)
##       ANXTEST  < 0.2141   to the right, agree=0.561, adj=0.057, (0 split)
##
```

```
## Node number 114: 83 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.4578313  P(node) =0.01083975
##     class counts:    38    45
##    probabilities: 0.458 0.542
##   left son=228 (39 obs) right son=229 (44 obs)
##   Primary splits:
##       ANXTEST  < 0.58715  to the right, improve=3.652372, (0 missing)
##       PVSCIE   < 398.486  to the left,  improve=3.081486, (0 missing)
##       TEACHSUP < 0.5593   to the right, improve=1.961486, (0 missing)
##       BELONG   < 0.45855  to the left,  improve=1.879583, (0 missing)
##       MOTIVAT  < 1.6252   to the left,  improve=1.456392, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.92735  to the left,  agree=0.651, adj=0.256, (0 split)
##       BELONG  < 0.46175  to the left,  agree=0.614, adj=0.179, (0 split)
##       PVSCIE  < 496.0055 to the left,  agree=0.602, adj=0.154, (0 split)
##       ESCS    < 1.07335  to the left,  agree=0.578, adj=0.103, (0 split)
##       IMMIG   splits as  RLL,          agree=0.566, adj=0.077, (0 split)
##
## Node number 115: 90 observations,    complexity param=0.001241208
##   predicted class=High  expected loss=0.2666667  P(node) =0.01175395
##     class counts:    24    66
##    probabilities: 0.267 0.733
##   left son=230 (11 obs) right son=231 (79 obs)
##   Primary splits:
##       IMMIG   splits as  RLR,          improve=3.4255470, (0 missing)
##       ANXTEST < 1.1255   to the left,  improve=0.8397516, (0 missing)
##       BELONG  < 0.416    to the left,  improve=0.7155280, (0 missing)
##       EMOSUPS < 1.0333   to the left,  improve=0.6400000, (0 missing)
##       ESCS    < -0.1     to the left,  improve=0.6308756, (0 missing)
##
## Node number 116: 16 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.002089591
##     class counts:    12     4
##    probabilities: 0.750 0.250
##
## Node number 117: 8 observations
##   predicted class=High  expected loss=0.375  P(node) =0.001044796
##     class counts:     3     5
##    probabilities: 0.375 0.625
##
## Node number 118: 18 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.00235079
##     class counts:     8    10
##    probabilities: 0.444 0.556
##
## Node number 119: 152 observations,    complexity param=0.0002482416
##   predicted class=High  expected loss=0.1710526  P(node) =0.01985112
##     class counts:    26   126
##    probabilities: 0.171 0.829
##   left son=238 (75 obs) right son=239 (77 obs)
##   Primary splits:
##       ESCS      < 0.34345  to the left,  improve=1.4076010, (0 missing)
##       IMMIG     splits as  RLR,          improve=0.9732435, (0 missing)
##       PVSCIE    < 444.669  to the left,  improve=0.8461051, (0 missing)
```

```
##       ANXTEST   < 0.18115  to the right, improve=0.4821695, (0 missing)
##       ST004D01T splits as  LR,           improve=0.4736842, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 491.1405 to the left,  agree=0.651, adj=0.293, (0 split)
##       MOTIVAT  < 0.8011   to the left,  agree=0.579, adj=0.147, (0 split)
##       TEACHSUP < 1.40305  to the right, agree=0.566, adj=0.120, (0 split)
##       ANXTEST  < 1.04065  to the right, agree=0.559, adj=0.107, (0 split)
##       IMMIG    splits as  RLR,          agree=0.539, adj=0.067, (0 split)
##
## Node number 120: 22 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.4545455  P(node) =0.002873188
##     class counts:    12    10
##    probabilities: 0.545 0.455
##   left son=240 (8 obs) right son=241 (14 obs)
##   Primary splits:
##       PVSCIE   < 544.5575 to the right, improve=2.7305190, (0 missing)
##       ESCS     < 1.1176   to the right, improve=1.3706290, (0 missing)
##       TEACHSUP < 1.1344   to the left,  improve=1.3706290, (0 missing)
##       ANXTEST  < -0.3195  to the right, improve=0.3636364, (0 missing)
##       MOTIVAT  < 0.6366   to the left,  improve=0.3636364, (0 missing)
##   Surrogate splits:
##       ESCS  < 1.2922   to the right, agree=0.727, adj=0.250, (0 split)
##       IMMIG splits as  RRL,          agree=0.682, adj=0.125, (0 split)
##
## Node number 121: 11 observations
##   predicted class=High  expected loss=0.09090909  P(node) =0.001436594
##     class counts:     1    10
##    probabilities: 0.091 0.909
##
## Node number 124: 75 observations,    complexity param=0.0004964832
##   predicted class=High  expected loss=0.24  P(node) =0.009794959
##     class counts:    18    57
##    probabilities: 0.240 0.760
##   left son=248 (33 obs) right son=249 (42 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=1.8015580, (0 missing)
##       ANXTEST   < -1.2777  to the right, improve=1.3292310, (0 missing)
##       BELONG    < 1.45115  to the right, improve=1.2971200, (0 missing)
##       ESCS      < 0.2647   to the right, improve=1.2262610, (0 missing)
##       TEACHSUP  < -0.96625 to the right, improve=0.8894118, (0 missing)
##   Surrogate splits:
##       BELONG   < 0.51065  to the left,  agree=0.640, adj=0.182, (0 split)
##       TEACHSUP < -0.13335 to the left,  agree=0.613, adj=0.121, (0 split)
##       ANXTEST  < -1.12495 to the left,  agree=0.600, adj=0.091, (0 split)
##       ESCS     < 0.3029   to the right, agree=0.587, adj=0.061, (0 split)
##       MOTIVAT  < 0.08275  to the left,  agree=0.573, adj=0.030, (0 split)
##
## Node number 125: 426 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.1103286  P(node) =0.05563537
##     class counts:    47   379
##    probabilities: 0.110 0.890
##   left son=250 (130 obs) right son=251 (296 obs)
##   Primary splits:
##       PVSCIE   < 558.1255 to the right, improve=0.9812909, (0 missing)
```

```
##       MOTIVAT  < 0.5463   to the left,  improve=0.8823054, (0 missing)
##       BELONG   < 0.51195  to the right, improve=0.8280151, (0 missing)
##       ANXTEST  < -0.38675 to the right, improve=0.8065516, (0 missing)
##       TEACHSUP < 1.4392   to the left,  improve=0.7762818, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.4235   to the right, agree=0.718, adj=0.077, (0 split)
##       BELONG < 0.3476   to the left,  agree=0.697, adj=0.008, (0 split)
##
## Node number 128: 1227 observations
##   predicted class=Low   expected loss=0.02200489  P(node) =0.1602455
##     class counts:  1200    27
##    probabilities: 0.978 0.022
##
## Node number 129: 392 observations,    complexity param=0.000137912
##   predicted class=Low   expected loss=0.06887755  P(node) =0.05119498
##     class counts:   365    27
##    probabilities: 0.931 0.069
##   left son=258 (337 obs) right son=259 (55 obs)
##   Primary splits:
##       ANXTEST  < -0.03595 to the right, improve=1.6321090, (0 missing)
##       PVSCIE   < 563.094  to the right, improve=0.8996599, (0 missing)
##       ESCS     < 1.70755  to the left,  improve=0.5358206, (0 missing)
##       TEACHSUP < 0.46185  to the left,  improve=0.5160629, (0 missing)
##       IMMIG    splits as  LRR,          improve=0.5068872, (0 missing)
##
## Node number 130: 15 observations
##   predicted class=Low   expected loss=0.06666667  P(node) =0.001958992
##     class counts:    14     1
##    probabilities: 0.933 0.067
##
## Node number 131: 9 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.001175395
##     class counts:     4     5
##    probabilities: 0.444 0.556
##
## Node number 136: 628 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.06528662  P(node) =0.08201646
##     class counts:   587    41
##    probabilities: 0.935 0.065
##   left son=272 (621 obs) right son=273 (7 obs)
##   Primary splits:
##       MOTIVAT  < -2.15945 to the right, improve=1.8684890, (0 missing)
##       EMOSUPS  < -2.86845 to the right, improve=1.1196360, (0 missing)
##       PVSCIE   < 570.182  to the right, improve=0.9489149, (0 missing)
##       BELONG   < -0.5798  to the left,  improve=0.6823075, (0 missing)
##       TEACHSUP < 0.8673   to the left,  improve=0.5117829, (0 missing)
##
## Node number 137: 7 observations
##   predicted class=Low   expected loss=0.4285714  P(node) =0.0009141962
##     class counts:     4     3
##    probabilities: 0.571 0.429
##
## Node number 140: 334 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.1257485  P(node) =0.04362022
```

```
##     class counts:   292    42
##    probabilities: 0.874 0.126
##   left son=280 (95 obs) right son=281 (239 obs)
##   Primary splits:
##       EMOSUPS  < -0.95025 to the left,  improve=2.3546330, (0 missing)
##       ANXTEST  < 0.33155  to the right, improve=1.8512380, (0 missing)
##       MOTIVAT  < -1.2851  to the right, improve=1.1721890, (0 missing)
##       BELONG   < -0.5104  to the left,  improve=0.7828929, (0 missing)
##       TEACHSUP < 0.2339   to the left,  improve=0.5590061, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 305.146  to the left,  agree=0.737, adj=0.074, (0 split)
##       MOTIVAT  < -3.0737  to the left,  agree=0.719, adj=0.011, (0 split)
##       TEACHSUP < -2.53675 to the left,  agree=0.719, adj=0.011, (0 split)
##
## Node number 141: 44 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.3863636  P(node) =0.005746376
##     class counts:    27    17
##    probabilities: 0.614 0.386
##   left son=282 (31 obs) right son=283 (13 obs)
##   Primary splits:
##       EMOSUPS  < 0.27745  to the left,  improve=3.4542070, (0 missing)
##       BELONG   < -0.5835  to the left,  improve=2.5928030, (0 missing)
##       TEACHSUP < 1.1842   to the left,  improve=1.1337890, (0 missing)
##       ANXTEST  < 0.8851   to the right, improve=1.0152150, (0 missing)
##       ESCS     < -0.8812  to the left,  improve=0.8989305, (0 missing)
##   Surrogate splits:
##       ESCS   < 0.6231   to the left,  agree=0.773, adj=0.231, (0 split)
##       BELONG < -2.1549  to the right, agree=0.750, adj=0.154, (0 split)
##
## Node number 142: 7 observations
##   predicted class=Low   expected loss=0  P(node) =0.0009141962
##     class counts:     7     0
##    probabilities: 1.000 0.000
##
## Node number 143: 56 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.4642857  P(node) =0.007313569
##     class counts:    30    26
##    probabilities: 0.536 0.464
##   left son=286 (45 obs) right son=287 (11 obs)
##   Primary splits:
##       BELONG   < -1.52475 to the right, improve=1.8935060, (0 missing)
##       EMOSUPS  < 0.0634   to the left,  improve=1.0000000, (0 missing)
##       MOTIVAT  < 1.60675  to the left,  improve=0.8784195, (0 missing)
##       TEACHSUP < -0.96025 to the right, improve=0.8784195, (0 missing)
##       ESCS     < 0.97645  to the right, improve=0.8571429, (0 missing)
##
## Node number 146: 101 observations
##   predicted class=Low   expected loss=0.1386139  P(node) =0.01319054
##     class counts:    87    14
##    probabilities: 0.861 0.139
##
## Node number 147: 55 observations,    complexity param=0.0002482416
##   predicted class=Low   expected loss=0.2727273  P(node) =0.00718297
##     class counts:    40    15
```

```
##    probabilities: 0.727 0.273
##   left son=294 (17 obs) right son=295 (38 obs)
##   Primary splits:
##       TEACHSUP < -0.28595 to the left,  improve=2.2516180, (0 missing)
##       MOTIVAT  < -0.16375 to the right, improve=1.2626260, (0 missing)
##       ESCS     < 0.67125  to the right, improve=1.1835070, (0 missing)
##       BELONG   < 0.0148   to the left,  improve=0.9513088, (0 missing)
##       ANXTEST  < 0.549    to the right, improve=0.5316321, (0 missing)
##   Surrogate splits:
##       ANXTEST < 0.2959   to the left,  agree=0.727, adj=0.118, (0 split)
##       PVSCIE  < 449.343  to the left,  agree=0.727, adj=0.118, (0 split)
##
## Node number 148: 113 observations,    complexity param=0.000137912
##   predicted class=Low   expected loss=0.07964602  P(node) =0.01475774
##     class counts:   104     9
##    probabilities: 0.920 0.080
##   left son=296 (90 obs) right son=297 (23 obs)
##   Primary splits:
##       TEACHSUP < 0.80545  to the left,  improve=1.8968060, (0 missing)
##       EMOSUPS  < 0.0257   to the left,  improve=1.3200790, (0 missing)
##       BELONG   < -0.35055 to the right, improve=0.6337571, (0 missing)
##       ESCS     < -0.93215 to the left,  improve=0.4500926, (0 missing)
##       ANXTEST  < 0.8442   to the right, improve=0.2796975, (0 missing)
##   Surrogate splits:
##       ANXTEST < 0.66125  to the right, agree=0.814, adj=0.087, (0 split)
##
## Node number 149: 18 observations
##   predicted class=Low   expected loss=0.3333333  P(node) =0.00235079
##     class counts:    12     6
##    probabilities: 0.667 0.333
##
## Node number 150: 53 observations
##   predicted class=Low   expected loss=0.1886792  P(node) =0.006921771
##     class counts:    43    10
##    probabilities: 0.811 0.189
##
## Node number 151: 64 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.46875  P(node) =0.008358365
##     class counts:    30    34
##    probabilities: 0.469 0.531
##   left son=302 (8 obs) right son=303 (56 obs)
##   Primary splits:
##       ESCS     < 0.64915  to the right, improve=1.4464290, (0 missing)
##       MOTIVAT  < -0.20585 to the right, improve=1.4134620, (0 missing)
##       TEACHSUP < 0.22255  to the right, improve=0.9184783, (0 missing)
##       PVSCIE   < 328.211  to the right, improve=0.8750000, (0 missing)
##       ANXTEST  < 0.2724   to the right, improve=0.8463424, (0 missing)
##
## Node number 152: 328 observations,    complexity param=0.001103296
##   predicted class=Low   expected loss=0.2103659  P(node) =0.04283662
##     class counts:   259    69
##    probabilities: 0.790 0.210
##   left son=304 (252 obs) right son=305 (76 obs)
##   Primary splits:
```

```
##       TEACHSUP  < 0.87845  to the left,  improve=4.153723, (0 missing)
##       ST004D01T splits as  RL,           improve=3.940025, (0 missing)
##       ANXTEST   < -0.36395 to the right, improve=3.534715, (0 missing)
##       MOTIVAT   < -0.1585  to the right, improve=2.547734, (0 missing)
##       PVSCIE    < 529.606  to the right, improve=2.266215, (0 missing)
##
## Node number 153: 7 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     1     6
##    probabilities: 0.143 0.857
##
## Node number 154: 86 observations,    complexity param=0.0009309061
##   predicted class=Low   expected loss=0.3604651  P(node) =0.01123155
##     class counts:    55    31
##    probabilities: 0.640 0.360
##   left son=308 (12 obs) right son=309 (74 obs)
##   Primary splits:
##       PVSCIE   < 571.4385 to the right, improve=2.142154, (0 missing)
##       ESCS     < -0.73685 to the right, improve=1.907944, (0 missing)
##       EMOSUPS  < 0.27745  to the right, improve=1.546718, (0 missing)
##       TEACHSUP < -0.6341  to the left,  improve=1.307643, (0 missing)
##       ANXTEST  < -0.48195 to the left,  improve=1.260126, (0 missing)
##   Surrogate splits:
##       BELONG < -0.3772  to the left,  agree=0.872, adj=0.083, (0 split)
##
## Node number 155: 43 observations,    complexity param=0.001654944
##   predicted class=High  expected loss=0.3953488  P(node) =0.005615776
##     class counts:    17    26
##    probabilities: 0.395 0.605
##   left son=310 (18 obs) right son=311 (25 obs)
##   Primary splits:
##       ANXTEST  < -0.2053  to the right, improve=2.882584, (0 missing)
##       MOTIVAT  < 0.0347   to the right, improve=2.739958, (0 missing)
##       TEACHSUP < 0.51645  to the left,  improve=1.788574, (0 missing)
##       PVSCIE   < 687.4155 to the left,  improve=1.066076, (0 missing)
##       ESCS     < 0.9105   to the right, improve=0.986711, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 621.9325 to the left,  agree=0.721, adj=0.333, (0 split)
##       ESCS     < -0.29575 to the left,  agree=0.674, adj=0.222, (0 split)
##       BELONG   < -0.3639  to the left,  agree=0.628, adj=0.111, (0 split)
##       TEACHSUP < -1.02195 to the left,  agree=0.628, adj=0.111, (0 split)
##       MOTIVAT  < -0.59245 to the left,  agree=0.605, adj=0.056, (0 split)
##
## Node number 156: 33 observations
##   predicted class=Low   expected loss=0.1515152  P(node) =0.004309782
##     class counts:    28     5
##    probabilities: 0.848 0.152
##
## Node number 157: 9 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.001175395
##     class counts:     4     5
##    probabilities: 0.444 0.556
##
## Node number 158: 19 observations
```

```
##   predicted class=Low   expected loss=0.1578947  P(node) =0.00248139
##     class counts:    16     3
##    probabilities: 0.842 0.158
##
## Node number 159: 136 observations,    complexity param=0.002151427
##   predicted class=High  expected loss=0.4044118  P(node) =0.01776153
##     class counts:    55    81
##    probabilities: 0.404 0.596
##   left son=318 (36 obs) right son=319 (100 obs)
##   Primary splits:
##       MOTIVAT   < 0.70905  to the right, improve=5.383595, (0 missing)
##       ST004D01T splits as  RL,           improve=4.335539, (0 missing)
##       PVSCIE    < 362.0695 to the right, improve=3.216593, (0 missing)
##       ANXTEST   < -0.4446  to the right, improve=3.003491, (0 missing)
##       ESCS      < -0.34555 to the right, improve=2.186894, (0 missing)
##   Surrogate splits:
##       BELONG   < 0.19195  to the right, agree=0.757, adj=0.083, (0 split)
##       TEACHSUP < -1.49795 to the left,  agree=0.757, adj=0.083, (0 split)
##       ESCS     < -1.49195 to the left,  agree=0.750, adj=0.056, (0 split)
##       ANXTEST  < -1.88625 to the left,  agree=0.743, adj=0.028, (0 split)
##
## Node number 162: 23 observations
##   predicted class=Low   expected loss=0  P(node) =0.003003787
##     class counts:    23     0
##    probabilities: 1.000 0.000
##
## Node number 163: 45 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.2666667  P(node) =0.005876975
##     class counts:    33    12
##    probabilities: 0.733 0.267
##   left son=326 (14 obs) right son=327 (31 obs)
##   Primary splits:
##       BELONG    < -1.1997  to the left,  improve=1.5493090, (0 missing)
##       TEACHSUP  < 0.3553   to the right, improve=1.3884620, (0 missing)
##       ST004D01T splits as  LR,           improve=1.2134450, (0 missing)
##       ESCS      < 0.7473   to the left,  improve=1.1504200, (0 missing)
##       MOTIVAT   < 0.35155  to the left,  improve=0.7142857, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -1.05255 to the left,  agree=0.711, adj=0.071, (0 split)
##       ANXTEST < 0.35895  to the left,  agree=0.711, adj=0.071, (0 split)
##
## Node number 164: 155 observations
##   predicted class=Low   expected loss=0.1354839  P(node) =0.02024291
##     class counts:   134    21
##    probabilities: 0.865 0.135
##
## Node number 165: 80 observations,    complexity param=0.0006895601
##   predicted class=Low   expected loss=0.3375  P(node) =0.01044796
##     class counts:    53    27
##    probabilities: 0.663 0.337
##   left son=330 (49 obs) right son=331 (31 obs)
##   Primary splits:
##       ESCS    < -0.5279  to the right, improve=3.229905, (0 missing)
##       BELONG  < -0.7832  to the right, improve=2.291364, (0 missing)
```

```
##       MOTIVAT < 0.0653   to the right, improve=1.837500, (0 missing)
##       ANXTEST < 0.66125  to the right, improve=1.689745, (0 missing)
##       PVSCIE  < 401.683  to the right, improve=1.318120, (0 missing)
##   Surrogate splits:
##       TEACHSUP < 1.1842   to the left,  agree=0.688, adj=0.194, (0 split)
##       PVSCIE   < 394.9075 to the right, agree=0.675, adj=0.161, (0 split)
##       IMMIG    splits as  LLR,          agree=0.662, adj=0.129, (0 split)
##       ANXTEST  < 0.3889   to the right, agree=0.637, adj=0.065, (0 split)
##
## Node number 166: 23 observations,    complexity param=0.001241208
##   predicted class=Low   expected loss=0.4782609  P(node) =0.003003787
##     class counts:    12    11
##    probabilities: 0.522 0.478
##   left son=332 (10 obs) right son=333 (13 obs)
##   Primary splits:
##       ESCS     < 1.39295  to the left,  improve=5.0628760, (0 missing)
##       BELONG   < -1.1752  to the right, improve=2.8889750, (0 missing)
##       MOTIVAT  < 1.68085  to the right, improve=1.1244150, (0 missing)
##       PVSCIE   < 489.0945 to the right, improve=0.6211180, (0 missing)
##       TEACHSUP < 0.26975  to the left,  improve=0.5540184, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < 0.43625  to the left,  agree=0.739, adj=0.4, (0 split)
##       BELONG   < -0.838   to the right, agree=0.696, adj=0.3, (0 split)
##       TEACHSUP < 0.26975  to the left,  agree=0.696, adj=0.3, (0 split)
##       PVSCIE   < 446.6265 to the right, agree=0.696, adj=0.3, (0 split)
##       ANXTEST  < 0.85645  to the right, agree=0.609, adj=0.1, (0 split)
##
## Node number 167: 7 observations
##   predicted class=High  expected loss=0  P(node) =0.0009141962
##     class counts:     0     7
##    probabilities: 0.000 1.000
##
## Node number 168: 77 observations
##   predicted class=Low   expected loss=0.07792208  P(node) =0.01005616
##     class counts:    71     6
##    probabilities: 0.922 0.078
##
## Node number 169: 21 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.3809524  P(node) =0.002742588
##     class counts:    13     8
##    probabilities: 0.619 0.381
##   left son=338 (13 obs) right son=339 (8 obs)
##   Primary splits:
##       TEACHSUP < -0.2236  to the left,  improve=3.5201470, (0 missing)
##       ESCS     < 1.38585  to the right, improve=3.0138530, (0 missing)
##       MOTIVAT  < 0.25505  to the left,  improve=1.1904760, (0 missing)
##       PVSCIE   < 610.59   to the right, improve=1.1904760, (0 missing)
##       BELONG   < -0.1564  to the left,  improve=0.7936508, (0 missing)
##   Surrogate splits:
##       ESCS      < 1.31955  to the right, agree=0.905, adj=0.750, (0 split)
##       BELONG    < -0.1068  to the left,  agree=0.762, adj=0.375, (0 split)
##       ST004D01T splits as  RL,           agree=0.714, adj=0.250, (0 split)
##       MOTIVAT   < 0.25505  to the left,  agree=0.714, adj=0.250, (0 split)
##       ANXTEST   < 0.50905  to the right, agree=0.667, adj=0.125, (0 split)
```

```
##
## Node number 170: 64 observations
##   predicted class=Low   expected loss=0.296875  P(node) =0.008358365
##     class counts:    45    19
##    probabilities: 0.703 0.297
##
## Node number 171: 35 observations,    complexity param=0.0009653841
##   predicted class=High  expected loss=0.4571429  P(node) =0.004570981
##     class counts:    16    19
##    probabilities: 0.457 0.543
##   left son=342 (22 obs) right son=343 (13 obs)
##   Primary splits:
##       MOTIVAT  < 1.55275  to the left,  improve=2.1196800, (0 missing)
##       TEACHSUP < 0.12345  to the right, improve=1.1571430, (0 missing)
##       PVSCIE   < 446.9405 to the left,  improve=0.8899471, (0 missing)
##       ESCS     < 0.46285  to the right, improve=0.6095238, (0 missing)
##       BELONG   < -0.04425 to the right, improve=0.5843915, (0 missing)
##   Surrogate splits:
##       ANXTEST  < 1.72105  to the left,  agree=0.743, adj=0.308, (0 split)
##       TEACHSUP < -1.44405 to the right, agree=0.743, adj=0.308, (0 split)
##       ESCS     < -1.0422  to the right, agree=0.686, adj=0.154, (0 split)
##
## Node number 172: 105 observations,    complexity param=0.00103434
##   predicted class=Low   expected loss=0.4761905  P(node) =0.01371294
##     class counts:    55    50
##    probabilities: 0.524 0.476
##   left son=344 (9 obs) right son=345 (96 obs)
##   Primary splits:
##       BELONG  < -0.4575  to the left,  improve=2.6240080, (0 missing)
##       PVSCIE  < 599.141  to the left,  improve=2.5481760, (0 missing)
##       MOTIVAT < -0.48355 to the left,  improve=2.1361070, (0 missing)
##       ANXTEST < 0.5593   to the right, improve=1.6095240, (0 missing)
##       ESCS    < 1.35015  to the right, improve=0.5529954, (0 missing)
##
## Node number 173: 8 observations
##   predicted class=High  expected loss=0.125  P(node) =0.001044796
##     class counts:     1     7
##    probabilities: 0.125 0.875
##
## Node number 176: 128 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.21875  P(node) =0.01671673
##     class counts:   100    28
##    probabilities: 0.781 0.219
##   left son=352 (107 obs) right son=353 (21 obs)
##   Primary splits:
##       ESCS    < -0.5576  to the right, improve=2.2119490, (0 missing)
##       PVSCIE  < 524.3845 to the right, improve=2.0495950, (0 missing)
##       ANXTEST < 0.1623   to the left,  improve=0.7060148, (0 missing)
##       BELONG  < -0.79585 to the left,  improve=0.6706349, (0 missing)
##       MOTIVAT < -0.89525 to the right, improve=0.6520071, (0 missing)
##
## Node number 177: 77 observations,    complexity param=0.001654944
##   predicted class=Low   expected loss=0.4285714  P(node) =0.01005616
##     class counts:    44    33
```

```
##    probabilities: 0.571 0.429
##   left son=354 (61 obs) right son=355 (16 obs)
##   Primary splits:
##       MOTIVAT  < 1.04755  to the right, improve=4.173302, (0 missing)
##       BELONG   < -0.7087  to the left,  improve=4.105649, (0 missing)
##       TEACHSUP < -0.3149  to the left,  improve=3.247619, (0 missing)
##       PVSCIE   < 552.8385 to the right, improve=2.454826, (0 missing)
##       ESCS     < -0.6243  to the right, improve=1.693390, (0 missing)
##   Surrogate splits:
##       ESCS   < -0.91    to the right, agree=0.818, adj=0.125, (0 split)
##       IMMIG  splits as  LLR,          agree=0.805, adj=0.063, (0 split)
##       PVSCIE < 446.7675 to the right, agree=0.805, adj=0.063, (0 split)
##
## Node number 178: 38 observations,    complexity param=0.001448076
##   predicted class=Low   expected loss=0.5  P(node) =0.004962779
##     class counts:    19    19
##    probabilities: 0.500 0.500
##   left son=356 (31 obs) right son=357 (7 obs)
##   Primary splits:
##       ESCS    < 1.056    to the left,  improve=4.290323, (0 missing)
##       MOTIVAT < 1.188    to the left,  improve=3.454545, (0 missing)
##       ANXTEST < -0.2053  to the right, improve=3.377778, (0 missing)
##       PVSCIE  < 387.9575 to the left,  improve=2.192308, (0 missing)
##       IMMIG   splits as  LLR,          improve=2.188940, (0 missing)
##   Surrogate splits:
##       ANXTEST < -1.80035 to the right, agree=0.868, adj=0.286, (0 split)
##
## Node number 179: 14 observations
##   predicted class=High  expected loss=0.07142857  P(node) =0.001828392
##     class counts:     1    13
##    probabilities: 0.071 0.929
##
## Node number 184: 105 observations,    complexity param=0.001517032
##   predicted class=Low   expected loss=0.447619  P(node) =0.01371294
##     class counts:    58    47
##    probabilities: 0.552 0.448
##   left son=368 (49 obs) right son=369 (56 obs)
##   Primary splits:
##       BELONG   < -0.3271  to the left,  improve=4.816667, (0 missing)
##       PVSCIE   < 542.044  to the right, improve=4.052597, (0 missing)
##       ANXTEST  < 0.07665  to the left,  improve=3.257143, (0 missing)
##       TEACHSUP < 1.1842   to the left,  improve=1.155552, (0 missing)
##       MOTIVAT  < -0.6829  to the right, improve=1.066667, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.695, adj=0.347, (0 split)
##       PVSCIE    < 517.6555 to the right, agree=0.600, adj=0.143, (0 split)
##       MOTIVAT   < 0.09305  to the left,  agree=0.571, adj=0.082, (0 split)
##       ESCS      < -0.53695 to the right, agree=0.562, adj=0.061, (0 split)
##       TEACHSUP  < 0.45985  to the left,  agree=0.562, adj=0.061, (0 split)
##
## Node number 185: 122 observations,    complexity param=0.001517032
##   predicted class=High  expected loss=0.3852459  P(node) =0.01593313
##     class counts:    47    75
##    probabilities: 0.385 0.615
```

```
##   left son=370 (20 obs) right son=371 (102 obs)
##   Primary splits:
##       MOTIVAT  < -0.5718  to the left,  improve=3.353552, (0 missing)
##       TEACHSUP < -0.2427  to the left,  improve=3.173628, (0 missing)
##       ESCS     < 1.02985  to the right, improve=2.438445, (0 missing)
##       BELONG   < -0.32815 to the right, improve=1.805041, (0 missing)
##       IMMIG    splits as  RLR,          improve=1.608003, (0 missing)
##
## Node number 190: 100 observations,    complexity param=0.000275824
##   predicted class=High  expected loss=0.25  P(node) =0.01305995
##     class counts:    25    75
##    probabilities: 0.250 0.750
##   left son=380 (38 obs) right son=381 (62 obs)
##   Primary splits:
##       BELONG   < -0.0407  to the right, improve=1.7190150, (0 missing)
##       ESCS     < 0.5815   to the left,  improve=0.9863124, (0 missing)
##       ANXTEST  < -0.30665 to the right, improve=0.8453381, (0 missing)
##       TEACHSUP < 0.4687   to the left,  improve=0.8272059, (0 missing)
##       PVSCIE   < 594.994  to the right, improve=0.7284382, (0 missing)
##   Surrogate splits:
##       ANXTEST  < 0.0821   to the right, agree=0.67, adj=0.132, (0 split)
##       PVSCIE   < 343.8765 to the left,  agree=0.66, adj=0.105, (0 split)
##       ESCS     < -0.30035 to the left,  agree=0.64, adj=0.053, (0 split)
##       TEACHSUP < -0.13295 to the left,  agree=0.63, adj=0.026, (0 split)
##
## Node number 191: 18 observations
##   predicted class=High  expected loss=0.05555556  P(node) =0.00235079
##     class counts:     1    17
##    probabilities: 0.056 0.944
##
## Node number 198: 22 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.2727273  P(node) =0.002873188
##     class counts:    16     6
##    probabilities: 0.727 0.273
##   left son=396 (13 obs) right son=397 (9 obs)
##   Primary splits:
##       BELONG  < 0.4538   to the right, improve=2.4366740, (0 missing)
##       EMOSUPS < 0.13645  to the left,  improve=0.8982129, (0 missing)
##       ANXTEST < 0.2724   to the right, improve=0.7956488, (0 missing)
##       MOTIVAT < 1.0092   to the right, improve=0.5939394, (0 missing)
##       ESCS    < -0.31015 to the right, improve=0.3636364, (0 missing)
##   Surrogate splits:
##       ESCS    < -0.97145 to the right, agree=0.727, adj=0.333, (0 split)
##       EMOSUPS < -0.09465 to the left,  agree=0.727, adj=0.333, (0 split)
##       ANXTEST < 0.23265  to the right, agree=0.682, adj=0.222, (0 split)
##       IMMIG   splits as  LLR,         agree=0.636, adj=0.111, (0 split)
##       MOTIVAT < 1.2173   to the right, agree=0.636, adj=0.111, (0 split)
##
## Node number 199: 15 observations
##   predicted class=High  expected loss=0.4  P(node) =0.001958992
##     class counts:     6     9
##    probabilities: 0.400 0.600
##
## Node number 202: 11 observations
```

```
##   predicted class=Low   expected loss=0.1818182  P(node) =0.001436594
##     class counts:     9     2
##    probabilities: 0.818 0.182
##
## Node number 203: 29 observations,    complexity param=0.001241208
##   predicted class=High  expected loss=0.3793103  P(node) =0.003787384
##     class counts:    11    18
##    probabilities: 0.379 0.621
##   left son=406 (7 obs) right son=407 (22 obs)
##   Primary splits:
##       PVSCIE   < 513.4145 to the right, improve=2.0707570, (0 missing)
##       MOTIVAT  < -0.4211  to the right, improve=0.6845842, (0 missing)
##       ANXTEST  < 1.0917   to the right, improve=0.6811464, (0 missing)
##       ESCS     < -0.2453  to the right, improve=0.6440613, (0 missing)
##       TEACHSUP < 0.9171   to the right, improve=0.5963489, (0 missing)
##   Surrogate splits:
##       ANXTEST < 1.88045  to the right, agree=0.828, adj=0.286, (0 split)
##
## Node number 204: 20 observations
##   predicted class=Low   expected loss=0.3  P(node) =0.002611989
##     class counts:    14     6
##    probabilities: 0.700 0.300
##
## Node number 205: 8 observations
##   predicted class=High  expected loss=0.125  P(node) =0.001044796
##     class counts:     1     7
##    probabilities: 0.125 0.875
##
## Node number 208: 51 observations
##   predicted class=Low   expected loss=0.1372549  P(node) =0.006660572
##     class counts:    44     7
##    probabilities: 0.863 0.137
##
## Node number 209: 7 observations
##   predicted class=High  expected loss=0.4285714  P(node) =0.0009141962
##     class counts:     3     4
##    probabilities: 0.429 0.571
##
## Node number 212: 46 observations,    complexity param=0.00103434
##   predicted class=Low   expected loss=0.4347826  P(node) =0.006007575
##     class counts:    26    20
##    probabilities: 0.565 0.435
##   left son=424 (8 obs) right son=425 (38 obs)
##   Primary splits:
##       ESCS    < 1.03525  to the right, improve=1.858696, (0 missing)
##       IMMIG   splits as  RLL,          improve=1.508463, (0 missing)
##       ANXTEST < -0.50825 to the left,  improve=1.407230, (0 missing)
##       EMOSUPS < -1.19365 to the right, improve=1.290014, (0 missing)
##       PVSCIE  < 569.9925 to the right, improve=1.258158, (0 missing)
##
## Node number 213: 7 observations
##   predicted class=High  expected loss=0  P(node) =0.0009141962
##     class counts:     0     7
##    probabilities: 0.000 1.000
```

```
##
## Node number 218: 7 observations
##   predicted class=Low   expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     6     1
##    probabilities: 0.857 0.143
##
## Node number 219: 16 observations
##   predicted class=High  expected loss=0.25  P(node) =0.002089591
##     class counts:     4    12
##    probabilities: 0.250 0.750
##
## Node number 220: 10 observations
##   predicted class=Low   expected loss=0  P(node) =0.001305995
##     class counts:    10     0
##    probabilities: 1.000 0.000
##
## Node number 221: 24 observations,    complexity param=0.001448076
##   predicted class=High  expected loss=0.4583333  P(node) =0.003134387
##     class counts:    11    13
##    probabilities: 0.458 0.542
##   left son=442 (7 obs) right son=443 (17 obs)
##   Primary splits:
##       PVSCIE  < 490.04   to the right, improve=3.1435570, (0 missing)
##       MOTIVAT < -0.325   to the left,  improve=2.0023810, (0 missing)
##       ESCS    < -0.37715 to the right, improve=0.8595238, (0 missing)
##       BELONG  < 1.45115  to the right, improve=0.6880952, (0 missing)
##       EMOSUPS < 0.0634   to the left,  improve=0.4500000, (0 missing)
##   Surrogate splits:
##       ANXTEST  < -0.2617  to the right, agree=0.792, adj=0.286, (0 split)
##       TEACHSUP < -1.08825 to the right, agree=0.750, adj=0.143, (0 split)
##
## Node number 222: 56 observations,    complexity param=0.001654944
##   predicted class=High  expected loss=0.4464286  P(node) =0.007313569
##     class counts:    25    31
##    probabilities: 0.446 0.554
##   left son=444 (8 obs) right son=445 (48 obs)
##   Primary splits:
##       ESCS    < 0.7558   to the right, improve=5.720238, (0 missing)
##       EMOSUPS < -0.8194  to the right, improve=1.916955, (0 missing)
##       MOTIVAT < 1.6252   to the right, improve=1.147959, (0 missing)
##       ANXTEST < 0.0507   to the right, improve=1.147959, (0 missing)
##       PVSCIE  < 563.338  to the right, improve=1.147959, (0 missing)
##   Surrogate splits:
##       ANXTEST < -2.1484  to the left,  agree=0.875, adj=0.125, (0 split)
##       BELONG  < 0.284    to the left,  agree=0.875, adj=0.125, (0 split)
##
## Node number 223: 160 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.25625  P(node) =0.02089591
##     class counts:    41   119
##    probabilities: 0.256 0.744
##   left son=446 (63 obs) right son=447 (97 obs)
##   Primary splits:
##       EMOSUPS  < -0.3339  to the left,  improve=3.2319770, (0 missing)
##       ESCS     < -1.3459  to the left,  improve=3.0715340, (0 missing)
```

```
##       ANXTEST  < 0.0259   to the left,  improve=1.7037160, (0 missing)
##       TEACHSUP < -0.4066  to the right, improve=1.3946150, (0 missing)
##       PVSCIE   < 579.086  to the left,  improve=0.9613562, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.50945 to the left,  agree=0.675, adj=0.175, (0 split)
##       PVSCIE  < 377.6025 to the left,  agree=0.644, adj=0.095, (0 split)
##       BELONG  < 0.5477   to the left,  agree=0.631, adj=0.063, (0 split)
##       ESCS    < -1.46325 to the left,  agree=0.625, adj=0.048, (0 split)
##       ANXTEST < -2.15695 to the left,  agree=0.625, adj=0.048, (0 split)
##
## Node number 226: 61 observations,    complexity param=0.001737691
##   predicted class=Low   expected loss=0.442623  P(node) =0.007966567
##     class counts:    34    27
##    probabilities: 0.557 0.443
##   left son=452 (47 obs) right son=453 (14 obs)
##   Primary splits:
##       PVSCIE    < 404.236  to the right, improve=2.681947, (0 missing)
##       ST004D01T splits as  RL,           improve=1.566829, (0 missing)
##       TEACHSUP  < -0.0951  to the right, improve=1.408165, (0 missing)
##       IMMIG     splits as  LRL,          improve=1.167144, (0 missing)
##       MOTIVAT   < -0.3826  to the left,  improve=1.025711, (0 missing)
##   Surrogate splits:
##       ESCS   < -1.50845 to the right, agree=0.803, adj=0.143, (0 split)
##       BELONG < 0.29265  to the right, agree=0.803, adj=0.143, (0 split)
##       IMMIG  splits as  LRL,          agree=0.787, adj=0.071, (0 split)
##
## Node number 227: 53 observations,    complexity param=0.001737691
##   predicted class=High  expected loss=0.3396226  P(node) =0.006921771
##     class counts:    18    35
##    probabilities: 0.340 0.660
##   left son=454 (7 obs) right son=455 (46 obs)
##   Primary splits:
##       EMOSUPS  < 0.83245  to the left,  improve=7.0344540, (0 missing)
##       TEACHSUP < -0.0954  to the left,  improve=2.7369550, (0 missing)
##       ANXTEST  < 0.52575  to the left,  improve=1.3324080, (0 missing)
##       MOTIVAT  < 1.0092   to the right, improve=1.0646070, (0 missing)
##       PVSCIE   < 474.384  to the left,  improve=0.9935263, (0 missing)
##
## Node number 228: 39 observations,    complexity param=0.001241208
##   predicted class=Low   expected loss=0.3846154  P(node) =0.005093379
##     class counts:    24    15
##    probabilities: 0.615 0.385
##   left son=456 (20 obs) right son=457 (19 obs)
##   Primary splits:
##       PVSCIE    < 488.407  to the right, improve=2.7983810, (0 missing)
##       MOTIVAT   < 0.11645  to the right, improve=2.6873450, (0 missing)
##       ST004D01T splits as  RL,           improve=1.8615380, (0 missing)
##       BELONG    < 0.45855  to the left,  improve=0.9832776, (0 missing)
##       ESCS      < 0.85295  to the left,  improve=0.7631258, (0 missing)
##   Surrogate splits:
##       ESCS     < 0.6685   to the right, agree=0.718, adj=0.421, (0 split)
##       MOTIVAT  < 0.92735  to the left,  agree=0.667, adj=0.316, (0 split)
##       ANXTEST  < 1.3478   to the left,  agree=0.641, adj=0.263, (0 split)
##       BELONG   < 0.35785  to the left,  agree=0.615, adj=0.211, (0 split)
```

```
##       TEACHSUP < 1.1842   to the right, agree=0.615, adj=0.211, (0 split)
##
## Node number 229: 44 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.3181818  P(node) =0.005746376
##     class counts:    14    30
##    probabilities: 0.318 0.682
##   left son=458 (27 obs) right son=459 (17 obs)
##   Primary splits:
##       PVSCIE  < 532.5925 to the left,  improve=3.7270750, (0 missing)
##       MOTIVAT < 1.6252   to the left,  improve=1.7182780, (0 missing)
##       ANXTEST < 0.22935  to the left,  improve=1.5151520, (0 missing)
##       ESCS    < 1.284    to the right, improve=1.0909090, (0 missing)
##       BELONG  < 0.78175  to the right, improve=0.6464646, (0 missing)
##   Surrogate splits:
##       ESCS    < 1.2631   to the left,  agree=0.705, adj=0.235, (0 split)
##       BELONG  < 0.5247   to the right, agree=0.705, adj=0.235, (0 split)
##       ANXTEST < 0.52575  to the left,  agree=0.659, adj=0.118, (0 split)
##       IMMIG   splits as  LLR,          agree=0.636, adj=0.059, (0 split)
##       MOTIVAT < 0.29245  to the right, agree=0.636, adj=0.059, (0 split)
##
## Node number 230: 11 observations
##   predicted class=Low   expected loss=0.3636364  P(node) =0.001436594
##     class counts:     7     4
##    probabilities: 0.636 0.364
##
## Node number 231: 79 observations,    complexity param=0.000275824
##   predicted class=High  expected loss=0.2151899  P(node) =0.01031736
##     class counts:    17    62
##    probabilities: 0.215 0.785
##   left son=462 (19 obs) right son=463 (60 obs)
##   Primary splits:
##       BELONG   < 0.3912   to the left,  improve=1.1747720, (0 missing)
##       TEACHSUP < 1.3644   to the left,  improve=1.0186510, (0 missing)
##       ESCS     < -0.5362  to the left,  improve=0.6251027, (0 missing)
##       ANXTEST  < 1.1255   to the left,  improve=0.5050379, (0 missing)
##       EMOSUPS  < 1.0333   to the left,  improve=0.3949871, (0 missing)
##   Surrogate splits:
##       ANXTEST < 2.1814   to the right, agree=0.772, adj=0.053, (0 split)
##
## Node number 238: 75 observations,    complexity param=0.0002482416
##   predicted class=High  expected loss=0.24  P(node) =0.009794959
##     class counts:    18    57
##    probabilities: 0.240 0.760
##   left son=476 (38 obs) right son=477 (37 obs)
##   Primary splits:
##       ESCS    < -0.31405 to the right, improve=3.6885920, (0 missing)
##       PVSCIE  < 517.121  to the right, improve=1.6961340, (0 missing)
##       BELONG  < 1.04315  to the right, improve=1.3292310, (0 missing)
##       ANXTEST < 0.17885  to the right, improve=1.0316420, (0 missing)
##       EMOSUPS < 0.8112   to the left,  improve=0.5490756, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < 0.5009   to the left,  agree=0.653, adj=0.297, (0 split)
##       BELONG   < 1.78285  to the left,  agree=0.613, adj=0.216, (0 split)
##       TEACHSUP < -0.3719  to the left,  agree=0.600, adj=0.189, (0 split)
```

```
##       ANXTEST  < 0.79375  to the left,  agree=0.587, adj=0.162, (0 split)
##       PVSCIE   < 468.6125 to the right, agree=0.573, adj=0.135, (0 split)
##
## Node number 239: 77 observations
##   predicted class=High  expected loss=0.1038961  P(node) =0.01005616
##     class counts:     8    69
##    probabilities: 0.104 0.896
##
## Node number 240: 8 observations
##   predicted class=Low   expected loss=0.125  P(node) =0.001044796
##     class counts:     7     1
##    probabilities: 0.875 0.125
##
## Node number 241: 14 observations
##   predicted class=High  expected loss=0.3571429  P(node) =0.001828392
##     class counts:     5     9
##    probabilities: 0.357 0.643
##
## Node number 248: 33 observations,    complexity param=0.0004964832
##   predicted class=High  expected loss=0.3636364  P(node) =0.004309782
##     class counts:    12    21
##    probabilities: 0.364 0.636
##   left son=496 (22 obs) right son=497 (11 obs)
##   Primary splits:
##       ANXTEST  < -0.73735 to the right, improve=2.4545450, (0 missing)
##       ESCS     < -0.2396  to the right, improve=2.3704720, (0 missing)
##       BELONG   < 1.28595  to the right, improve=1.0909090, (0 missing)
##       PVSCIE   < 494.7295 to the right, improve=0.5838384, (0 missing)
##       TEACHSUP < -0.2085  to the left,  improve=0.3927273, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 525.0165 to the left,  agree=0.788, adj=0.364, (0 split)
##       TEACHSUP < -1.3019  to the right, agree=0.727, adj=0.182, (0 split)
##       BELONG   < 1.5327   to the left,  agree=0.697, adj=0.091, (0 split)
##
## Node number 249: 42 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.005485177
##     class counts:     6    36
##    probabilities: 0.143 0.857
##
## Node number 250: 130 observations
##   predicted class=High  expected loss=0.1615385  P(node) =0.01697793
##     class counts:    21   109
##    probabilities: 0.162 0.838
##
## Node number 251: 296 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.08783784  P(node) =0.03865744
##     class counts:    26   270
##    probabilities: 0.088 0.912
##   left son=502 (199 obs) right son=503 (97 obs)
##   Primary splits:
##       MOTIVAT  < 1.68085  to the left,  improve=0.9345824, (0 missing)
##       ANXTEST  < -1.8632  to the left,  improve=0.6870450, (0 missing)
##       PVSCIE   < 540.5035 to the left,  improve=0.5731168, (0 missing)
##       BELONG   < 0.5772   to the right, improve=0.5537332, (0 missing)
```

```
##       TEACHSUP < 0.9171   to the left,  improve=0.4713365, (0 missing)
##   Surrogate splits:
##       PVSCIE < 363.0755 to the right, agree=0.693, adj=0.062, (0 split)
##       ESCS   < 1.357    to the left,  agree=0.689, adj=0.052, (0 split)
##       BELONG < 1.5327   to the left,  agree=0.679, adj=0.021, (0 split)
##
## Node number 258: 337 observations
##   predicted class=Low   expected loss=0.0504451  P(node) =0.04401202
##     class counts:   320    17
##    probabilities: 0.950 0.050
##
## Node number 259: 55 observations,    complexity param=0.000137912
##   predicted class=Low   expected loss=0.1818182  P(node) =0.00718297
##     class counts:    45    10
##    probabilities: 0.818 0.182
##   left son=518 (48 obs) right son=519 (7 obs)
##   Primary splits:
##       TEACHSUP < -1.04835 to the right, improve=2.4350650, (0 missing)
##       PVSCIE   < 565.7375 to the right, improve=1.0922080, (0 missing)
##       ESCS     < -0.00625 to the right, improve=1.0276150, (0 missing)
##       IMMIG    splits as  LRL,          improve=0.9767316, (0 missing)
##       BELONG   < -0.4951  to the left,  improve=0.9767316, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.38575  to the left,  agree=0.891, adj=0.143, (0 split)
##       BELONG < -0.4951  to the left,  agree=0.891, adj=0.143, (0 split)
##
## Node number 272: 621 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.06119163  P(node) =0.08110226
##     class counts:   583    38
##    probabilities: 0.939 0.061
##   left son=544 (312 obs) right son=545 (309 obs)
##   Primary splits:
##       PVSCIE   < 570.182  to the right, improve=1.3120330, (0 missing)
##       BELONG   < -0.73725 to the left,  improve=0.8944425, (0 missing)
##       EMOSUPS  < 0.06065  to the left,  improve=0.7486504, (0 missing)
##       TEACHSUP < 0.8673   to the left,  improve=0.6515806, (0 missing)
##       MOTIVAT  < 1.6605   to the left,  improve=0.6339883, (0 missing)
##   Surrogate splits:
##       ESCS    < 0.497    to the right, agree=0.586, adj=0.168, (0 split)
##       BELONG  < -0.71345 to the left,  agree=0.552, adj=0.100, (0 split)
##       ANXTEST < -0.03595 to the left,  agree=0.551, adj=0.097, (0 split)
##       MOTIVAT < -0.16375 to the right, agree=0.549, adj=0.094, (0 split)
##       EMOSUPS < -1.4175  to the left,  agree=0.531, adj=0.058, (0 split)
##
## Node number 273: 7 observations
##   predicted class=Low   expected loss=0.4285714  P(node) =0.0009141962
##     class counts:     4     3
##    probabilities: 0.571 0.429
##
## Node number 280: 95 observations
##   predicted class=Low   expected loss=0.03157895  P(node) =0.01240695
##     class counts:    92     3
##    probabilities: 0.968 0.032
##
```

```
## Node number 281: 239 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.1631799  P(node) =0.03121327
##     class counts:   200    39
##    probabilities: 0.837 0.163
##   left son=562 (229 obs) right son=563 (10 obs)
##   Primary splits:
##       MOTIVAT  < -1.2851  to the right, improve=2.3680360, (0 missing)
##       ANXTEST  < 0.33155  to the right, improve=1.6743630, (0 missing)
##       TEACHSUP < -0.8517  to the right, improve=1.1025680, (0 missing)
##       BELONG   < -1.24195 to the left,  improve=0.4833572, (0 missing)
##       EMOSUPS  < -0.7458  to the right, improve=0.4662111, (0 missing)
##
## Node number 282: 31 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.2580645  P(node) =0.004048583
##     class counts:    23     8
##    probabilities: 0.742 0.258
##   left son=564 (22 obs) right son=565 (9 obs)
##   Primary splits:
##       BELONG   < -0.58475 to the left,  improve=4.2346040, (0 missing)
##       PVSCIE   < 371.4445 to the right, improve=0.5257296, (0 missing)
##       ESCS     < -0.8966  to the left,  improve=0.3818373, (0 missing)
##       EMOSUPS  < -1.54745 to the left,  improve=0.3818373, (0 missing)
##       TEACHSUP < -0.19075 to the left,  improve=0.3818373, (0 missing)
##
## Node number 283: 13 observations
##   predicted class=High  expected loss=0.3076923  P(node) =0.001697793
##     class counts:     4     9
##    probabilities: 0.308 0.692
##
## Node number 286: 45 observations,    complexity param=0.0005910515
##   predicted class=Low   expected loss=0.4  P(node) =0.005876975
##     class counts:    27    18
##    probabilities: 0.600 0.400
##   left son=572 (22 obs) right son=573 (23 obs)
##   Primary splits:
##       BELONG   < -0.6702  to the left,  improve=2.5683790, (0 missing)
##       PVSCIE   < 453.0205 to the right, improve=1.4716220, (0 missing)
##       TEACHSUP < -0.96025 to the right, improve=0.9851351, (0 missing)
##       ANXTEST  < -0.68735 to the left,  improve=0.9151261, (0 missing)
##       EMOSUPS  < -1.57405 to the left,  improve=0.5308756, (0 missing)
##   Surrogate splits:
##       EMOSUPS < -1.57405 to the left,  agree=0.644, adj=0.273, (0 split)
##       ESCS    < -1.1684  to the left,  agree=0.622, adj=0.227, (0 split)
##       MOTIVAT < -0.29805 to the left,  agree=0.622, adj=0.227, (0 split)
##       ANXTEST < -0.81705 to the left,  agree=0.622, adj=0.227, (0 split)
##       IMMIG   splits as  RLL,          agree=0.578, adj=0.136, (0 split)
##
## Node number 287: 11 observations
##   predicted class=High  expected loss=0.2727273  P(node) =0.001436594
##     class counts:     3     8
##    probabilities: 0.273 0.727
##
## Node number 294: 17 observations
##   predicted class=Low   expected loss=0.05882353  P(node) =0.002220191
```

```
##     class counts:    16     1
##    probabilities: 0.941 0.059
##
## Node number 295: 38 observations,    complexity param=0.0002482416
##   predicted class=Low   expected loss=0.3684211  P(node) =0.004962779
##     class counts:    24    14
##    probabilities: 0.632 0.368
##   left son=590 (13 obs) right son=591 (25 obs)
##   Primary splits:
##       ESCS    < 0.67125  to the right, improve=1.8195950, (0 missing)
##       BELONG  < 0.0148   to the left,  improve=1.1426720, (0 missing)
##       MOTIVAT < -0.16375 to the right, improve=0.8259730, (0 missing)
##       ANXTEST < 0.549    to the right, improve=0.7675439, (0 missing)
##       PVSCIE  < 473.3915 to the right, improve=0.7675439, (0 missing)
##   Surrogate splits:
##       ANXTEST < 1.35515  to the right, agree=0.789, adj=0.385, (0 split)
##       IMMIG   splits as  RRL,          agree=0.684, adj=0.077, (0 split)
##
## Node number 296: 90 observations
##   predicted class=Low   expected loss=0.03333333  P(node) =0.01175395
##     class counts:    87     3
##    probabilities: 0.967 0.033
##
## Node number 297: 23 observations,    complexity param=0.000137912
##   predicted class=Low   expected loss=0.2608696  P(node) =0.003003787
##     class counts:    17     6
##    probabilities: 0.739 0.261
##   left son=594 (14 obs) right son=595 (9 obs)
##   Primary splits:
##       EMOSUPS < 0.0634   to the left,  improve=2.5679780, (0 missing)
##       PVSCIE  < 401.1225 to the left,  improve=1.5816860, (0 missing)
##       MOTIVAT < 0.24375  to the right, improve=1.4028990, (0 missing)
##       BELONG  < -0.16515 to the right, improve=0.9157191, (0 missing)
##       ESCS    < 0.09435  to the right, improve=0.4528986, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.696, adj=0.222, (0 split)
##       ANXTEST   < 0.8209   to the right, agree=0.696, adj=0.222, (0 split)
##       BELONG    < -0.35645 to the right, agree=0.696, adj=0.222, (0 split)
##       MOTIVAT   < 0.4182   to the right, agree=0.652, adj=0.111, (0 split)
##
## Node number 302: 8 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.001044796
##     class counts:     6     2
##    probabilities: 0.750 0.250
##
## Node number 303: 56 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.4285714  P(node) =0.007313569
##     class counts:    24    32
##    probabilities: 0.429 0.571
##   left son=606 (30 obs) right son=607 (26 obs)
##   Primary splits:
##       TEACHSUP < 0.9171   to the left,  improve=1.4183150, (0 missing)
##       MOTIVAT  < -0.20585 to the right, improve=0.9740260, (0 missing)
##       ESCS     < -0.7037  to the left,  improve=0.9174603, (0 missing)
```

```
##       PVSCIE   < 427.247  to the right, improve=0.7316017, (0 missing)
##       EMOSUPS  < -1.16365 to the left,  improve=0.7202381, (0 missing)
##   Surrogate splits:
##       IMMIG     splits as  LRL,          agree=0.625, adj=0.192, (0 split)
##       BELONG    < -0.06825 to the left,  agree=0.607, adj=0.154, (0 split)
##       ST004D01T splits as  RL,           agree=0.589, adj=0.115, (0 split)
##       ESCS      < -1.1053  to the right, agree=0.589, adj=0.115, (0 split)
##       ANXTEST   < 0.5469   to the left,  agree=0.589, adj=0.115, (0 split)
##
## Node number 304: 252 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.1666667  P(node) =0.03291106
##     class counts:   210    42
##    probabilities: 0.833 0.167
##   left son=608 (203 obs) right son=609 (49 obs)
##   Primary splits:
##       BELONG    < 0.0148   to the left,  improve=3.109078, (0 missing)
##       ST004D01T splits as  RL,           improve=2.377717, (0 missing)
##       ANXTEST   < -0.36395 to the right, improve=2.120623, (0 missing)
##       ESCS      < 1.02705  to the right, improve=1.116336, (0 missing)
##       TEACHSUP  < -1.23805 to the left,  improve=1.080357, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.6097  to the right, agree=0.813, adj=0.041, (0 split)
##       ANXTEST < -2.2198  to the right, agree=0.813, adj=0.041, (0 split)
##       EMOSUPS < -1.75615 to the right, agree=0.810, adj=0.020, (0 split)
##
## Node number 305: 76 observations,    complexity param=0.001103296
##   predicted class=Low   expected loss=0.3552632  P(node) =0.009925558
##     class counts:    49    27
##    probabilities: 0.645 0.355
##   left son=610 (36 obs) right son=611 (40 obs)
##   Primary splits:
##       MOTIVAT < -0.05665 to the right, improve=3.538012, (0 missing)
##       EMOSUPS < -1.32355 to the left,  improve=2.906699, (0 missing)
##       PVSCIE  < 530.4045 to the right, improve=2.865789, (0 missing)
##       ANXTEST < -0.03595 to the right, improve=2.811958, (0 missing)
##       BELONG  < -0.2314  to the right, improve=2.098866, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 537.2485 to the right, agree=0.645, adj=0.250, (0 split)
##       IMMIG   splits as  RLR,          agree=0.592, adj=0.139, (0 split)
##       ANXTEST < -0.1859  to the right, agree=0.592, adj=0.139, (0 split)
##       EMOSUPS < -0.11225 to the right, agree=0.592, adj=0.139, (0 split)
##       ESCS    < 1.32395  to the right, agree=0.579, adj=0.111, (0 split)
##
## Node number 308: 12 observations
##   predicted class=Low   expected loss=0.08333333  P(node) =0.001567193
##     class counts:    11     1
##    probabilities: 0.917 0.083
##
## Node number 309: 74 observations,    complexity param=0.0009309061
##   predicted class=Low   expected loss=0.4054054  P(node) =0.009664359
##     class counts:    44    30
##    probabilities: 0.595 0.405
##   left son=618 (42 obs) right son=619 (32 obs)
##   Primary splits:
```

```
##       EMOSUPS < 0.27745  to the right, improve=1.7857950, (0 missing)
##       PVSCIE  < 466.5295 to the left,  improve=1.6326650, (0 missing)
##       ESCS    < 0.1705   to the left,  improve=1.5745770, (0 missing)
##       BELONG  < 0.18125  to the right, improve=1.0658680, (0 missing)
##       ANXTEST < -0.49885 to the left,  improve=0.7654193, (0 missing)
##   Surrogate splits:
##       ESCS     < -0.5275  to the right, agree=0.662, adj=0.219, (0 split)
##       MOTIVAT  < -0.30075 to the right, agree=0.649, adj=0.188, (0 split)
##       BELONG   < -0.05625 to the left,  agree=0.635, adj=0.156, (0 split)
##       PVSCIE   < 459.227  to the right, agree=0.595, adj=0.063, (0 split)
##       TEACHSUP < -0.03615 to the left,  agree=0.581, adj=0.031, (0 split)
##
## Node number 310: 18 observations
##   predicted class=Low   expected loss=0.3888889  P(node) =0.00235079
##     class counts:    11     7
##    probabilities: 0.611 0.389
##
## Node number 311: 25 observations
##   predicted class=High  expected loss=0.24  P(node) =0.003264986
##     class counts:     6    19
##    probabilities: 0.240 0.760
##
## Node number 318: 36 observations,    complexity param=0.001241208
##   predicted class=Low   expected loss=0.3611111  P(node) =0.00470158
##     class counts:    23    13
##    probabilities: 0.639 0.361
##   left son=636 (15 obs) right son=637 (21 obs)
##   Primary splits:
##       BELONG   < -0.2675  to the left,  improve=4.458730, (0 missing)
##       EMOSUPS  < -0.37845 to the left,  improve=2.196250, (0 missing)
##       ESCS     < -0.3385  to the right, improve=1.525397, (0 missing)
##       ANXTEST  < -0.0636  to the left,  improve=1.432540, (0 missing)
##       TEACHSUP < -0.70665 to the left,  improve=1.361111, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.750, adj=0.400, (0 split)
##       EMOSUPS   < -0.7503  to the left,  agree=0.722, adj=0.333, (0 split)
##       TEACHSUP  < -2.18385 to the left,  agree=0.639, adj=0.133, (0 split)
##       PVSCIE    < 428.9045 to the right, agree=0.611, adj=0.067, (0 split)
##
## Node number 319: 100 observations,    complexity param=0.001448076
##   predicted class=High  expected loss=0.32  P(node) =0.01305995
##     class counts:    32    68
##    probabilities: 0.320 0.680
##   left son=638 (59 obs) right son=639 (41 obs)
##   Primary splits:
##       ANXTEST   < -0.4501  to the right, improve=4.191352, (0 missing)
##       ST004D01T splits as  RL,           improve=3.619206, (0 missing)
##       MOTIVAT   < -0.1881  to the left,  improve=3.619206, (0 missing)
##       PVSCIE    < 365.1155 to the right, improve=1.939958, (0 missing)
##       ESCS      < -0.6329  to the right, improve=1.146413, (0 missing)
##   Surrogate splits:
##       BELONG   < 0.07125  to the left,  agree=0.65, adj=0.146, (0 split)
##       EMOSUPS  < -0.65335 to the right, agree=0.63, adj=0.098, (0 split)
##       ESCS     < 0.4405   to the left,  agree=0.62, adj=0.073, (0 split)
```

```
##       TEACHSUP < -2.0377  to the right, agree=0.61, adj=0.049, (0 split)
##       PVSCIE   < 307.395  to the right, agree=0.61, adj=0.049, (0 split)
##
## Node number 326: 14 observations
##   predicted class=Low   expected loss=0.07142857  P(node) =0.001828392
##     class counts:    13     1
##    probabilities: 0.929 0.071
##
## Node number 327: 31 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.3548387  P(node) =0.004048583
##     class counts:    20    11
##    probabilities: 0.645 0.355
##   left son=654 (21 obs) right son=655 (10 obs)
##   Primary splits:
##       TEACHSUP  < 0.3908   to the right, improve=1.7745010, (0 missing)
##       BELONG    < -0.73495 to the right, improve=1.5097880, (0 missing)
##       ST004D01T splits as  LR,           improve=1.5066800, (0 missing)
##       MOTIVAT   < 1.6252   to the left,  improve=0.8483103, (0 missing)
##       ESCS      < 0.7442   to the left,  improve=0.5097877, (0 missing)
##   Surrogate splits:
##       ESCS    < 1.57535  to the left,  agree=0.742, adj=0.2, (0 split)
##       MOTIVAT < -0.84455 to the right, agree=0.742, adj=0.2, (0 split)
##
## Node number 330: 49 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.2244898  P(node) =0.006399373
##     class counts:    38    11
##    probabilities: 0.776 0.224
##   left son=660 (22 obs) right son=661 (27 obs)
##   Primary splits:
##       ESCS     < 0.11095  to the left,  improve=4.0241870, (0 missing)
##       BELONG   < -0.77365 to the right, improve=1.2468310, (0 missing)
##       TEACHSUP < -0.7468  to the left,  improve=1.1112240, (0 missing)
##       MOTIVAT  < 0.09025  to the right, improve=1.0646730, (0 missing)
##       PVSCIE   < 400.0985 to the right, improve=0.9073783, (0 missing)
##   Surrogate splits:
##       TEACHSUP < 0.2901   to the right, agree=0.694, adj=0.318, (0 split)
##       BELONG   < -1.44675 to the left,  agree=0.653, adj=0.227, (0 split)
##       MOTIVAT  < 1.6252   to the right, agree=0.633, adj=0.182, (0 split)
##       PVSCIE   < 499.5805 to the right, agree=0.633, adj=0.182, (0 split)
##       IMMIG    splits as  RLR,          agree=0.592, adj=0.091, (0 split)
##
## Node number 331: 31 observations,    complexity param=0.0006895601
##   predicted class=High  expected loss=0.483871  P(node) =0.004048583
##     class counts:    15    16
##    probabilities: 0.484 0.516
##   left son=662 (18 obs) right son=663 (13 obs)
##   Primary splits:
##       ANXTEST  < 0.7928   to the right, improve=1.3898540, (0 missing)
##       BELONG   < -0.9139  to the right, improve=1.2905940, (0 missing)
##       TEACHSUP < 1.1842   to the right, improve=0.9981567, (0 missing)
##       MOTIVAT  < -0.02165 to the right, improve=0.8873797, (0 missing)
##       PVSCIE   < 446.945  to the left,  improve=0.5747801, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.2611  to the right, agree=0.710, adj=0.308, (0 split)
```

```
##       PVSCIE  < 440.462  to the left,  agree=0.710, adj=0.308, (0 split)
##       IMMIG   splits as  LLR,          agree=0.677, adj=0.231, (0 split)
##       ESCS    < -1.2327  to the right, agree=0.645, adj=0.154, (0 split)
##
## Node number 332: 10 observations
##   predicted class=Low   expected loss=0.1  P(node) =0.001305995
##     class counts:     9     1
##    probabilities: 0.900 0.100
##
## Node number 333: 13 observations
##   predicted class=High  expected loss=0.2307692  P(node) =0.001697793
##     class counts:     3    10
##    probabilities: 0.231 0.769
##
## Node number 338: 13 observations
##   predicted class=Low   expected loss=0.1538462  P(node) =0.001697793
##     class counts:    11     2
##    probabilities: 0.846 0.154
##
## Node number 339: 8 observations
##   predicted class=High  expected loss=0.25  P(node) =0.001044796
##     class counts:     2     6
##    probabilities: 0.250 0.750
##
## Node number 342: 22 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.4090909  P(node) =0.002873188
##     class counts:    13     9
##    probabilities: 0.591 0.409
##   left son=684 (10 obs) right son=685 (12 obs)
##   Primary splits:
##       ESCS     < 0.46285  to the right, improve=1.6030300, (0 missing)
##       MOTIVAT  < 0.1757   to the right, improve=1.1720780, (0 missing)
##       TEACHSUP < -0.22165 to the left,  improve=0.8181818, (0 missing)
##       PVSCIE   < 444.637  to the left,  improve=0.5411255, (0 missing)
##       BELONG   < -0.332   to the left,  improve=0.4363636, (0 missing)
##   Surrogate splits:
##       ANXTEST  < 1.53545  to the left,  agree=0.682, adj=0.3, (0 split)
##       BELONG   < -0.058   to the right, agree=0.636, adj=0.2, (0 split)
##       TEACHSUP < 0.3415   to the right, agree=0.636, adj=0.2, (0 split)
##       PVSCIE   < 310.232  to the left,  agree=0.636, adj=0.2, (0 split)
##       IMMIG    splits as  LRR,          agree=0.591, adj=0.1, (0 split)
##
## Node number 343: 13 observations
##   predicted class=High  expected loss=0.2307692  P(node) =0.001697793
##     class counts:     3    10
##    probabilities: 0.231 0.769
##
## Node number 344: 9 observations
##   predicted class=Low   expected loss=0.1111111  P(node) =0.001175395
##     class counts:     8     1
##    probabilities: 0.889 0.111
##
## Node number 345: 96 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4895833  P(node) =0.01253755
```

```
##     class counts:    47    49
##    probabilities: 0.490 0.510
##   left son=690 (7 obs) right son=691 (89 obs)
##   Primary splits:
##       MOTIVAT < -0.4056  to the left,  improve=2.040162, (0 missing)
##       BELONG  < 0.1618   to the right, improve=2.040162, (0 missing)
##       PVSCIE  < 599.141  to the left,  improve=1.574405, (0 missing)
##       ANXTEST < 0.5593   to the right, improve=1.210666, (0 missing)
##       ESCS    < 1.35015  to the right, improve=0.860119, (0 missing)
##
## Node number 352: 107 observations
##   predicted class=Low   expected loss=0.1775701  P(node) =0.01397414
##     class counts:    88    19
##    probabilities: 0.822 0.178
##
## Node number 353: 21 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.4285714  P(node) =0.002742588
##     class counts:    12     9
##    probabilities: 0.571 0.429
##   left son=706 (14 obs) right son=707 (7 obs)
##   Primary splits:
##       ESCS      < -0.8833  to the left,  improve=1.7142860, (0 missing)
##       ST004D01T splits as  LR,           improve=1.1220780, (0 missing)
##       MOTIVAT   < -0.1881  to the right, improve=0.9972527, (0 missing)
##       ANXTEST   < -0.4318  to the right, improve=0.4285714, (0 missing)
##       BELONG    < -0.84175 to the right, improve=0.4285714, (0 missing)
##   Surrogate splits:
##       BELONG   < -0.64195 to the left,  agree=0.810, adj=0.429, (0 split)
##       TEACHSUP < -0.65355 to the right, agree=0.714, adj=0.143, (0 split)
##
## Node number 354: 61 observations,    complexity param=0.001654944
##   predicted class=Low   expected loss=0.3442623  P(node) =0.007966567
##     class counts:    40    21
##    probabilities: 0.656 0.344
##   left son=708 (31 obs) right son=709 (30 obs)
##   Primary splits:
##       BELONG   < -0.7087  to the left,  improve=4.2205530, (0 missing)
##       TEACHSUP < -0.1393  to the left,  improve=2.4206630, (0 missing)
##       ESCS     < -0.5939  to the right, improve=2.1653220, (0 missing)
##       PVSCIE   < 552.8385 to the right, improve=1.7689410, (0 missing)
##       IMMIG    splits as  RLL,         improve=0.8853232, (0 missing)
##   Surrogate splits:
##       ANXTEST  < -0.41055 to the left,  agree=0.656, adj=0.300, (0 split)
##       ESCS     < -0.5939  to the right, agree=0.623, adj=0.233, (0 split)
##       TEACHSUP < 0.40405  to the left,  agree=0.607, adj=0.200, (0 split)
##       MOTIVAT  < 1.6252   to the right, agree=0.590, adj=0.167, (0 split)
##       PVSCIE   < 632.7315 to the left,  agree=0.590, adj=0.167, (0 split)
##
## Node number 355: 16 observations
##   predicted class=High  expected loss=0.25  P(node) =0.002089591
##     class counts:     4    12
##    probabilities: 0.250 0.750
##
## Node number 356: 31 observations,    complexity param=0.0008274721
```

```
##   predicted class=Low   expected loss=0.3870968  P(node) =0.004048583
##     class counts:    19    12
##    probabilities: 0.613 0.387
##   left son=712 (13 obs) right son=713 (18 obs)
##   Primary splits:
##       MOTIVAT   < 0.38475  to the left,  improve=2.4361730, (0 missing)
##       ANXTEST   < -0.2053  to the right, improve=2.3336090, (0 missing)
##       ST004D01T splits as  RL,           improve=1.2430110, (0 missing)
##       ESCS      < -0.3086  to the right, improve=0.8430108, (0 missing)
##       TEACHSUP  < -0.03445 to the left,  improve=0.8430108, (0 missing)
##   Surrogate splits:
##       ESCS    < -0.8504  to the left,  agree=0.742, adj=0.385, (0 split)
##       PVSCIE  < 337.3195 to the left,  agree=0.742, adj=0.385, (0 split)
##       ANXTEST < -0.2053  to the right, agree=0.710, adj=0.308, (0 split)
##       BELONG  < -0.6345  to the right, agree=0.677, adj=0.231, (0 split)
##       IMMIG   splits as  LRR,          agree=0.645, adj=0.154, (0 split)
##
## Node number 357: 7 observations
##   predicted class=High  expected loss=0  P(node) =0.0009141962
##     class counts:     0     7
##    probabilities: 0.000 1.000
##
## Node number 368: 49 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.2857143  P(node) =0.006399373
##     class counts:    35    14
##    probabilities: 0.714 0.286
##   left son=736 (38 obs) right son=737 (11 obs)
##   Primary splits:
##       TEACHSUP < 1.1842   to the left,  improve=1.9138760, (0 missing)
##       ANXTEST  < 0.25445  to the left,  improve=1.4594590, (0 missing)
##       PVSCIE   < 420.668  to the right, improve=1.3333330, (0 missing)
##       ESCS     < -0.2508  to the right, improve=1.1538460, (0 missing)
##       MOTIVAT  < -0.1073  to the right, improve=0.5647059, (0 missing)
##
## Node number 369: 56 observations,    complexity param=0.001517032
##   predicted class=High  expected loss=0.4107143  P(node) =0.007313569
##     class counts:    23    33
##    probabilities: 0.411 0.589
##   left son=738 (19 obs) right son=739 (37 obs)
##   Primary splits:
##       ANXTEST  < 0.04455  to the left,  improve=2.805578, (0 missing)
##       PVSCIE   < 573.337  to the right, improve=2.743506, (0 missing)
##       ESCS     < 0.6622   to the left,  improve=2.169643, (0 missing)
##       BELONG   < -0.1799  to the right, improve=1.434416, (0 missing)
##       TEACHSUP < 0.51685  to the right, improve=1.211868, (0 missing)
##   Surrogate splits:
##       ESCS     < 1.32875  to the right, agree=0.732, adj=0.211, (0 split)
##       MOTIVAT  < 0.50905  to the right, agree=0.679, adj=0.053, (0 split)
##       BELONG   < -0.30675 to the left,  agree=0.679, adj=0.053, (0 split)
##       TEACHSUP < -1.35215 to the left,  agree=0.679, adj=0.053, (0 split)
##       PVSCIE   < 549.781  to the right, agree=0.679, adj=0.053, (0 split)
##
## Node number 370: 20 observations
##   predicted class=Low   expected loss=0.35  P(node) =0.002611989
```

```
##     class counts:    13     7
##    probabilities: 0.650 0.350
##
## Node number 371: 102 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.3333333  P(node) =0.01332114
##     class counts:    34    68
##    probabilities: 0.333 0.667
##   left son=742 (77 obs) right son=743 (25 obs)
##   Primary splits:
##       MOTIVAT  < -0.13045 to the right, improve=3.0143720, (0 missing)
##       ESCS     < 1.02985  to the right, improve=1.9385960, (0 missing)
##       TEACHSUP < -0.93985 to the left,  improve=1.5768120, (0 missing)
##       BELONG   < -0.32815 to the right, improve=1.3284490, (0 missing)
##       PVSCIE   < 456.916  to the left,  improve=0.6772358, (0 missing)
##   Surrogate splits:
##       ANXTEST < -0.1983  to the left,  agree=0.775, adj=0.08, (0 split)
##       ESCS    < -0.64595 to the right, agree=0.765, adj=0.04, (0 split)
##
## Node number 380: 38 observations,    complexity param=0.000275824
##   predicted class=High  expected loss=0.3684211  P(node) =0.004962779
##     class counts:    14    24
##    probabilities: 0.368 0.632
##   left son=760 (18 obs) right son=761 (20 obs)
##   Primary splits:
##       ANXTEST  < -0.21105 to the right, improve=2.3953220, (0 missing)
##       ESCS     < 0.33075  to the left,  improve=1.8947370, (0 missing)
##       BELONG   < 0.0589   to the left,  improve=0.7675439, (0 missing)
##       TEACHSUP < 1.1804   to the right, improve=0.6421937, (0 missing)
##       PVSCIE   < 426.9995 to the left,  improve=0.1604010, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.658, adj=0.278, (0 split)
##       PVSCIE    < 481.391  to the left,  agree=0.658, adj=0.278, (0 split)
##       ESCS      < -0.1413  to the left,  agree=0.632, adj=0.222, (0 split)
##       BELONG    < -0.0111  to the left,  agree=0.579, adj=0.111, (0 split)
##       IMMIG     splits as  LRR,          agree=0.553, adj=0.056, (0 split)
##
## Node number 381: 62 observations
##   predicted class=High  expected loss=0.1774194  P(node) =0.008097166
##     class counts:    11    51
##    probabilities: 0.177 0.823
##
## Node number 396: 13 observations
##   predicted class=Low   expected loss=0.07692308  P(node) =0.001697793
##     class counts:    12     1
##    probabilities: 0.923 0.077
##
## Node number 397: 9 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.001175395
##     class counts:     4     5
##    probabilities: 0.444 0.556
##
## Node number 406: 7 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     5     2
```

```
##    probabilities: 0.714 0.286
##
## Node number 407: 22 observations
##   predicted class=High  expected loss=0.2727273  P(node) =0.002873188
##     class counts:     6    16
##    probabilities: 0.273 0.727
##
## Node number 424: 8 observations
##   predicted class=Low   expected loss=0.125  P(node) =0.001044796
##     class counts:     7     1
##    probabilities: 0.875 0.125
##
## Node number 425: 38 observations,    complexity param=0.00103434
##   predicted class=Low   expected loss=0.5  P(node) =0.004962779
##     class counts:    19    19
##    probabilities: 0.500 0.500
##   left son=850 (7 obs) right son=851 (31 obs)
##   Primary splits:
##       IMMIG   splits as  RLR,          improve=2.188940, (0 missing)
##       ESCS    < -0.527   to the left,  improve=1.461538, (0 missing)
##       PVSCIE  < 569.9925 to the right, improve=1.461538, (0 missing)
##       MOTIVAT < 1.6252   to the left,  improve=1.085714, (0 missing)
##       EMOSUPS < 0.27745  to the left,  improve=1.085714, (0 missing)
##   Surrogate splits:
##       ESCS < -1.41425 to the left,  agree=0.895, adj=0.429, (0 split)
##
## Node number 442: 7 observations
##   predicted class=Low   expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     6     1
##    probabilities: 0.857 0.143
##
## Node number 443: 17 observations
##   predicted class=High  expected loss=0.2941176  P(node) =0.002220191
##     class counts:     5    12
##    probabilities: 0.294 0.706
##
## Node number 444: 8 observations
##   predicted class=Low   expected loss=0  P(node) =0.001044796
##     class counts:     8     0
##    probabilities: 1.000 0.000
##
## Node number 445: 48 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.3541667  P(node) =0.006268774
##     class counts:    17    31
##    probabilities: 0.354 0.646
##   left son=890 (32 obs) right son=891 (16 obs)
##   Primary splits:
##       ESCS    < -0.73955 to the right, improve=2.5208330, (0 missing)
##       MOTIVAT < 0.5009   to the right, improve=1.2110810, (0 missing)
##       EMOSUPS < -0.58265 to the right, improve=1.1250000, (0 missing)
##       ANXTEST < -0.6491  to the right, improve=1.0059520, (0 missing)
##       PVSCIE  < 455.36   to the left,  improve=0.8984422, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.92545 to the right, agree=0.708, adj=0.125, (0 split)
```

```
##       TEACHSUP < -0.66645 to the right, agree=0.708, adj=0.125, (0 split)
##       ANXTEST  < -1.58535 to the right, agree=0.688, adj=0.063, (0 split)
##
## Node number 446: 63 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.3809524  P(node) =0.008227765
##     class counts:    24    39
##    probabilities: 0.381 0.619
##   left son=892 (12 obs) right son=893 (51 obs)
##   Primary splits:
##       ESCS     < -0.8313  to the left,  improve=2.420168, (0 missing)
##       ANXTEST  < -0.4712  to the right, improve=1.428571, (0 missing)
##       TEACHSUP < -0.1393  to the right, improve=1.289286, (0 missing)
##       MOTIVAT  < -0.7205  to the right, improve=1.056943, (0 missing)
##       BELONG   < 1.3796   to the left,  improve=0.987943, (0 missing)
##
## Node number 447: 97 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.1752577  P(node) =0.01266815
##     class counts:    17    80
##    probabilities: 0.175 0.825
##   left son=894 (79 obs) right son=895 (18 obs)
##   Primary splits:
##       PVSCIE  < 415.916  to the right, improve=1.3576930, (0 missing)
##       BELONG  < 1.04315  to the right, improve=1.2293900, (0 missing)
##       EMOSUPS < 0.425    to the left,  improve=1.0050930, (0 missing)
##       ANXTEST < -0.22735 to the right, improve=0.9503280, (0 missing)
##       ESCS    < 0.36385  to the left,  improve=0.9485964, (0 missing)
##   Surrogate splits:
##       BELONG < 2.6004   to the left,  agree=0.835, adj=0.111, (0 split)
##       IMMIG  splits as  LRL,          agree=0.825, adj=0.056, (0 split)
##
## Node number 452: 47 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.3617021  P(node) =0.006138174
##     class counts:    30    17
##    probabilities: 0.638 0.362
##   left son=904 (16 obs) right son=905 (31 obs)
##   Primary splits:
##       TEACHSUP < -0.26345 to the right, improve=1.4722890, (0 missing)
##       ANXTEST  < 0.4256   to the left,  improve=1.1600030, (0 missing)
##       BELONG   < 0.47845  to the left,  improve=1.1521280, (0 missing)
##       MOTIVAT  < 1.6252   to the left,  improve=0.9698044, (0 missing)
##       PVSCIE   < 511.588  to the right, improve=0.6548549, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.0942  to the left,  agree=0.702, adj=0.125, (0 split)
##       MOTIVAT < -0.12515 to the left,  agree=0.702, adj=0.125, (0 split)
##       ANXTEST < 0.7854   to the right, agree=0.681, adj=0.063, (0 split)
##       PVSCIE  < 596.81   to the right, agree=0.681, adj=0.063, (0 split)
##
## Node number 453: 14 observations
##   predicted class=High  expected loss=0.2857143  P(node) =0.001828392
##     class counts:     4    10
##    probabilities: 0.286 0.714
##
## Node number 454: 7 observations
##   predicted class=Low   expected loss=0  P(node) =0.0009141962
```

```
##     class counts:     7     0
##    probabilities: 1.000 0.000
##
## Node number 455: 46 observations
##   predicted class=High  expected loss=0.2391304  P(node) =0.006007575
##     class counts:    11    35
##    probabilities: 0.239 0.761
##
## Node number 456: 20 observations
##   predicted class=Low   expected loss=0.2  P(node) =0.002611989
##     class counts:    16     4
##    probabilities: 0.800 0.200
##
## Node number 457: 19 observations
##   predicted class=High  expected loss=0.4210526  P(node) =0.00248139
##     class counts:     8    11
##    probabilities: 0.421 0.579
##
## Node number 458: 27 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4814815  P(node) =0.003526185
##     class counts:    13    14
##    probabilities: 0.481 0.519
##   left son=916 (7 obs) right son=917 (20 obs)
##   Primary splits:
##       ESCS     < 1.2087   to the right, improve=2.6671960, (0 missing)
##       TEACHSUP < 1.1804   to the left,  improve=1.5167760, (0 missing)
##       MOTIVAT  < 1.6252   to the left,  improve=1.0461870, (0 missing)
##       PVSCIE   < 472.1805 to the right, improve=0.4704925, (0 missing)
##       ANXTEST  < 0.22935  to the left,  improve=0.4461874, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 391.7405 to the left,  agree=0.815, adj=0.286, (0 split)
##       ANXTEST < 0.4931   to the right, agree=0.778, adj=0.143, (0 split)
##
## Node number 459: 17 observations
##   predicted class=High  expected loss=0.05882353  P(node) =0.002220191
##     class counts:     1    16
##    probabilities: 0.059 0.941
##
## Node number 462: 19 observations
##   predicted class=High  expected loss=0.3684211  P(node) =0.00248139
##     class counts:     7    12
##    probabilities: 0.368 0.632
##
## Node number 463: 60 observations,    complexity param=0.000275824
##   predicted class=High  expected loss=0.1666667  P(node) =0.007835967
##     class counts:    10    50
##    probabilities: 0.167 0.833
##   left son=926 (29 obs) right son=927 (31 obs)
##   Primary splits:
##       ESCS    < -0.55475 to the left,  improve=1.3385240, (0 missing)
##       ANXTEST < 1.09035  to the left,  improve=0.7482993, (0 missing)
##       BELONG  < 0.51195  to the right, improve=0.6666667, (0 missing)
##       EMOSUPS < 1.0333   to the left,  improve=0.5882353, (0 missing)
##       MOTIVAT < -0.16375 to the right, improve=0.4402516, (0 missing)
```

```
##   Surrogate splits:
##       PVSCIE    < 485.4305 to the left,  agree=0.617, adj=0.207, (0 split)
##       MOTIVAT   < 0.4378   to the left,  agree=0.600, adj=0.172, (0 split)
##       ANXTEST   < 0.50225  to the left,  agree=0.600, adj=0.172, (0 split)
##       ST004D01T splits as  RL,           agree=0.583, adj=0.138, (0 split)
##       BELONG    < 0.86455  to the right, agree=0.583, adj=0.138, (0 split)
##
## Node number 476: 38 observations,    complexity param=0.0002482416
##   predicted class=High  expected loss=0.3947368  P(node) =0.004962779
##     class counts:    15    23
##    probabilities: 0.395 0.605
##   left son=952 (24 obs) right son=953 (14 obs)
##   Primary splits:
##       ANXTEST  < 0.38745  to the right, improve=1.4436090, (0 missing)
##       PVSCIE   < 444.669  to the left,  improve=1.3157890, (0 missing)
##       ESCS     < -0.098   to the left,  improve=1.0745610, (0 missing)
##       TEACHSUP < -0.28455 to the right, improve=0.7348178, (0 missing)
##       MOTIVAT  < 0.52755  to the right, improve=0.6228807, (0 missing)
##   Surrogate splits:
##       ESCS     < 0.11215  to the left,  agree=0.711, adj=0.214, (0 split)
##       PVSCIE   < 487.1735 to the left,  agree=0.711, adj=0.214, (0 split)
##       TEACHSUP < -0.28455 to the right, agree=0.684, adj=0.143, (0 split)
##       IMMIG    splits as  LLR,          agree=0.658, adj=0.071, (0 split)
##       BELONG   < 1.5327   to the left,  agree=0.658, adj=0.071, (0 split)
##
## Node number 477: 37 observations
##   predicted class=High  expected loss=0.08108108  P(node) =0.00483218
##     class counts:     3    34
##    probabilities: 0.081 0.919
##
## Node number 496: 22 observations,    complexity param=0.0004964832
##   predicted class=Low   expected loss=0.5  P(node) =0.002873188
##     class counts:    11    11
##    probabilities: 0.500 0.500
##   left son=992 (12 obs) right son=993 (10 obs)
##   Primary splits:
##       ESCS    < -0.2396  to the right, improve=3.3000000, (0 missing)
##       BELONG  < 1.28595  to the right, improve=2.6190480, (0 missing)
##       ANXTEST < -0.2287  to the left,  improve=2.2727270, (0 missing)
##       PVSCIE  < 494.7295 to the right, improve=1.5714290, (0 missing)
##       MOTIVAT < 0.91985  to the left,  improve=0.8461538, (0 missing)
##   Surrogate splits:
##       BELONG   < 1.28595  to the right, agree=0.773, adj=0.5, (0 split)
##       TEACHSUP < 1.4392   to the left,  agree=0.727, adj=0.4, (0 split)
##       MOTIVAT  < 0.91985  to the left,  agree=0.682, adj=0.3, (0 split)
##       ANXTEST  < -0.1579  to the left,  agree=0.682, adj=0.3, (0 split)
##       PVSCIE   < 494.7295 to the right, agree=0.636, adj=0.2, (0 split)
##
## Node number 497: 11 observations
##   predicted class=High  expected loss=0.09090909  P(node) =0.001436594
##     class counts:     1    10
##    probabilities: 0.091 0.909
##
## Node number 502: 199 observations,    complexity param=0.000137912
```

```
##   predicted class=High  expected loss=0.1155779  P(node) =0.02598929
##     class counts:    23   176
##    probabilities: 0.116 0.884
##   left son=1004 (13 obs) right son=1005 (186 obs)
##   Primary splits:
##       ANXTEST  < -1.8632  to the left,  improve=1.0266760, (0 missing)
##       TEACHSUP < 0.9171   to the left,  improve=0.9541364, (0 missing)
##       PVSCIE   < 532.046  to the left,  improve=0.9069465, (0 missing)
##       BELONG   < 1.45115  to the left,  improve=0.6776229, (0 missing)
##       ESCS     < 1.2214   to the right, improve=0.6287723, (0 missing)
##
## Node number 503: 97 observations
##   predicted class=High  expected loss=0.03092784  P(node) =0.01266815
##     class counts:     3    94
##    probabilities: 0.031 0.969
##
## Node number 518: 48 observations
##   predicted class=Low   expected loss=0.125  P(node) =0.006268774
##     class counts:    42     6
##    probabilities: 0.875 0.125
##
## Node number 519: 7 observations
##   predicted class=High  expected loss=0.4285714  P(node) =0.0009141962
##     class counts:     3     4
##    probabilities: 0.429 0.571
##
## Node number 544: 312 observations
##   predicted class=Low   expected loss=0.02884615  P(node) =0.04074703
##     class counts:   303     9
##    probabilities: 0.971 0.029
##
## Node number 545: 309 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.09385113  P(node) =0.04035523
##     class counts:   280    29
##    probabilities: 0.906 0.094
##   left son=1090 (254 obs) right son=1091 (55 obs)
##   Primary splits:
##       TEACHSUP < 0.8673   to the left,  improve=1.5078150, (0 missing)
##       EMOSUPS  < 0.0634   to the left,  improve=0.9827823, (0 missing)
##       BELONG   < -0.73725 to the left,  improve=0.8676779, (0 missing)
##       PVSCIE   < 496.8865 to the left,  improve=0.6506884, (0 missing)
##       MOTIVAT  < 1.6252   to the left,  improve=0.6129723, (0 missing)
##   Surrogate splits:
##       ESCS < -1.64545 to the right, agree=0.825, adj=0.018, (0 split)
##
## Node number 562: 229 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.1484716  P(node) =0.02990727
##     class counts:   195    34
##    probabilities: 0.852 0.148
##   left son=1124 (179 obs) right son=1125 (50 obs)
##   Primary splits:
##       TEACHSUP < -0.86305 to the right, improve=1.0717510, (0 missing)
##       MOTIVAT  < -0.80695 to the left,  improve=1.0193150, (0 missing)
##       ANXTEST  < 0.52575  to the right, improve=0.7888873, (0 missing)
```

```
##       BELONG   < -1.24195 to the left,  improve=0.7099172, (0 missing)
##       ESCS     < -0.50435 to the right, improve=0.6846347, (0 missing)
##   Surrogate splits:
##       ANXTEST < 2.44375  to the left,  agree=0.786, adj=0.02, (0 split)
##       BELONG  < -0.4684  to the left,  agree=0.786, adj=0.02, (0 split)
##
## Node number 563: 10 observations
##   predicted class=Low   expected loss=0.5  P(node) =0.001305995
##     class counts:     5     5
##    probabilities: 0.500 0.500
##
## Node number 564: 22 observations
##   predicted class=Low   expected loss=0.09090909  P(node) =0.002873188
##     class counts:    20     2
##    probabilities: 0.909 0.091
##
## Node number 565: 9 observations
##   predicted class=High  expected loss=0.3333333  P(node) =0.001175395
##     class counts:     3     6
##    probabilities: 0.333 0.667
##
## Node number 572: 22 observations
##   predicted class=Low   expected loss=0.2272727  P(node) =0.002873188
##     class counts:    17     5
##    probabilities: 0.773 0.227
##
## Node number 573: 23 observations,    complexity param=0.0005910515
##   predicted class=High  expected loss=0.4347826  P(node) =0.003003787
##     class counts:    10    13
##    probabilities: 0.435 0.565
##   left son=1146 (13 obs) right son=1147 (10 obs)
##   Primary splits:
##       ANXTEST  < -0.68735 to the left,  improve=1.9505020, (0 missing)
##       BELONG   < -0.5703  to the right, improve=0.8376812, (0 missing)
##       PVSCIE   < 392.5955 to the right, improve=0.4472050, (0 missing)
##       ESCS     < -0.34085 to the left,  improve=0.4313320, (0 missing)
##       TEACHSUP < -0.0338  to the right, improve=0.4313320, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.04505 to the right, agree=0.739, adj=0.4, (0 split)
##       ESCS     < -0.8641  to the right, agree=0.696, adj=0.3, (0 split)
##       BELONG   < -0.50425 to the left,  agree=0.696, adj=0.3, (0 split)
##       PVSCIE   < 429.634  to the left,  agree=0.696, adj=0.3, (0 split)
##       TEACHSUP < 1.1804   to the right, agree=0.652, adj=0.2, (0 split)
##
## Node number 590: 13 observations
##   predicted class=Low   expected loss=0.1538462  P(node) =0.001697793
##     class counts:    11     2
##    probabilities: 0.846 0.154
##
## Node number 591: 25 observations,    complexity param=0.0002482416
##   predicted class=Low   expected loss=0.48  P(node) =0.003264986
##     class counts:    13    12
##    probabilities: 0.520 0.480
##   left son=1182 (8 obs) right son=1183 (17 obs)
```

```
##   Primary splits:
##       ST004D01T splits as  LR,           improve=1.2447060, (0 missing)
##       MOTIVAT   < -0.12515 to the right, improve=1.0673020, (0 missing)
##       PVSCIE    < 476.767  to the right, improve=0.5319481, (0 missing)
##       BELONG    < 0.0148   to the left,  improve=0.4947059, (0 missing)
##       TEACHSUP  < 0.5277   to the right, improve=0.4928205, (0 missing)
##   Surrogate splits:
##       ESCS   < -0.94535 to the left,  agree=0.76, adj=0.25, (0 split)
##       PVSCIE < 460.134  to the left,  agree=0.76, adj=0.25, (0 split)
##
## Node number 594: 14 observations
##   predicted class=Low   expected loss=0.07142857  P(node) =0.001828392
##     class counts:    13     1
##    probabilities: 0.929 0.071
##
## Node number 595: 9 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.001175395
##     class counts:     4     5
##    probabilities: 0.444 0.556
##
## Node number 606: 30 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.4666667  P(node) =0.003917984
##     class counts:    16    14
##    probabilities: 0.533 0.467
##   left son=1212 (23 obs) right son=1213 (7 obs)
##   Primary splits:
##       BELONG   < -0.12165 to the left,  improve=2.7842650, (0 missing)
##       TEACHSUP < 0.37385  to the right, improve=2.5532430, (0 missing)
##       ANXTEST  < 0.2724   to the right, improve=1.1196690, (0 missing)
##       PVSCIE   < 424.315  to the left,  improve=1.1196690, (0 missing)
##       ESCS     < -0.66135 to the left,  improve=0.8333333, (0 missing)
##   Surrogate splits:
##       TEACHSUP < -0.12825 to the right, agree=0.833, adj=0.286, (0 split)
##       MOTIVAT  < -0.3826  to the right, agree=0.800, adj=0.143, (0 split)
##
## Node number 607: 26 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.3076923  P(node) =0.003395586
##     class counts:     8    18
##    probabilities: 0.308 0.692
##   left son=1214 (7 obs) right son=1215 (19 obs)
##   Primary splits:
##       PVSCIE  < 423.5705 to the right, improve=3.1671490, (0 missing)
##       MOTIVAT < 0.0648   to the right, improve=1.6483520, (0 missing)
##       ANXTEST < 0.50125  to the left,  improve=1.2307690, (0 missing)
##       BELONG  < -0.3103  to the right, improve=0.8223776, (0 missing)
##       EMOSUPS < 0.1011   to the left,  improve=0.7713675, (0 missing)
##   Surrogate splits:
##       BELONG  < 0.065    to the right, agree=0.808, adj=0.286, (0 split)
##       ESCS    < -1.276   to the left,  agree=0.769, adj=0.143, (0 split)
##       MOTIVAT < -0.44015 to the left,  agree=0.769, adj=0.143, (0 split)
##
## Node number 608: 203 observations
##   predicted class=Low   expected loss=0.1280788  P(node) =0.02651169
##     class counts:   177    26
```

```
##    probabilities: 0.872 0.128
##
## Node number 609: 49 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.3265306  P(node) =0.006399373
##     class counts:    33    16
##    probabilities: 0.673 0.327
##   left son=1218 (17 obs) right son=1219 (32 obs)
##   Primary splits:
##       MOTIVAT   < 0.57855  to the right, improve=2.2716090, (0 missing)
##       BELONG    < 0.0637   to the right, improve=1.9958360, (0 missing)
##       ANXTEST   < -0.3134  to the right, improve=1.4542460, (0 missing)
##       ST004D01T splits as  RL,           improve=1.0232430, (0 missing)
##       TEACHSUP  < 0.25565  to the right, improve=0.8122817, (0 missing)
##   Surrogate splits:
##       TEACHSUP < 0.4204   to the right, agree=0.714, adj=0.176, (0 split)
##       IMMIG    splits as  RLR,          agree=0.694, adj=0.118, (0 split)
##       ESCS     < -0.88205 to the left,  agree=0.694, adj=0.118, (0 split)
##       PVSCIE   < 530.772  to the right, agree=0.694, adj=0.118, (0 split)
##
## Node number 610: 36 observations
##   predicted class=Low   expected loss=0.1944444  P(node) =0.00470158
##     class counts:    29     7
##    probabilities: 0.806 0.194
##
## Node number 611: 40 observations,    complexity param=0.001103296
##   predicted class=Low   expected loss=0.5  P(node) =0.005223978
##     class counts:    20    20
##    probabilities: 0.500 0.500
##   left son=1222 (14 obs) right son=1223 (26 obs)
##   Primary splits:
##       MOTIVAT   < -0.5246  to the left,  improve=3.5164840, (0 missing)
##       PVSCIE    < 490.8035 to the right, improve=3.5125450, (0 missing)
##       ANXTEST   < -0.21105 to the right, improve=3.3333330, (0 missing)
##       ESCS      < 0.9187   to the left,  improve=1.0666670, (0 missing)
##       ST004D01T splits as  RL,           improve=0.8791209, (0 missing)
##   Surrogate splits:
##       BELONG  < 0.12165  to the right, agree=0.725, adj=0.214, (0 split)
##       IMMIG   splits as  RLL,          agree=0.700, adj=0.143, (0 split)
##       ANXTEST < -1.22    to the left,  agree=0.700, adj=0.143, (0 split)
##       PVSCIE  < 621.6925 to the right, agree=0.700, adj=0.143, (0 split)
##       ESCS    < -1.3267  to the left,  agree=0.675, adj=0.071, (0 split)
##
## Node number 618: 42 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.3095238  P(node) =0.005485177
##     class counts:    29    13
##    probabilities: 0.690 0.310
##   left son=1236 (18 obs) right son=1237 (24 obs)
##   Primary splits:
##       ANXTEST < -0.44875 to the left,  improve=2.4801590, (0 missing)
##       PVSCIE  < 466.5295 to the left,  improve=1.6095240, (0 missing)
##       BELONG  < -0.01865 to the right, improve=1.1523810, (0 missing)
##       ESCS    < 0.1705   to the left,  improve=0.6800697, (0 missing)
##       MOTIVAT < 0.682    to the right, improve=0.4801587, (0 missing)
##   Surrogate splits:
```

```
##       PVSCIE  < 513.3365 to the right, agree=0.690, adj=0.278, (0 split)
##       ESCS    < 1.19065  to the right, agree=0.667, adj=0.222, (0 split)
##       MOTIVAT < -0.3582  to the left,  agree=0.595, adj=0.056, (0 split)
##
## Node number 619: 32 observations,    complexity param=0.0009309061
##   predicted class=High  expected loss=0.46875  P(node) =0.004179182
##     class counts:    15    17
##    probabilities: 0.469 0.531
##   left son=1238 (25 obs) right son=1239 (7 obs)
##   Primary splits:
##       MOTIVAT   < 0.87555  to the left,  improve=1.903214, (0 missing)
##       ESCS      < 0.17015  to the left,  improve=1.837500, (0 missing)
##       ANXTEST   < -0.29045 to the right, improve=1.562500, (0 missing)
##       TEACHSUP  < 0.06435  to the right, improve=1.288149, (0 missing)
##       ST004D01T splits as  RL,           improve=0.941829, (0 missing)
##   Surrogate splits:
##       IMMIG    splits as  LLR,          agree=0.844, adj=0.286, (0 split)
##       TEACHSUP < -0.6035  to the right, agree=0.812, adj=0.143, (0 split)
##
## Node number 636: 15 observations
##   predicted class=Low   expected loss=0.06666667  P(node) =0.001958992
##     class counts:    14     1
##    probabilities: 0.933 0.067
##
## Node number 637: 21 observations,    complexity param=0.001241208
##   predicted class=High  expected loss=0.4285714  P(node) =0.002742588
##     class counts:     9    12
##    probabilities: 0.429 0.571
##   left son=1274 (7 obs) right son=1275 (14 obs)
##   Primary splits:
##       TEACHSUP < -0.6042  to the left,  improve=1.7142860, (0 missing)
##       ESCS     < -0.3385  to the right, improve=1.3412700, (0 missing)
##       EMOSUPS  < -0.29005 to the left,  improve=0.4285714, (0 missing)
##       BELONG   < 0.0622   to the right, improve=0.4285714, (0 missing)
##       PVSCIE   < 387.5105 to the left,  improve=0.4285714, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.895    to the left,  agree=0.762, adj=0.286, (0 split)
##       PVSCIE  < 366.3145 to the left,  agree=0.762, adj=0.286, (0 split)
##       ESCS    < -1.35645 to the left,  agree=0.714, adj=0.143, (0 split)
##       BELONG  < -0.07825 to the left,  agree=0.714, adj=0.143, (0 split)
##
## Node number 638: 59 observations,    complexity param=0.001448076
##   predicted class=High  expected loss=0.440678  P(node) =0.007705368
##     class counts:    26    33
##    probabilities: 0.441 0.559
##   left son=1276 (17 obs) right son=1277 (42 obs)
##   Primary splits:
##       MOTIVAT   < -0.1881  to the left,  improve=3.359256, (0 missing)
##       PVSCIE    < 372.238  to the right, improve=2.814397, (0 missing)
##       TEACHSUP  < 0.2389   to the left,  improve=1.263569, (0 missing)
##       ST004D01T splits as  RL,           improve=1.169287, (0 missing)
##       ESCS      < -0.17715 to the right, improve=1.114821, (0 missing)
##   Surrogate splits:
##       BELONG < -0.3396  to the left,  agree=0.763, adj=0.176, (0 split)
```

```
##
## Node number 639: 41 observations
##   predicted class=High  expected loss=0.1463415  P(node) =0.005354578
##     class counts:     6    35
##    probabilities: 0.146 0.854
##
## Node number 654: 21 observations
##   predicted class=Low   expected loss=0.2380952  P(node) =0.002742588
##     class counts:    16     5
##    probabilities: 0.762 0.238
##
## Node number 655: 10 observations
##   predicted class=High  expected loss=0.4  P(node) =0.001305995
##     class counts:     4     6
##    probabilities: 0.400 0.600
##
## Node number 660: 22 observations
##   predicted class=Low   expected loss=0  P(node) =0.002873188
##     class counts:    22     0
##    probabilities: 1.000 0.000
##
## Node number 661: 27 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.4074074  P(node) =0.003526185
##     class counts:    16    11
##    probabilities: 0.593 0.407
##   left son=1322 (10 obs) right son=1323 (17 obs)
##   Primary splits:
##       TEACHSUP < -0.28755 to the left,  improve=3.0017430, (0 missing)
##       BELONG   < -0.757   to the right, improve=2.3703700, (0 missing)
##       ESCS     < 0.26545  to the right, improve=1.7798940, (0 missing)
##       PVSCIE   < 403.154  to the right, improve=1.0765110, (0 missing)
##       MOTIVAT  < 0.09025  to the right, improve=0.8612129, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.8345  to the left,  agree=0.704, adj=0.2, (0 split)
##       IMMIG   splits as  RLR,          agree=0.667, adj=0.1, (0 split)
##       ESCS    < 0.7005   to the right, agree=0.667, adj=0.1, (0 split)
##       ANXTEST < 2.24835  to the right, agree=0.667, adj=0.1, (0 split)
##       BELONG  < -1.14685 to the left,  agree=0.667, adj=0.1, (0 split)
##
## Node number 662: 18 observations
##   predicted class=Low   expected loss=0.3888889  P(node) =0.00235079
##     class counts:    11     7
##    probabilities: 0.611 0.389
##
## Node number 663: 13 observations
##   predicted class=High  expected loss=0.3076923  P(node) =0.001697793
##     class counts:     4     9
##    probabilities: 0.308 0.692
##
## Node number 684: 10 observations
##   predicted class=Low   expected loss=0.2  P(node) =0.001305995
##     class counts:     8     2
##    probabilities: 0.800 0.200
##
```

```
## Node number 685: 12 observations
##   predicted class=High  expected loss=0.4166667  P(node) =0.001567193
##     class counts:     5     7
##    probabilities: 0.417 0.583
##
## Node number 690: 7 observations
##   predicted class=Low   expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     6     1
##    probabilities: 0.857 0.143
##
## Node number 691: 89 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4606742  P(node) =0.01162335
##     class counts:    41    48
##    probabilities: 0.461 0.539
##   left son=1382 (7 obs) right son=1383 (82 obs)
##   Primary splits:
##       BELONG  < 0.1618   to the right, improve=2.3884820, (0 missing)
##       PVSCIE  < 599.141  to the left,  improve=1.2312130, (0 missing)
##       ANXTEST < 0.8442   to the right, improve=0.9163268, (0 missing)
##       MOTIVAT < 0.875    to the left,  improve=0.8078792, (0 missing)
##       ESCS    < 1.35015  to the right, improve=0.7748357, (0 missing)
##
## Node number 706: 14 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.001828392
##     class counts:    10     4
##    probabilities: 0.714 0.286
##
## Node number 707: 7 observations
##   predicted class=High  expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     2     5
##    probabilities: 0.286 0.714
##
## Node number 708: 31 observations
##   predicted class=Low   expected loss=0.1612903  P(node) =0.004048583
##     class counts:    26     5
##    probabilities: 0.839 0.161
##
## Node number 709: 30 observations,    complexity param=0.001654944
##   predicted class=High  expected loss=0.4666667  P(node) =0.003917984
##     class counts:    14    16
##    probabilities: 0.467 0.533
##   left son=1418 (12 obs) right son=1419 (18 obs)
##   Primary splits:
##       TEACHSUP < 0.30765  to the left,  improve=3.2111110, (0 missing)
##       PVSCIE   < 592.1905 to the right, improve=3.2111110, (0 missing)
##       BELONG   < -0.61885 to the right, improve=1.9147000, (0 missing)
##       ESCS     < -0.59245 to the right, improve=0.5979296, (0 missing)
##       ANXTEST  < -0.09935 to the right, improve=0.5761905, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 557.496  to the right, agree=0.767, adj=0.417, (0 split)
##       IMMIG   splits as  RLR,          agree=0.700, adj=0.250, (0 split)
##       ANXTEST < 0.1406   to the right, agree=0.700, adj=0.250, (0 split)
##       BELONG  < -0.47115 to the right, agree=0.700, adj=0.250, (0 split)
##       MOTIVAT < 1.266    to the left,  agree=0.667, adj=0.167, (0 split)
```

```
##
## Node number 712: 13 observations
##   predicted class=Low   expected loss=0.1538462  P(node) =0.001697793
##     class counts:    11     2
##    probabilities: 0.846 0.154
##
## Node number 713: 18 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.00235079
##     class counts:     8    10
##    probabilities: 0.444 0.556
##
## Node number 736: 38 observations
##   predicted class=Low   expected loss=0.2105263  P(node) =0.004962779
##     class counts:    30     8
##    probabilities: 0.789 0.211
##
## Node number 737: 11 observations
##   predicted class=High  expected loss=0.4545455  P(node) =0.001436594
##     class counts:     5     6
##    probabilities: 0.455 0.545
##
## Node number 738: 19 observations
##   predicted class=Low   expected loss=0.3684211  P(node) =0.00248139
##     class counts:    12     7
##    probabilities: 0.632 0.368
##
## Node number 739: 37 observations,    complexity param=0.000413736
##   predicted class=High  expected loss=0.2972973  P(node) =0.00483218
##     class counts:    11    26
##    probabilities: 0.297 0.703
##   left son=1478 (15 obs) right son=1479 (22 obs)
##   Primary splits:
##       BELONG   < -0.03625 to the right, improve=2.8109750, (0 missing)
##       TEACHSUP < 0.51685  to the right, improve=0.8241653, (0 missing)
##       ESCS     < 0.65635  to the left,  improve=0.6796976, (0 missing)
##       ANXTEST  < 0.2529   to the left,  improve=0.6061261, (0 missing)
##       MOTIVAT  < 0.4435   to the right, improve=0.5881144, (0 missing)
##   Surrogate splits:
##       ESCS     < -0.69895 to the left,  agree=0.649, adj=0.133, (0 split)
##       TEACHSUP < -1.6578  to the left,  agree=0.649, adj=0.133, (0 split)
##       PVSCIE   < 395.5115 to the left,  agree=0.649, adj=0.133, (0 split)
##       IMMIG    splits as  RLR,          agree=0.622, adj=0.067, (0 split)
##       MOTIVAT  < 0.96945  to the right, agree=0.622, adj=0.067, (0 split)
##
## Node number 742: 77 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4025974  P(node) =0.01005616
##     class counts:    31    46
##    probabilities: 0.403 0.597
##   left son=1484 (11 obs) right son=1485 (66 obs)
##   Primary splits:
##       IMMIG     splits as  RLL,          improve=2.705628, (0 missing)
##       TEACHSUP  < -0.1891  to the left,  improve=1.997977, (0 missing)
##       ST004D01T splits as  RL,           improve=1.945628, (0 missing)
##       ESCS      < 1.0278   to the right, improve=1.646104, (0 missing)
```

```
##       ANXTEST   < -1.29035 to the right, improve=1.251082, (0 missing)
##
## Node number 743: 25 observations
##   predicted class=High  expected loss=0.12  P(node) =0.003264986
##     class counts:     3    22
##    probabilities: 0.120 0.880
##
## Node number 760: 18 observations
##   predicted class=Low   expected loss=0.4444444  P(node) =0.00235079
##     class counts:    10     8
##    probabilities: 0.556 0.444
##
## Node number 761: 20 observations
##   predicted class=High  expected loss=0.2  P(node) =0.002611989
##     class counts:     4    16
##    probabilities: 0.200 0.800
##
## Node number 850: 7 observations
##   predicted class=Low   expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     6     1
##    probabilities: 0.857 0.143
##
## Node number 851: 31 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4193548  P(node) =0.004048583
##     class counts:    13    18
##    probabilities: 0.419 0.581
##   left son=1702 (7 obs) right son=1703 (24 obs)
##   Primary splits:
##       PVSCIE   < 459.461  to the left,  improve=1.5729650, (0 missing)
##       ESCS     < 0.7028   to the left,  improve=1.3824880, (0 missing)
##       TEACHSUP < 0.8673   to the right, improve=0.9856631, (0 missing)
##       MOTIVAT  < 1.1031   to the left,  improve=0.7331378, (0 missing)
##       BELONG   < 0.71715  to the right, improve=0.4301075, (0 missing)
##
## Node number 890: 32 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.46875  P(node) =0.004179182
##     class counts:    15    17
##    probabilities: 0.469 0.531
##   left son=1780 (16 obs) right son=1781 (16 obs)
##   Primary splits:
##       ESCS    < -0.10075 to the left,  improve=1.5625000, (0 missing)
##       MOTIVAT < -0.49015 to the right, improve=1.0208330, (0 missing)
##       EMOSUPS < -0.65765 to the right, improve=1.0208330, (0 missing)
##       BELONG  < 0.3386   to the right, improve=0.9418290, (0 missing)
##       PVSCIE  < 455.36   to the left,  improve=0.5248016, (0 missing)
##   Surrogate splits:
##       EMOSUPS < -0.10855 to the right, agree=0.688, adj=0.375, (0 split)
##       BELONG  < 0.41145  to the right, agree=0.688, adj=0.375, (0 split)
##       MOTIVAT < 0.5009   to the right, agree=0.625, adj=0.250, (0 split)
##       ANXTEST < -0.67025 to the right, agree=0.625, adj=0.250, (0 split)
##       PVSCIE  < 453.9025 to the left,  agree=0.594, adj=0.188, (0 split)
##
## Node number 891: 16 observations
##   predicted class=High  expected loss=0.125  P(node) =0.002089591
```

```
##     class counts:     2    14
##    probabilities: 0.125 0.875
##
## Node number 892: 12 observations
##   predicted class=Low   expected loss=0.3333333  P(node) =0.001567193
##     class counts:     8     4
##    probabilities: 0.667 0.333
##
## Node number 893: 51 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.3137255  P(node) =0.006660572
##     class counts:    16    35
##    probabilities: 0.314 0.686
##   left son=1786 (33 obs) right son=1787 (18 obs)
##   Primary splits:
##       PVSCIE   < 439.0885 to the right, improve=2.2840170, (0 missing)
##       BELONG   < 1.3796   to the left,  improve=1.3926020, (0 missing)
##       ESCS     < -0.0783  to the right, improve=0.8919584, (0 missing)
##       TEACHSUP < -0.1393  to the right, improve=0.8919584, (0 missing)
##       ANXTEST  < -1.16065 to the left,  improve=0.7624037, (0 missing)
##   Surrogate splits:
##       BELONG < 1.0882   to the left,  agree=0.745, adj=0.278, (0 split)
##       ESCS   < -0.6927  to the right, agree=0.667, adj=0.056, (0 split)
##
## Node number 894: 79 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.2151899  P(node) =0.01031736
##     class counts:    17    62
##    probabilities: 0.215 0.785
##   left son=1788 (25 obs) right son=1789 (54 obs)
##   Primary splits:
##       ANXTEST < -0.22735 to the right, improve=1.533915, (0 missing)
##       PVSCIE  < 430.4395 to the left,  improve=1.444108, (0 missing)
##       ESCS    < -0.6266  to the left,  improve=1.264794, (0 missing)
##       BELONG  < 1.04315  to the right, improve=1.234194, (0 missing)
##       EMOSUPS < 0.425    to the left,  improve=1.183544, (0 missing)
##   Surrogate splits:
##       ESCS     < 1.08485  to the right, agree=0.722, adj=0.12, (0 split)
##       PVSCIE   < 426.5345 to the left,  agree=0.722, adj=0.12, (0 split)
##       BELONG   < 0.5587   to the left,  agree=0.696, adj=0.04, (0 split)
##       TEACHSUP < -0.28595 to the left,  agree=0.696, adj=0.04, (0 split)
##
## Node number 895: 18 observations
##   predicted class=High  expected loss=0  P(node) =0.00235079
##     class counts:     0    18
##    probabilities: 0.000 1.000
##
## Node number 904: 16 observations
##   predicted class=Low   expected loss=0.1875  P(node) =0.002089591
##     class counts:    13     3
##    probabilities: 0.812 0.187
##
## Node number 905: 31 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.4516129  P(node) =0.004048583
##     class counts:    17    14
##    probabilities: 0.548 0.452
```

```
##   left son=1810 (15 obs) right son=1811 (16 obs)
##   Primary splits:
##       ANXTEST  < 0.4256   to the left,  improve=1.9881720, (0 missing)
##       PVSCIE   < 511.588  to the right, improve=1.4052590, (0 missing)
##       TEACHSUP < -0.41435 to the left,  improve=1.2476960, (0 missing)
##       MOTIVAT  < 1.6252   to the left,  improve=1.1730210, (0 missing)
##       ESCS     < 0.39335  to the right, improve=0.8765778, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < 1.0579   to the left,  agree=0.645, adj=0.267, (0 split)
##       EMOSUPS  < 0.83245  to the left,  agree=0.645, adj=0.267, (0 split)
##       BELONG   < 0.81015  to the right, agree=0.613, adj=0.200, (0 split)
##       TEACHSUP < -0.5096  to the right, agree=0.613, adj=0.200, (0 split)
##       PVSCIE   < 562.0695 to the right, agree=0.613, adj=0.200, (0 split)
##
## Node number 916: 7 observations
##   predicted class=Low   expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     6     1
##    probabilities: 0.857 0.143
##
## Node number 917: 20 observations
##   predicted class=High  expected loss=0.35  P(node) =0.002611989
##     class counts:     7    13
##    probabilities: 0.350 0.650
##
## Node number 926: 29 observations,    complexity param=0.000275824
##   predicted class=High  expected loss=0.2758621  P(node) =0.003787384
##     class counts:     8    21
##    probabilities: 0.276 0.724
##   left son=1852 (8 obs) right son=1853 (21 obs)
##   Primary splits:
##       ESCS     < -0.67145 to the right, improve=2.6933500, (0 missing)
##       PVSCIE   < 425.7155 to the left,  improve=1.1100160, (0 missing)
##       TEACHSUP < 1.3644   to the left,  improve=0.5573607, (0 missing)
##       MOTIVAT  < 0.09305  to the right, improve=0.5028736, (0 missing)
##       ANXTEST  < 0.50225  to the right, improve=0.4881677, (0 missing)
##   Surrogate splits:
##       ANXTEST < 0.25785  to the left,  agree=0.759, adj=0.125, (0 split)
##
## Node number 927: 31 observations
##   predicted class=High  expected loss=0.06451613  P(node) =0.004048583
##     class counts:     2    29
##    probabilities: 0.065 0.935
##
## Node number 952: 24 observations,    complexity param=0.0002482416
##   predicted class=Low   expected loss=0.5  P(node) =0.003134387
##     class counts:    12    12
##    probabilities: 0.500 0.500
##   left son=1904 (7 obs) right son=1905 (17 obs)
##   Primary splits:
##       ESCS     < -0.0963  to the left,  improve=0.9075630, (0 missing)
##       ANXTEST  < 0.9496   to the left,  improve=0.9075630, (0 missing)
##       TEACHSUP < 0.1479   to the right, improve=0.8000000, (0 missing)
##       MOTIVAT  < 0.895    to the left,  improve=0.7552448, (0 missing)
##       PVSCIE   < 444.669  to the left,  improve=0.3428571, (0 missing)
```

```
##   Surrogate splits:
##       MOTIVAT < -0.12515 to the left,  agree=0.792, adj=0.286, (0 split)
##       ANXTEST < 0.5489   to the left,  agree=0.792, adj=0.286, (0 split)
##       PVSCIE  < 488.102  to the right, agree=0.792, adj=0.286, (0 split)
##
## Node number 953: 14 observations
##   predicted class=High  expected loss=0.2142857  P(node) =0.001828392
##     class counts:     3    11
##    probabilities: 0.214 0.786
##
## Node number 992: 12 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.001567193
##     class counts:     9     3
##    probabilities: 0.750 0.250
##
## Node number 993: 10 observations
##   predicted class=High  expected loss=0.2  P(node) =0.001305995
##     class counts:     2     8
##    probabilities: 0.200 0.800
##
## Node number 1004: 13 observations
##   predicted class=High  expected loss=0.3076923  P(node) =0.001697793
##     class counts:     4     9
##    probabilities: 0.308 0.692
##
## Node number 1005: 186 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.1021505  P(node) =0.0242915
##     class counts:    19   167
##    probabilities: 0.102 0.898
##   left son=2010 (88 obs) right son=2011 (98 obs)
##   Primary splits:
##       ANXTEST  < -0.38675 to the right, improve=1.5584470, (0 missing)
##       TEACHSUP < 0.0185   to the left,  improve=1.3561420, (0 missing)
##       BELONG   < 0.5772   to the right, improve=0.7464847, (0 missing)
##       PVSCIE   < 532.046  to the left,  improve=0.6878998, (0 missing)
##       ESCS     < -0.6682  to the right, improve=0.4416329, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.608, adj=0.170, (0 split)
##       ESCS      < -0.54545 to the left,  agree=0.565, adj=0.080, (0 split)
##       TEACHSUP  < 0.3941   to the right, agree=0.543, adj=0.034, (0 split)
##       MOTIVAT   < 1.45175  to the right, agree=0.538, adj=0.023, (0 split)
##       BELONG    < 0.6744   to the left,  agree=0.538, adj=0.023, (0 split)
##
## Node number 1090: 254 observations
##   predicted class=Low   expected loss=0.07086614  P(node) =0.03317226
##     class counts:   236    18
##    probabilities: 0.929 0.071
##
## Node number 1091: 55 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.2  P(node) =0.00718297
##     class counts:    44    11
##    probabilities: 0.800 0.200
##   left son=2182 (16 obs) right son=2183 (39 obs)
##   Primary splits:
```

```
##       ESCS    < -0.48295 to the left,  improve=1.8051280, (0 missing)
##       BELONG  < -0.5798  to the left,  improve=1.1510840, (0 missing)
##       ANXTEST < -0.4501  to the right, improve=0.9777778, (0 missing)
##       MOTIVAT < -0.2737  to the left,  improve=0.9777778, (0 missing)
##       EMOSUPS < -1.0746  to the left,  improve=0.9777778, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.53245 to the left,  agree=0.727, adj=0.063, (0 split)
##
## Node number 1124: 179 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.122905  P(node) =0.0233773
##     class counts:   157    22
##    probabilities: 0.877 0.123
##   left son=2248 (101 obs) right son=2249 (78 obs)
##   Primary splits:
##       TEACHSUP < 0.2339   to the left,  improve=1.3317070, (0 missing)
##       ANXTEST  < 0.33155  to the right, improve=1.1477340, (0 missing)
##       MOTIVAT  < -0.4672  to the left,  improve=0.9990415, (0 missing)
##       BELONG   < -0.63445 to the left,  improve=0.9467418, (0 missing)
##       EMOSUPS  < 0.1011   to the left,  improve=0.8889931, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.00765 to the right, agree=0.603, adj=0.090, (0 split)
##       IMMIG   splits as  LLR,          agree=0.598, adj=0.077, (0 split)
##       EMOSUPS < 0.06065  to the left,  agree=0.587, adj=0.051, (0 split)
##       PVSCIE  < 342.0755 to the right, agree=0.587, adj=0.051, (0 split)
##       ANXTEST < -0.03595 to the right, agree=0.581, adj=0.038, (0 split)
##
## Node number 1125: 50 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.24  P(node) =0.006529973
##     class counts:    38    12
##    probabilities: 0.760 0.240
##   left son=2250 (26 obs) right son=2251 (24 obs)
##   Primary splits:
##       TEACHSUP < -1.10585 to the left,  improve=1.6823080, (0 missing)
##       PVSCIE   < 391.1345 to the right, improve=0.9856140, (0 missing)
##       ESCS     < -0.91715 to the left,  improve=0.9343867, (0 missing)
##       EMOSUPS  < -0.7503  to the right, improve=0.8041026, (0 missing)
##       BELONG   < -0.67925 to the right, improve=0.6833498, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.4056  to the left,  agree=0.64, adj=0.250, (0 split)
##       ANXTEST < 0.39015  to the left,  agree=0.64, adj=0.250, (0 split)
##       PVSCIE  < 387.12   to the right, agree=0.64, adj=0.250, (0 split)
##       ESCS    < 0.40595  to the right, agree=0.58, adj=0.125, (0 split)
##       EMOSUPS < -0.51895 to the left,  agree=0.58, adj=0.125, (0 split)
##
## Node number 1146: 13 observations
##   predicted class=Low   expected loss=0.3846154  P(node) =0.001697793
##     class counts:     8     5
##    probabilities: 0.615 0.385
##
## Node number 1147: 10 observations
##   predicted class=High  expected loss=0.2  P(node) =0.001305995
##     class counts:     2     8
##    probabilities: 0.200 0.800
##
```

```
## Node number 1182: 8 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.001044796
##     class counts:     6     2
##    probabilities: 0.750 0.250
##
## Node number 1183: 17 observations
##   predicted class=High  expected loss=0.4117647  P(node) =0.002220191
##     class counts:     7    10
##    probabilities: 0.412 0.588
##
## Node number 1212: 23 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.3478261  P(node) =0.003003787
##     class counts:    15     8
##    probabilities: 0.652 0.348
##   left son=2424 (16 obs) right son=2425 (7 obs)
##   Primary splits:
##       ANXTEST  < 0.2724   to the right, improve=2.70264000, (0 missing)
##       PVSCIE   < 381.258  to the left,  improve=1.21811600, (0 missing)
##       TEACHSUP < 0.37385  to the right, improve=1.16205500, (0 missing)
##       ESCS     < -0.66135 to the left,  improve=0.84549690, (0 missing)
##       MOTIVAT  < -0.08535 to the right, improve=0.09632107, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 435.724  to the left,  agree=0.870, adj=0.571, (0 split)
##       ESCS    < -0.9256  to the right, agree=0.739, adj=0.143, (0 split)
##       EMOSUPS < 0.24125  to the left,  agree=0.739, adj=0.143, (0 split)
##
## Node number 1213: 7 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     1     6
##    probabilities: 0.143 0.857
##
## Node number 1214: 7 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     5     2
##    probabilities: 0.714 0.286
##
## Node number 1215: 19 observations
##   predicted class=High  expected loss=0.1578947  P(node) =0.00248139
##     class counts:     3    16
##    probabilities: 0.158 0.842
##
## Node number 1218: 17 observations
##   predicted class=Low   expected loss=0.1176471  P(node) =0.002220191
##     class counts:    15     2
##    probabilities: 0.882 0.118
##
## Node number 1219: 32 observations,    complexity param=0.0006206041
##   predicted class=Low   expected loss=0.4375  P(node) =0.004179182
##     class counts:    18    14
##    probabilities: 0.563 0.438
##   left son=2438 (11 obs) right son=2439 (21 obs)
##   Primary splits:
##       MOTIVAT < -0.48925 to the left,  improve=2.1915580, (0 missing)
##       BELONG  < 0.15385  to the right, improve=1.8714570, (0 missing)
```

```
##       PVSCIE  < 489.932  to the left,  improve=1.6409090, (0 missing)
##       ANXTEST < -0.60555 to the right, improve=1.1468250, (0 missing)
##       ESCS    < 0.24325  to the left,  improve=0.6127451, (0 missing)
##   Surrogate splits:
##       TEACHSUP < -1.0169  to the left,  agree=0.750, adj=0.273, (0 split)
##       ESCS     < -1.07705 to the left,  agree=0.719, adj=0.182, (0 split)
##       PVSCIE   < 474.0355 to the left,  agree=0.719, adj=0.182, (0 split)
##
## Node number 1222: 14 observations
##   predicted class=Low   expected loss=0.2142857  P(node) =0.001828392
##     class counts:    11     3
##    probabilities: 0.786 0.214
##
## Node number 1223: 26 observations,    complexity param=0.001103296
##   predicted class=High  expected loss=0.3461538  P(node) =0.003395586
##     class counts:     9    17
##    probabilities: 0.346 0.654
##   left son=2446 (11 obs) right son=2447 (15 obs)
##   Primary splits:
##       PVSCIE    < 530.6145 to the right, improve=3.2116550, (0 missing)
##       ANXTEST   < -0.21105 to the right, improve=2.0942310, (0 missing)
##       ST004D01T splits as  RL,           improve=1.2071390, (0 missing)
##       ESCS      < 0.9225   to the left,  improve=0.7917872, (0 missing)
##       MOTIVAT   < -0.2227  to the left,  improve=0.7692308, (0 missing)
##   Surrogate splits:
##       ANXTEST   < -0.92955 to the left,  agree=0.692, adj=0.273, (0 split)
##       ESCS      < -0.73815 to the left,  agree=0.654, adj=0.182, (0 split)
##       EMOSUPS   < -1.0746  to the left,  agree=0.654, adj=0.182, (0 split)
##       ST004D01T splits as  RL,           agree=0.615, adj=0.091, (0 split)
##
## Node number 1236: 18 observations
##   predicted class=Low   expected loss=0.1111111  P(node) =0.00235079
##     class counts:    16     2
##    probabilities: 0.889 0.111
##
## Node number 1237: 24 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.4583333  P(node) =0.003134387
##     class counts:    13    11
##    probabilities: 0.542 0.458
##   left son=2474 (10 obs) right son=2475 (14 obs)
##   Primary splits:
##       PVSCIE   < 483.3615 to the left,  improve=2.2880950, (0 missing)
##       ESCS     < 0.39095  to the left,  improve=2.0416670, (0 missing)
##       MOTIVAT  < 0.29055  to the right, improve=1.2500000, (0 missing)
##       TEACHSUP < -0.13905 to the left,  improve=0.4500000, (0 missing)
##       ANXTEST  < -0.1579  to the right, improve=0.3082751, (0 missing)
##   Surrogate splits:
##       BELONG    < -0.01865 to the right, agree=0.750, adj=0.4, (0 split)
##       IMMIG     splits as  RLR,          agree=0.708, adj=0.3, (0 split)
##       TEACHSUP  < -0.5764  to the left,  agree=0.708, adj=0.3, (0 split)
##       ST004D01T splits as  RL,           agree=0.667, adj=0.2, (0 split)
##       ANXTEST   < 0.1318   to the right, agree=0.667, adj=0.2, (0 split)
##
## Node number 1238: 25 observations,    complexity param=0.0009309061
```

```
##   predicted class=Low   expected loss=0.44  P(node) =0.003264986
##     class counts:    14    11
##    probabilities: 0.560 0.440
##   left son=2476 (15 obs) right son=2477 (10 obs)
##   Primary splits:
##       ESCS      < 0.17015  to the left,  improve=2.2533330, (0 missing)
##       ST004D01T splits as  RL,           improve=1.7168250, (0 missing)
##       ANXTEST   < -0.27155 to the right, improve=1.6661540, (0 missing)
##       TEACHSUP  < 0.30825  to the right, improve=1.5148050, (0 missing)
##       MOTIVAT   < -0.42745 to the right, improve=0.8533333, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 503.333  to the left,  agree=0.80, adj=0.5, (0 split)
##       TEACHSUP < 0.1384   to the right, agree=0.72, adj=0.3, (0 split)
##       MOTIVAT  < -0.42745 to the right, agree=0.68, adj=0.2, (0 split)
##       BELONG   < 0.1478   to the left,  agree=0.64, adj=0.1, (0 split)
##
## Node number 1239: 7 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     1     6
##    probabilities: 0.143 0.857
##
## Node number 1274: 7 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     5     2
##    probabilities: 0.714 0.286
##
## Node number 1275: 14 observations
##   predicted class=High  expected loss=0.2857143  P(node) =0.001828392
##     class counts:     4    10
##    probabilities: 0.286 0.714
##
## Node number 1276: 17 observations
##   predicted class=Low   expected loss=0.2941176  P(node) =0.002220191
##     class counts:    12     5
##    probabilities: 0.706 0.294
##
## Node number 1277: 42 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.3333333  P(node) =0.005485177
##     class counts:    14    28
##    probabilities: 0.333 0.667
##   left son=2554 (33 obs) right son=2555 (9 obs)
##   Primary splits:
##       PVSCIE    < 362.1405 to the right, improve=2.5454550, (0 missing)
##       ST004D01T splits as  RL,           improve=2.3809520, (0 missing)
##       TEACHSUP  < 0.9171   to the left,  improve=1.7517110, (0 missing)
##       ESCS      < -0.78965 to the right, improve=1.2130860, (0 missing)
##       ANXTEST   < 0.01525  to the right, improve=0.8296296, (0 missing)
##   Surrogate splits:
##       TEACHSUP < -0.96825 to the right, agree=0.833, adj=0.222, (0 split)
##       ANXTEST  < -0.39965 to the right, agree=0.810, adj=0.111, (0 split)
##
## Node number 1322: 10 observations
##   predicted class=Low   expected loss=0.1  P(node) =0.001305995
##     class counts:     9     1
```

```
##    probabilities: 0.900 0.100
##
## Node number 1323: 17 observations
##   predicted class=High  expected loss=0.4117647  P(node) =0.002220191
##     class counts:     7    10
##    probabilities: 0.412 0.588
##
## Node number 1382: 7 observations
##   predicted class=Low   expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     6     1
##    probabilities: 0.857 0.143
##
## Node number 1383: 82 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4268293  P(node) =0.01070916
##     class counts:    35    47
##    probabilities: 0.427 0.573
##   left son=2766 (39 obs) right son=2767 (43 obs)
##   Primary splits:
##       ANXTEST   < 0.8442   to the right, improve=1.0998880, (0 missing)
##       ST004D01T splits as  RL,           improve=1.0807420, (0 missing)
##       MOTIVAT   < 1.0579   to the left,  improve=0.9219512, (0 missing)
##       PVSCIE    < 599.141  to the left,  improve=0.8790941, (0 missing)
##       TEACHSUP  < 1.1842   to the left,  improve=0.6886179, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.2947   to the right, agree=0.634, adj=0.231, (0 split)
##       BELONG  < -0.17375 to the right, agree=0.622, adj=0.205, (0 split)
##       ESCS    < -0.41875 to the left,  agree=0.598, adj=0.154, (0 split)
##       PVSCIE  < 398.08   to the left,  agree=0.561, adj=0.077, (0 split)
##       IMMIG   splits as  LRR,          agree=0.549, adj=0.051, (0 split)
##
## Node number 1418: 12 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.001567193
##     class counts:     9     3
##    probabilities: 0.750 0.250
##
## Node number 1419: 18 observations
##   predicted class=High  expected loss=0.2777778  P(node) =0.00235079
##     class counts:     5    13
##    probabilities: 0.278 0.722
##
## Node number 1478: 15 observations
##   predicted class=Low   expected loss=0.4666667  P(node) =0.001958992
##     class counts:     8     7
##    probabilities: 0.533 0.467
##
## Node number 1479: 22 observations
##   predicted class=High  expected loss=0.1363636  P(node) =0.002873188
##     class counts:     3    19
##    probabilities: 0.136 0.864
##
## Node number 1484: 11 observations
##   predicted class=Low   expected loss=0.2727273  P(node) =0.001436594
##     class counts:     8     3
##    probabilities: 0.727 0.273
```

```
##
## Node number 1485: 66 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.3484848  P(node) =0.008619564
##     class counts:    23    43
##    probabilities: 0.348 0.652
##   left son=2970 (46 obs) right son=2971 (20 obs)
##   Primary splits:
##       BELONG    < -0.32815 to the right, improve=2.2610010, (0 missing)
##       ESCS      < -0.3378  to the left,  improve=1.4911260, (0 missing)
##       PVSCIE    < 602.5945 to the left,  improve=1.0946970, (0 missing)
##       TEACHSUP  < -0.7927  to the left,  improve=0.7784137, (0 missing)
##       ST004D01T splits as  RL,           improve=0.7424242, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 1.04755  to the left,  agree=0.758, adj=0.20, (0 split)
##       ESCS    < 1.5748   to the left,  agree=0.727, adj=0.10, (0 split)
##       ANXTEST < -0.2209  to the left,  agree=0.712, adj=0.05, (0 split)
##
## Node number 1702: 7 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     5     2
##    probabilities: 0.714 0.286
##
## Node number 1703: 24 observations
##   predicted class=High  expected loss=0.3333333  P(node) =0.003134387
##     class counts:     8    16
##    probabilities: 0.333 0.667
##
## Node number 1780: 16 observations
##   predicted class=Low   expected loss=0.375  P(node) =0.002089591
##     class counts:    10     6
##    probabilities: 0.625 0.375
##
## Node number 1781: 16 observations
##   predicted class=High  expected loss=0.3125  P(node) =0.002089591
##     class counts:     5    11
##    probabilities: 0.313 0.688
##
## Node number 1786: 33 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.4242424  P(node) =0.004309782
##     class counts:    14    19
##    probabilities: 0.424 0.576
##   left son=3572 (23 obs) right son=3573 (10 obs)
##   Primary splits:
##       TEACHSUP < -0.1393  to the right, improve=1.4429510, (0 missing)
##       PVSCIE   < 523.396  to the left,  improve=1.1450220, (0 missing)
##       ANXTEST  < -0.4712  to the right, improve=1.0535430, (0 missing)
##       ESCS     < 0.6698   to the left,  improve=0.7575758, (0 missing)
##       MOTIVAT  < 0.7118   to the left,  improve=0.4545455, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 580.3435 to the left,  agree=0.758, adj=0.2, (0 split)
##       ESCS    < 1.10455  to the left,  agree=0.727, adj=0.1, (0 split)
##       EMOSUPS < -0.4579  to the left,  agree=0.727, adj=0.1, (0 split)
##
## Node number 1787: 18 observations
```

```
##   predicted class=High  expected loss=0.1111111  P(node) =0.00235079
##     class counts:     2    16
##    probabilities: 0.111 0.889
##
## Node number 1788: 25 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.36  P(node) =0.003264986
##     class counts:     9    16
##    probabilities: 0.360 0.640
##   left son=3576 (17 obs) right son=3577 (8 obs)
##   Primary splits:
##       ANXTEST  < 0.01375  to the left,  improve=3.0494120, (0 missing)
##       BELONG   < 0.6744   to the right, improve=2.3020510, (0 missing)
##       TEACHSUP < 0.9171   to the right, improve=1.9200000, (0 missing)
##       ESCS     < 0.6182   to the left,  improve=1.2472730, (0 missing)
##       MOTIVAT  < 0.2061   to the right, improve=0.8533333, (0 missing)
##   Surrogate splits:
##       EMOSUPS < 0.425    to the left,  agree=0.76, adj=0.250, (0 split)
##       ESCS    < 1.1561   to the left,  agree=0.72, adj=0.125, (0 split)
##       MOTIVAT < 0.70265  to the left,  agree=0.72, adj=0.125, (0 split)
##       BELONG  < 0.6744   to the right, agree=0.72, adj=0.125, (0 split)
##       PVSCIE  < 567.684  to the left,  agree=0.72, adj=0.125, (0 split)
##
## Node number 1789: 54 observations
##   predicted class=High  expected loss=0.1481481  P(node) =0.00705237
##     class counts:     8    46
##    probabilities: 0.148 0.852
##
## Node number 1810: 15 observations
##   predicted class=Low   expected loss=0.2666667  P(node) =0.001958992
##     class counts:    11     4
##    probabilities: 0.733 0.267
##
## Node number 1811: 16 observations
##   predicted class=High  expected loss=0.375  P(node) =0.002089591
##     class counts:     6    10
##    probabilities: 0.375 0.625
##
## Node number 1852: 8 observations
##   predicted class=Low   expected loss=0.375  P(node) =0.001044796
##     class counts:     5     3
##    probabilities: 0.625 0.375
##
## Node number 1853: 21 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.002742588
##     class counts:     3    18
##    probabilities: 0.143 0.857
##
## Node number 1904: 7 observations
##   predicted class=Low   expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     5     2
##    probabilities: 0.714 0.286
##
## Node number 1905: 17 observations
##   predicted class=High  expected loss=0.4117647  P(node) =0.002220191
```

```
##     class counts:     7    10
##    probabilities: 0.412 0.588
##
## Node number 2010: 88 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.1704545  P(node) =0.01149275
##     class counts:    15    73
##    probabilities: 0.170 0.830
##   left son=4020 (28 obs) right son=4021 (60 obs)
##   Primary splits:
##       TEACHSUP < 0.27175  to the left,  improve=1.8720780, (0 missing)
##       ESCS     < 1.02725  to the right, improve=1.1889280, (0 missing)
##       PVSCIE   < 477.542  to the right, improve=1.1495220, (0 missing)
##       BELONG   < 0.5772   to the right, improve=0.8074163, (0 missing)
##       MOTIVAT  < 0.46895  to the left,  improve=0.6456520, (0 missing)
##   Surrogate splits:
##       MOTIVAT < -0.1881  to the left,  agree=0.727, adj=0.143, (0 split)
##       ESCS    < 0.9902   to the right, agree=0.693, adj=0.036, (0 split)
##
## Node number 2011: 98 observations
##   predicted class=High  expected loss=0.04081633  P(node) =0.01279875
##     class counts:     4    94
##    probabilities: 0.041 0.959
##
## Node number 2182: 16 observations
##   predicted class=Low   expected loss=0  P(node) =0.002089591
##     class counts:    16     0
##    probabilities: 1.000 0.000
##
## Node number 2183: 39 observations,    complexity param=5.910515e-05
##   predicted class=Low   expected loss=0.2820513  P(node) =0.005093379
##     class counts:    28    11
##    probabilities: 0.718 0.282
##   left son=4366 (30 obs) right son=4367 (9 obs)
##   Primary splits:
##       EMOSUPS < 0.1011   to the left,  improve=1.7504270, (0 missing)
##       ANXTEST < 0.1383   to the right, improve=1.6615380, (0 missing)
##       BELONG  < -0.5859  to the left,  improve=1.6467240, (0 missing)
##       IMMIG   splits as  RLL,          improve=0.8914235, (0 missing)
##       MOTIVAT < -0.17035 to the left,  improve=0.6837607, (0 missing)
##   Surrogate splits:
##       BELONG < -1.13215 to the right, agree=0.795, adj=0.111, (0 split)
##       PVSCIE < 489.302  to the right, agree=0.795, adj=0.111, (0 split)
##
## Node number 2248: 101 observations
##   predicted class=Low   expected loss=0.06930693  P(node) =0.01319054
##     class counts:    94     7
##    probabilities: 0.931 0.069
##
## Node number 2249: 78 observations,    complexity param=0.000413736
##   predicted class=Low   expected loss=0.1923077  P(node) =0.01018676
##     class counts:    63    15
##    probabilities: 0.808 0.192
##   left son=4498 (71 obs) right son=4499 (7 obs)
##   Primary splits:
```

```
##       TEACHSUP < 0.25505  to the right, improve=6.7981740, (0 missing)
##       EMOSUPS  < 0.1011   to the left,  improve=1.5581550, (0 missing)
##       MOTIVAT  < -0.25455 to the left,  improve=1.5391030, (0 missing)
##       ANXTEST  < -0.0405  to the right, improve=1.1218010, (0 missing)
##       ESCS     < -0.17405 to the right, improve=0.6719457, (0 missing)
##
## Node number 2250: 26 observations
##   predicted class=Low   expected loss=0.1153846  P(node) =0.003395586
##     class counts:    23     3
##    probabilities: 0.885 0.115
##
## Node number 2251: 24 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.375  P(node) =0.003134387
##     class counts:    15     9
##    probabilities: 0.625 0.375
##   left son=4502 (9 obs) right son=4503 (15 obs)
##   Primary splits:
##       BELONG  < -0.6538  to the right, improve=2.0055560, (0 missing)
##       EMOSUPS < -0.65765 to the right, improve=1.7357140, (0 missing)
##       PVSCIE  < 413.781  to the right, improve=1.5157340, (0 missing)
##       ESCS    < 0.19425  to the right, improve=1.0651260, (0 missing)
##       MOTIVAT < -0.1201  to the right, improve=0.4248252, (0 missing)
##   Surrogate splits:
##       ESCS     < 0.26225  to the right, agree=0.792, adj=0.444, (0 split)
##       PVSCIE   < 440.3115 to the right, agree=0.750, adj=0.333, (0 split)
##       TEACHSUP < -0.8804  to the right, agree=0.708, adj=0.222, (0 split)
##       IMMIG    splits as  RLR,          agree=0.667, adj=0.111, (0 split)
##       MOTIVAT  < -0.1201  to the right, agree=0.667, adj=0.111, (0 split)
##
## Node number 2424: 16 observations
##   predicted class=Low   expected loss=0.1875  P(node) =0.002089591
##     class counts:    13     3
##    probabilities: 0.812 0.187
##
## Node number 2425: 7 observations
##   predicted class=High  expected loss=0.2857143  P(node) =0.0009141962
##     class counts:     2     5
##    probabilities: 0.286 0.714
##
## Node number 2438: 11 observations
##   predicted class=Low   expected loss=0.1818182  P(node) =0.001436594
##     class counts:     9     2
##    probabilities: 0.818 0.182
##
## Node number 2439: 21 observations,    complexity param=0.0006206041
##   predicted class=High  expected loss=0.4285714  P(node) =0.002742588
##     class counts:     9    12
##    probabilities: 0.429 0.571
##   left son=4878 (9 obs) right son=4879 (12 obs)
##   Primary splits:
##       ANXTEST  < -0.60555 to the right, improve=1.7857140, (0 missing)
##       BELONG   < 0.15385  to the right, improve=1.7857140, (0 missing)
##       ESCS     < 0.5569   to the left,  improve=1.3412700, (0 missing)
##       PVSCIE   < 526.3265 to the left,  improve=1.3412700, (0 missing)
```

```
##       TEACHSUP < -0.1313  to the left,  improve=0.8241758, (0 missing)
##   Surrogate splits:
##       ESCS     < 0.5569   to the left,  agree=0.857, adj=0.667, (0 split)
##       TEACHSUP < -0.25645 to the left,  agree=0.762, adj=0.444, (0 split)
##       EMOSUPS  < -0.5334  to the right, agree=0.714, adj=0.333, (0 split)
##       PVSCIE   < 522.114  to the left,  agree=0.714, adj=0.333, (0 split)
##       MOTIVAT  < 0.2061   to the left,  agree=0.667, adj=0.222, (0 split)
##
## Node number 2446: 11 observations
##   predicted class=Low   expected loss=0.3636364  P(node) =0.001436594
##     class counts:     7     4
##    probabilities: 0.636 0.364
##
## Node number 2447: 15 observations
##   predicted class=High  expected loss=0.1333333  P(node) =0.001958992
##     class counts:     2    13
##    probabilities: 0.133 0.867
##
## Node number 2474: 10 observations
##   predicted class=Low   expected loss=0.2  P(node) =0.001305995
##     class counts:     8     2
##    probabilities: 0.800 0.200
##
## Node number 2475: 14 observations
##   predicted class=High  expected loss=0.3571429  P(node) =0.001828392
##     class counts:     5     9
##    probabilities: 0.357 0.643
##
## Node number 2476: 15 observations
##   predicted class=Low   expected loss=0.2666667  P(node) =0.001958992
##     class counts:    11     4
##    probabilities: 0.733 0.267
##
## Node number 2477: 10 observations
##   predicted class=High  expected loss=0.3  P(node) =0.001305995
##     class counts:     3     7
##    probabilities: 0.300 0.700
##
## Node number 2554: 33 observations,    complexity param=0.0008274721
##   predicted class=High  expected loss=0.4242424  P(node) =0.004309782
##     class counts:    14    19
##    probabilities: 0.424 0.576
##   left son=5108 (22 obs) right son=5109 (11 obs)
##   Primary splits:
##       PVSCIE    < 438.455  to the left,  improve=3.6666670, (0 missing)
##       TEACHSUP  < 0.24605  to the left,  improve=2.5035650, (0 missing)
##       ST004D01T splits as  RL,           improve=1.5673660, (0 missing)
##       ESCS      < -0.83035 to the right, improve=1.4429510, (0 missing)
##       MOTIVAT   < -0.13935 to the right, improve=0.5827506, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.3011   to the left,  agree=0.697, adj=0.091, (0 split)
##       ANXTEST < 0.06995  to the left,  agree=0.697, adj=0.091, (0 split)
##
## Node number 2555: 9 observations
```

```
##   predicted class=High  expected loss=0  P(node) =0.001175395
##     class counts:     0     9
##    probabilities: 0.000 1.000
##
## Node number 2766: 39 observations,    complexity param=0.00103434
##   predicted class=Low   expected loss=0.4871795  P(node) =0.005093379
##     class counts:    20    19
##    probabilities: 0.513 0.487
##   left son=5532 (28 obs) right son=5533 (11 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=1.7664000, (0 missing)
##       PVSCIE    < 484.299  to the right, improve=1.5705130, (0 missing)
##       ANXTEST   < 1.5641   to the left,  improve=1.5406550, (0 missing)
##       MOTIVAT   < 1.0579   to the left,  improve=1.0861100, (0 missing)
##       ESCS      < -0.0683  to the left,  improve=0.3240216, (0 missing)
##   Surrogate splits:
##       IMMIG  splits as  LRL,          agree=0.769, adj=0.182, (0 split)
##       ESCS   < 0.6336   to the left,  agree=0.769, adj=0.182, (0 split)
##       BELONG < 0.1056   to the left,  agree=0.769, adj=0.182, (0 split)
##
## Node number 2767: 43 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.3488372  P(node) =0.005615776
##     class counts:    15    28
##    probabilities: 0.349 0.651
##   left son=5534 (8 obs) right son=5535 (35 obs)
##   Primary splits:
##       TEACHSUP < 1.1842   to the left,  improve=3.1634550, (0 missing)
##       ESCS     < 0.79375  to the right, improve=0.9486768, (0 missing)
##       PVSCIE   < 464.566  to the left,  improve=0.9486768, (0 missing)
##       ANXTEST  < 0.52575  to the left,  improve=0.5194991, (0 missing)
##       BELONG   < -0.13025 to the left,  improve=0.3252063, (0 missing)
##
## Node number 2970: 46 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.4347826  P(node) =0.006007575
##     class counts:    20    26
##    probabilities: 0.435 0.565
##   left son=5940 (9 obs) right son=5941 (37 obs)
##   Primary splits:
##       PVSCIE  < 474.14   to the left,  improve=2.6327200, (0 missing)
##       BELONG  < -0.14635 to the left,  improve=2.4736310, (0 missing)
##       ESCS    < -0.3372  to the left,  improve=1.2032900, (0 missing)
##       MOTIVAT < 0.2633   to the right, improve=0.7953623, (0 missing)
##       ANXTEST < -1.16855 to the right, improve=0.6613272, (0 missing)
##   Surrogate splits:
##       ESCS    < -0.5512  to the left,  agree=0.826, adj=0.111, (0 split)
##       ANXTEST < -0.2209  to the right, agree=0.826, adj=0.111, (0 split)
##
## Node number 2971: 20 observations
##   predicted class=High  expected loss=0.15  P(node) =0.002611989
##     class counts:     3    17
##    probabilities: 0.150 0.850
##
## Node number 3572: 23 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.4782609  P(node) =0.003003787
```

```
##     class counts:    12    11
##    probabilities: 0.522 0.478
##   left son=7144 (10 obs) right son=7145 (13 obs)
##   Primary splits:
##       TEACHSUP < 0.6972   to the left,  improve=2.7397990, (0 missing)
##       ANXTEST  < -0.4712  to the right, improve=1.1244150, (0 missing)
##       PVSCIE   < 515.0835 to the left,  improve=1.0496890, (0 missing)
##       ESCS     < 0.5318   to the left,  improve=0.5282609, (0 missing)
##       EMOSUPS  < -0.9147  to the right, improve=0.5282609, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.7967   to the left,  agree=0.739, adj=0.4, (0 split)
##       ANXTEST < -1.94195 to the left,  agree=0.652, adj=0.2, (0 split)
##       EMOSUPS < -0.88765 to the right, agree=0.609, adj=0.1, (0 split)
##       BELONG  < 1.04315  to the left,  agree=0.609, adj=0.1, (0 split)
##       PVSCIE  < 537.517  to the right, agree=0.609, adj=0.1, (0 split)
##
## Node number 3573: 10 observations
##   predicted class=High  expected loss=0.2  P(node) =0.001305995
##     class counts:     2     8
##    probabilities: 0.200 0.800
##
## Node number 3576: 17 observations
##   predicted class=Low   expected loss=0.4705882  P(node) =0.002220191
##     class counts:     9     8
##    probabilities: 0.529 0.471
##
## Node number 3577: 8 observations
##   predicted class=High  expected loss=0  P(node) =0.001044796
##     class counts:     0     8
##    probabilities: 0.000 1.000
##
## Node number 4020: 28 observations,    complexity param=0.000137912
##   predicted class=High  expected loss=0.3214286  P(node) =0.003656785
##     class counts:     9    19
##    probabilities: 0.321 0.679
##   left son=8040 (14 obs) right son=8041 (14 obs)
##   Primary splits:
##       TEACHSUP < -0.33765 to the right, improve=3.5000000, (0 missing)
##       ANXTEST  < -0.1874  to the left,  improve=0.9527473, (0 missing)
##       PVSCIE   < 485.806  to the right, improve=0.9527473, (0 missing)
##       BELONG   < 0.6943   to the right, improve=0.6428571, (0 missing)
##       MOTIVAT  < 0.57335  to the left,  improve=0.5952381, (0 missing)
##   Surrogate splits:
##       PVSCIE  < 478.7755 to the right, agree=0.714, adj=0.429, (0 split)
##       MOTIVAT < 0.57335  to the left,  agree=0.679, adj=0.357, (0 split)
##       ESCS    < 0.5492   to the left,  agree=0.643, adj=0.286, (0 split)
##       ANXTEST < -0.20965 to the left,  agree=0.571, adj=0.143, (0 split)
##       BELONG  < 0.6943   to the right, agree=0.571, adj=0.143, (0 split)
##
## Node number 4021: 60 observations
##   predicted class=High  expected loss=0.1  P(node) =0.007835967
##     class counts:     6    54
##    probabilities: 0.100 0.900
##
```

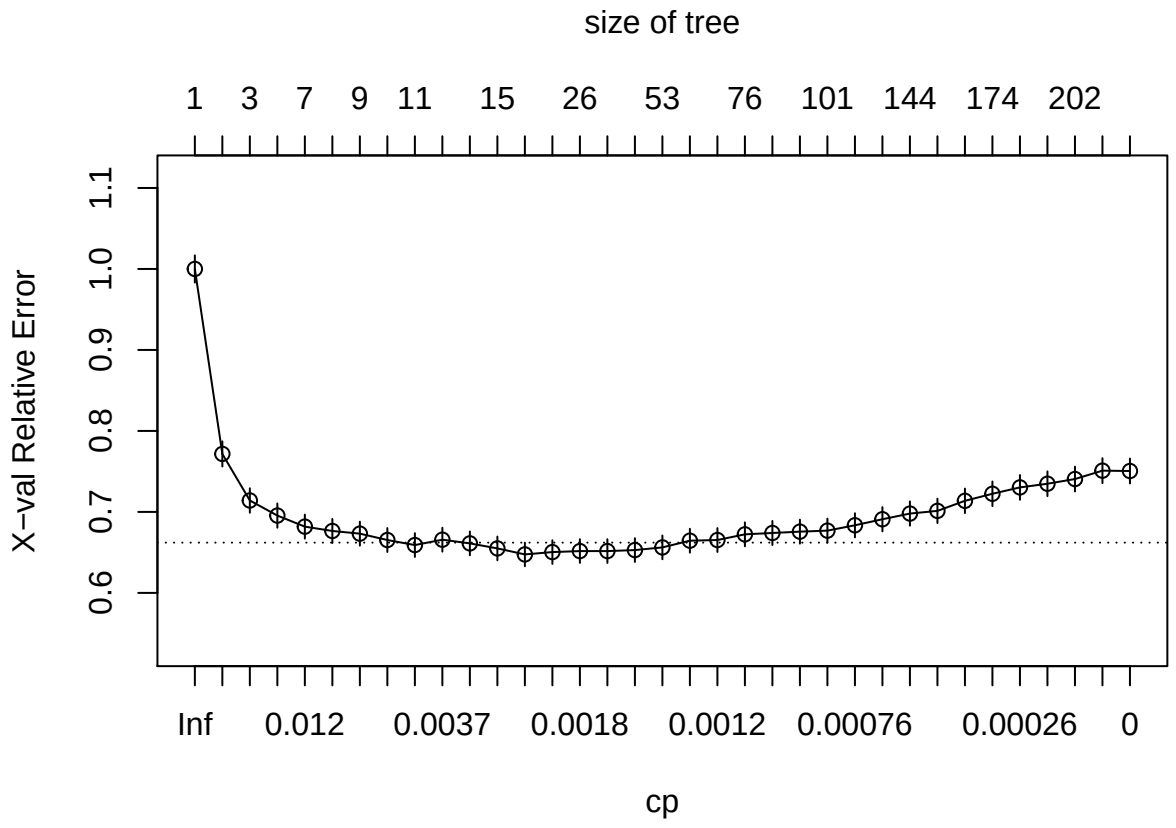
```
## Node number 4366: 30 observations
##   predicted class=Low   expected loss=0.2  P(node) =0.003917984
##     class counts:    24     6
##    probabilities: 0.800 0.200
##
## Node number 4367: 9 observations
##   predicted class=High  expected loss=0.4444444  P(node) =0.001175395
##     class counts:     4     5
##    probabilities: 0.444 0.556
##
## Node number 4498: 71 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.1267606  P(node) =0.009272561
##     class counts:    62     9
##    probabilities: 0.873 0.127
##   left son=8996 (29 obs) right son=8997 (42 obs)
##   Primary splits:
##       MOTIVAT  < -0.19645 to the left,  improve=1.5754530, (0 missing)
##       TEACHSUP < 0.7161   to the left,  improve=1.2400490, (0 missing)
##       PVSCIE   < 371.579  to the right, improve=0.7392622, (0 missing)
##       EMOSUPS  < 0.13645  to the left,  improve=0.5546735, (0 missing)
##       BELONG   < -0.86245 to the right, improve=0.4298483, (0 missing)
##   Surrogate splits:
##       ESCS     < -0.4856  to the left,  agree=0.662, adj=0.172, (0 split)
##       ANXTEST  < -0.52085 to the left,  agree=0.620, adj=0.069, (0 split)
##       PVSCIE   < 477.313  to the right, agree=0.620, adj=0.069, (0 split)
##       EMOSUPS  < 0.40455  to the right, agree=0.606, adj=0.034, (0 split)
##       TEACHSUP < 0.37385  to the left,  agree=0.606, adj=0.034, (0 split)
##
## Node number 4499: 7 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     1     6
##    probabilities: 0.143 0.857
##
## Node number 4502: 9 observations
##   predicted class=Low   expected loss=0.1111111  P(node) =0.001175395
##     class counts:     8     1
##    probabilities: 0.889 0.111
##
## Node number 4503: 15 observations
##   predicted class=High  expected loss=0.4666667  P(node) =0.001958992
##     class counts:     7     8
##    probabilities: 0.467 0.533
##
## Node number 4878: 9 observations
##   predicted class=Low   expected loss=0.3333333  P(node) =0.001175395
##     class counts:     6     3
##    probabilities: 0.667 0.333
##
## Node number 4879: 12 observations
##   predicted class=High  expected loss=0.25  P(node) =0.001567193
##     class counts:     3     9
##    probabilities: 0.250 0.750
##
## Node number 5108: 22 observations,    complexity param=0.0008274721
```

```
##   predicted class=Low   expected loss=0.4090909  P(node) =0.002873188
##     class counts:    13     9
##    probabilities: 0.591 0.409
##   left son=10216 (8 obs) right son=10217 (14 obs)
##   Primary splits:
##       ANXTEST   < 0.01525  to the right, improve=2.029221, (0 missing)
##       TEACHSUP  < 0.71355  to the left,  improve=1.912554, (0 missing)
##       ST004D01T splits as  RL,           improve=1.603030, (0 missing)
##       ESCS      < -0.51415 to the right, improve=1.172078, (0 missing)
##       BELONG    < -0.28455 to the left,  improve=1.063714, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.727, adj=0.250, (0 split)
##       EMOSUPS   < 0.0257   to the right, agree=0.727, adj=0.250, (0 split)
##       ESCS      < -0.9788  to the left,  agree=0.682, adj=0.125, (0 split)
##       MOTIVAT   < 0.18225  to the right, agree=0.682, adj=0.125, (0 split)
##       BELONG    < -0.28455 to the left,  agree=0.682, adj=0.125, (0 split)
##
## Node number 5109: 11 observations
##   predicted class=High  expected loss=0.09090909  P(node) =0.001436594
##     class counts:     1    10
##    probabilities: 0.091 0.909
##
## Node number 5532: 28 observations,    complexity param=0.0008274721
##   predicted class=Low   expected loss=0.3928571  P(node) =0.003656785
##     class counts:    17    11
##    probabilities: 0.607 0.393
##   left son=11064 (16 obs) right son=11065 (12 obs)
##   Primary splits:
##       PVSCIE  < 479.2705 to the right, improve=1.5238100, (0 missing)
##       ESCS    < -0.00955 to the left,  improve=1.0289380, (0 missing)
##       ANXTEST < 1.5641   to the left,  improve=0.8437739, (0 missing)
##       MOTIVAT < 1.0579   to the left,  improve=0.6428571, (0 missing)
##       BELONG  < -0.3196  to the right, improve=0.4821429, (0 missing)
##   Surrogate splits:
##       ESCS     < 0.0873   to the right, agree=0.714, adj=0.333, (0 split)
##       ANXTEST  < 1.3838   to the left,  agree=0.714, adj=0.333, (0 split)
##       MOTIVAT  < 0.2656   to the right, agree=0.643, adj=0.167, (0 split)
##       BELONG   < -0.14395 to the left,  agree=0.643, adj=0.167, (0 split)
##       TEACHSUP < 0.8673   to the right, agree=0.607, adj=0.083, (0 split)
##
## Node number 5533: 11 observations
##   predicted class=High  expected loss=0.2727273  P(node) =0.001436594
##     class counts:     3     8
##    probabilities: 0.273 0.727
##
## Node number 5534: 8 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.001044796
##     class counts:     6     2
##    probabilities: 0.750 0.250
##
## Node number 5535: 35 observations
##   predicted class=High  expected loss=0.2571429  P(node) =0.004570981
##     class counts:     9    26
##    probabilities: 0.257 0.743
```

```
##
## Node number 5940: 9 observations
##   predicted class=Low   expected loss=0.2222222  P(node) =0.001175395
##     class counts:     7     2
##    probabilities: 0.778 0.222
##
## Node number 5941: 37 observations,    complexity param=0.00103434
##   predicted class=High  expected loss=0.3513514  P(node) =0.00483218
##     class counts:    13    24
##    probabilities: 0.351 0.649
##   left son=11882 (9 obs) right son=11883 (28 obs)
##   Primary splits:
##       BELONG  < -0.14635 to the left,  improve=4.3251820, (0 missing)
##       MOTIVAT < 0.4435   to the right, improve=1.1689580, (0 missing)
##       ANXTEST < -0.39875 to the right, improve=0.9952996, (0 missing)
##       PVSCIE  < 594.5515 to the left,  improve=0.5828136, (0 missing)
##       ESCS    < -0.07785 to the left,  improve=0.4510718, (0 missing)
##
## Node number 7144: 10 observations
##   predicted class=Low   expected loss=0.2  P(node) =0.001305995
##     class counts:     8     2
##    probabilities: 0.800 0.200
##
## Node number 7145: 13 observations
##   predicted class=High  expected loss=0.3076923  P(node) =0.001697793
##     class counts:     4     9
##    probabilities: 0.308 0.692
##
## Node number 8040: 14 observations
##   predicted class=Low   expected loss=0.4285714  P(node) =0.001828392
##     class counts:     8     6
##    probabilities: 0.571 0.429
##
## Node number 8041: 14 observations
##   predicted class=High  expected loss=0.07142857  P(node) =0.001828392
##     class counts:     1    13
##    probabilities: 0.071 0.929
##
## Node number 8996: 29 observations
##   predicted class=Low   expected loss=0  P(node) =0.003787384
##     class counts:    29     0
##    probabilities: 1.000 0.000
##
## Node number 8997: 42 observations,    complexity param=0.000206868
##   predicted class=Low   expected loss=0.2142857  P(node) =0.005485177
##     class counts:    33     9
##    probabilities: 0.786 0.214
##   left son=17994 (29 obs) right son=17995 (13 obs)
##   Primary splits:
##       MOTIVAT  < -0.1585  to the right, improve=3.9571810, (0 missing)
##       TEACHSUP < 0.7161   to the left,  improve=2.3736260, (0 missing)
##       EMOSUPS  < 0.13645  to the left,  improve=0.7714286, (0 missing)
##       ANXTEST  < -0.0405  to the right, improve=0.7714286, (0 missing)
##       ESCS     < -0.74715 to the right, improve=0.6648513, (0 missing)
```

```
##   Surrogate splits:
##       ANXTEST < -0.3199  to the right, agree=0.738, adj=0.154, (0 split)
##       ESCS    < 1.2447   to the left,  agree=0.714, adj=0.077, (0 split)
##
## Node number 10216: 8 observations
##   predicted class=Low   expected loss=0.125  P(node) =0.001044796
##     class counts:     7     1
##    probabilities: 0.875 0.125
##
## Node number 10217: 14 observations
##   predicted class=High  expected loss=0.4285714  P(node) =0.001828392
##     class counts:     6     8
##    probabilities: 0.429 0.571
##
## Node number 11064: 16 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.002089591
##     class counts:    12     4
##    probabilities: 0.750 0.250
##
## Node number 11065: 12 observations
##   predicted class=High  expected loss=0.4166667  P(node) =0.001567193
##     class counts:     5     7
##    probabilities: 0.417 0.583
##
## Node number 11882: 9 observations
##   predicted class=Low   expected loss=0.2222222  P(node) =0.001175395
##     class counts:     7     2
##    probabilities: 0.778 0.222
##
## Node number 11883: 28 observations
##   predicted class=High  expected loss=0.2142857  P(node) =0.003656785
##     class counts:     6    22
##    probabilities: 0.214 0.786
##
## Node number 17994: 29 observations
##   predicted class=Low   expected loss=0.06896552  P(node) =0.003787384
##     class counts:    27     2
##    probabilities: 0.931 0.069
##
## Node number 17995: 13 observations
##   predicted class=High  expected loss=0.4615385  P(node) =0.001697793
##     class counts:     6     7
##    probabilities: 0.462 0.538
```

```
# show the cp values and find the small cross-validated error
plotcp(model1)
```




```
model1$cptable[which.min(model1$cptable[,"xerror"]),"CP"]
```

```
## [1] 0.001930768
```

```
prune1 <- prune(model1, cp = 0.001930768)
Model1 <- summary(prune1)
```

```
## Call:
## rpart(formula = wb ~ ., data = training, na.action = na.omit,
##     method = "class", control = rpart.control(cp = 0))
##   n=7657 (1386 observations deleted due to missingness)
##
##             CP nsplit rel error    xerror       xstd
## 1  0.245759206      0 1.0000000 1.0000000 0.01682666
## 2  0.056268101      1 0.7542408 0.7716177 0.01553988
## 3  0.014480761      2 0.6979727 0.7141084 0.01512789
## 4  0.013515377      3 0.6834919 0.6954903 0.01498591
## 5  0.010757137      6 0.6429458 0.6818370 0.01487900
## 6  0.008688457      7 0.6321887 0.6764584 0.01483622
## 7  0.006206041      8 0.6235002 0.6731485 0.01480971
## 8  0.004964832      9 0.6172942 0.6652875 0.01474616
## 9  0.004137360     10 0.6123293 0.6590815 0.01469540
## 10 0.003309888     11 0.6081920 0.6657013 0.01474952
## 11 0.002689284     12 0.6048821 0.6611502 0.01471238
## 12 0.002151427     14 0.5995035 0.6549441 0.01466128
## 13 0.001930768     20 0.5846090 0.6474969 0.01459927
## 14 0.001930768     23 0.5788167 0.6503930 0.01462348
```

```
##
## Variable importance
##    BELONG   EMOSUPS   ANXTEST ST004D01T    PVSCIE   MOTIVAT  TEACHSUP      ESCS
##        56        24        10         3         3         2         1         1
##
## Node number 1: 7657 observations,    complexity param=0.2457592
##   predicted class=Low   expected loss=0.3156589  P(node) =1
##     class counts:  5240  2417
##    probabilities: 0.684 0.316
##   left son=2 (5595 obs) right son=3 (2062 obs)
##   Primary splits:
##       BELONG    < 0.26355  to the left,  improve=608.5835, (0 missing)
##       EMOSUPS   < 0.982    to the left,  improve=515.3075, (0 missing)
##       ANXTEST   < -0.10785 to the right, improve=314.3389, (0 missing)
##       TEACHSUP  < 0.65565  to the left,  improve=169.4996, (0 missing)
##       ST004D01T splits as  RL,           improve=143.3114, (0 missing)
##   Surrogate splits:
##       ANXTEST < -1.17875 to the right, agree=0.734, adj=0.014, (0 split)
##       ESCS    < 1.99845  to the left,  agree=0.731, adj=0.000, (0 split)
##       PVSCIE  < 229.2385 to the right, agree=0.731, adj=0.000, (0 split)
##
## Node number 2: 5595 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.1946381  P(node) =0.7307039
##     class counts:  4506  1089
##    probabilities: 0.805 0.195
##   left son=4 (4155 obs) right son=5 (1440 obs)
##   Primary splits:
##       EMOSUPS   < 0.982    to the left,  improve=144.24960, (0 missing)
##       BELONG    < -0.38615 to the left,  improve=116.10230, (0 missing)
##       ANXTEST   < 0.261    to the right, improve= 90.61965, (0 missing)
##       ST004D01T splits as  RL,           improve= 52.09384, (0 missing)
##       TEACHSUP  < 1.2768   to the left,  improve= 51.65985, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.5148   to the left,  agree=0.746, adj=0.013, (0 split)
##       PVSCIE < 256.264  to the right, agree=0.743, adj=0.002, (0 split)
##
## Node number 3: 2062 observations,    complexity param=0.0562681
##   predicted class=High  expected loss=0.3559651  P(node) =0.2692961
##     class counts:   734  1328
##    probabilities: 0.356 0.644
##   left son=6 (772 obs) right son=7 (1290 obs)
##   Primary splits:
##       EMOSUPS   < 0.516    to the left,  improve=132.97290, (0 missing)
##       ANXTEST   < 0.10355  to the right, improve= 80.10580, (0 missing)
##       BELONG    < 1.246    to the left,  improve= 43.53596, (0 missing)
##       TEACHSUP  < 0.4875   to the left,  improve= 39.01250, (0 missing)
##       ST004D01T splits as  RL,           improve= 30.28236, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.16375 to the left,  agree=0.648, adj=0.060, (0 split)
##       BELONG   < 0.36235  to the left,  agree=0.642, adj=0.044, (0 split)
##       ANXTEST  < 1.8406   to the right, agree=0.633, adj=0.021, (0 split)
##       ESCS     < -0.93555 to the left,  agree=0.631, adj=0.014, (0 split)
##       TEACHSUP < -0.8684  to the left,  agree=0.631, adj=0.014, (0 split)
##
```

```
## Node number 4: 4155 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.1277978  P(node) =0.5426407
##     class counts:  3624   531
##    probabilities: 0.872 0.128
##   left son=8 (2764 obs) right son=9 (1391 obs)
##   Primary splits:
##       BELONG    < -0.4241  to the left,  improve=49.43451, (0 missing)
##       ANXTEST   < 0.2076   to the right, improve=39.68815, (0 missing)
##       ST004D01T splits as  RL,           improve=30.43684, (0 missing)
##       PVSCIE    < 477.3155 to the right, improve=17.55128, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve=17.18877, (0 missing)
##   Surrogate splits:
##       PVSCIE < 748.6005 to the left,  agree=0.666, adj=0.004, (0 split)
##       ESCS   < 2.0571   to the left,  agree=0.666, adj=0.001, (0 split)
##
## Node number 5: 1440 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.3875  P(node) =0.1880632
##     class counts:   882   558
##    probabilities: 0.613 0.387
##   left son=10 (772 obs) right son=11 (668 obs)
##   Primary splits:
##       ANXTEST   < 0.3134   to the right, improve=54.90149, (0 missing)
##       BELONG    < -0.3794  to the left,  improve=45.96089, (0 missing)
##       ST004D01T splits as  RL,           improve=22.59090, (0 missing)
##       MOTIVAT   < 1.45175  to the left,  improve=17.11675, (0 missing)
##       TEACHSUP  < -0.1181  to the left,  improve=16.41509, (0 missing)
##   Surrogate splits:
##       BELONG    < -0.3651  to the left,  agree=0.614, adj=0.168, (0 split)
##       ST004D01T splits as  RL,           agree=0.605, adj=0.148, (0 split)
##       ESCS      < 1.0773   to the left,  agree=0.569, adj=0.072, (0 split)
##       PVSCIE    < 582.1975 to the left,  agree=0.559, adj=0.049, (0 split)
##       MOTIVAT   < 1.45175  to the left,  agree=0.541, adj=0.010, (0 split)
##
## Node number 6: 772 observations,    complexity param=0.01448076
##   predicted class=Low   expected loss=0.4119171  P(node) =0.1008228
##     class counts:   454   318
##    probabilities: 0.588 0.412
##   left son=12 (333 obs) right son=13 (439 obs)
##   Primary splits:
##       ANXTEST   < 0.1226   to the right, improve=33.321350, (0 missing)
##       ST004D01T splits as  RL,           improve=30.912980, (0 missing)
##       TEACHSUP  < 0.41835  to the left,  improve=13.983860, (0 missing)
##       BELONG    < 0.63645  to the left,  improve=10.561060, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve= 5.925377, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.631, adj=0.144, (0 split)
##       BELONG    < 0.38695  to the left,  agree=0.596, adj=0.063, (0 split)
##       EMOSUPS   < -1.0563  to the left,  agree=0.582, adj=0.030, (0 split)
##       TEACHSUP  < -0.4066  to the left,  agree=0.582, adj=0.030, (0 split)
##       IMMIG     splits as  RLL,          agree=0.579, adj=0.024, (0 split)
##
## Node number 7: 1290 observations
##   predicted class=High  expected loss=0.2170543  P(node) =0.1684733
##     class counts:   280  1010
```

```
##    probabilities: 0.217 0.783
##
## Node number 8: 2764 observations
##   predicted class=Low   expected loss=0.07308249  P(node) =0.3609769
##     class counts:  2562   202
##    probabilities: 0.927 0.073
##
## Node number 9: 1391 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.2365205  P(node) =0.1816638
##     class counts:  1062   329
##    probabilities: 0.763 0.237
##   left son=18 (730 obs) right son=19 (661 obs)
##   Primary splits:
##       ANXTEST   < 0.2125   to the right, improve=27.976880, (0 missing)
##       ST004D01T splits as  RL,           improve=18.152090, (0 missing)
##       PVSCIE    < 453.8795 to the right, improve=13.709130, (0 missing)
##       TEACHSUP  < 0.9171   to the left,  improve=11.140870, (0 missing)
##       EMOSUPS   < 0.09765  to the left,  improve= 9.277124, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.648, adj=0.260, (0 split)
##       MOTIVAT   < -0.0209  to the right, agree=0.582, adj=0.120, (0 split)
##       PVSCIE    < 589.892  to the left,  agree=0.567, adj=0.089, (0 split)
##       ESCS      < 0.8433   to the left,  agree=0.556, adj=0.065, (0 split)
##       TEACHSUP  < 1.1011   to the left,  agree=0.548, adj=0.048, (0 split)
##
## Node number 10: 772 observations
##   predicted class=Low   expected loss=0.2590674  P(node) =0.1008228
##     class counts:   572   200
##    probabilities: 0.741 0.259
##
## Node number 11: 668 observations,    complexity param=0.01351538
##   predicted class=High  expected loss=0.4640719  P(node) =0.08724043
##     class counts:   310   358
##    probabilities: 0.464 0.536
##   left son=22 (290 obs) right son=23 (378 obs)
##   Primary splits:
##       BELONG    < -0.4137  to the left,  improve=15.289500, (0 missing)
##       MOTIVAT   < 0.89985  to the left,  improve=10.479140, (0 missing)
##       PVSCIE    < 557.631  to the right, improve= 9.846661, (0 missing)
##       ANXTEST   < -0.1607  to the right, improve= 6.090499, (0 missing)
##       ST004D01T splits as  RL,           improve= 5.111681, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 366.743  to the left,  agree=0.587, adj=0.048, (0 split)
##       ESCS     < 1.58355  to the right, agree=0.584, adj=0.041, (0 split)
##       TEACHSUP < -1.70135 to the left,  agree=0.578, adj=0.028, (0 split)
##       MOTIVAT  < -1.04655 to the left,  agree=0.570, adj=0.010, (0 split)
##       ANXTEST  < 0.3019   to the right, agree=0.570, adj=0.010, (0 split)
##
## Node number 12: 333 observations,    complexity param=0.002689284
##   predicted class=Low   expected loss=0.2432432  P(node) =0.04348962
##     class counts:   252    81
##    probabilities: 0.757 0.243
##   left son=24 (184 obs) right son=25 (149 obs)
##   Primary splits:
```

```
##       ST004D01T splits as  RL,           improve=11.498960, (0 missing)
##       ANXTEST   < 0.65545  to the right, improve= 6.818558, (0 missing)
##       TEACHSUP  < -0.0067  to the left,  improve= 5.328972, (0 missing)
##       BELONG    < 1.0972   to the left,  improve= 5.001176, (0 missing)
##       PVSCIE    < 506.995  to the right, improve= 4.303305, (0 missing)
##   Surrogate splits:
##       ANXTEST  < 0.52575  to the right, agree=0.610, adj=0.128, (0 split)
##       MOTIVAT  < 0.06465  to the right, agree=0.583, adj=0.067, (0 split)
##       TEACHSUP < -1.73035 to the right, agree=0.568, adj=0.034, (0 split)
##       PVSCIE   < 391.0965 to the right, agree=0.568, adj=0.034, (0 split)
##       EMOSUPS  < -2.1343  to the right, agree=0.565, adj=0.027, (0 split)
##
## Node number 13: 439 observations,    complexity param=0.01075714
##   predicted class=High  expected loss=0.4601367  P(node) =0.05733316
##     class counts:   202   237
##    probabilities: 0.460 0.540
##   left son=26 (136 obs) right son=27 (303 obs)
##   Primary splits:
##       ST004D01T splits as  RL,           improve=7.230342, (0 missing)
##       TEACHSUP  < 0.37385  to the left,  improve=7.162786, (0 missing)
##       PVSCIE    < 594.952  to the right, improve=5.451322, (0 missing)
##       EMOSUPS   < -2.8315  to the right, improve=4.855819, (0 missing)
##       BELONG    < 0.5086   to the left,  improve=4.686187, (0 missing)
##   Surrogate splits:
##       IMMIG  splits as  RLR,          agree=0.711, adj=0.066, (0 split)
##       ESCS   < -1.8742  to the left,  agree=0.699, adj=0.029, (0 split)
##       PVSCIE < 301.5725 to the left,  agree=0.697, adj=0.022, (0 split)
##
## Node number 18: 730 observations
##   predicted class=Low   expected loss=0.1410959  P(node) =0.0953376
##     class counts:   627   103
##    probabilities: 0.859 0.141
##
## Node number 19: 661 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.3419062  P(node) =0.08632624
##     class counts:   435   226
##    probabilities: 0.658 0.342
##   left son=38 (464 obs) right son=39 (197 obs)
##   Primary splits:
##       PVSCIE    < 453.9385 to the right, improve=10.267430, (0 missing)
##       TEACHSUP  < 0.5593   to the left,  improve= 8.797866, (0 missing)
##       ST004D01T splits as  RL,           improve= 8.484767, (0 missing)
##       EMOSUPS   < 0.0634   to the left,  improve= 7.441914, (0 missing)
##       ANXTEST   < -0.27155 to the right, improve= 6.216102, (0 missing)
##   Surrogate splits:
##       ESCS     < -1.4073  to the right, agree=0.716, adj=0.046, (0 split)
##       MOTIVAT  < -2.6403  to the right, agree=0.708, adj=0.020, (0 split)
##       EMOSUPS  < -1.97105 to the right, agree=0.705, adj=0.010, (0 split)
##       ANXTEST  < 0.2076   to the left,  agree=0.703, adj=0.005, (0 split)
##       TEACHSUP < -2.3976  to the right, agree=0.703, adj=0.005, (0 split)
##
## Node number 22: 290 observations,    complexity param=0.008688457
##   predicted class=Low   expected loss=0.4137931  P(node) =0.03787384
##     class counts:   170   120
```

```
##    probabilities: 0.586 0.414
##   left son=44 (257 obs) right son=45 (33 obs)
##   Primary splits:
##       BELONG  < -2.0625  to the right, improve=12.178870, (0 missing)
##       PVSCIE  < 427.568  to the right, improve= 8.448276, (0 missing)
##       MOTIVAT < 0.89985  to the left,  improve= 6.961084, (0 missing)
##       ESCS    < -0.58545 to the right, improve= 3.832402, (0 missing)
##       ANXTEST < -0.12595 to the right, improve= 3.229779, (0 missing)
##
## Node number 23: 378 observations
##   predicted class=High  expected loss=0.3703704  P(node) =0.04936659
##     class counts:   140   238
##    probabilities: 0.370 0.630
##
## Node number 24: 184 observations
##   predicted class=Low   expected loss=0.125  P(node) =0.0240303
##     class counts:   161    23
##    probabilities: 0.875 0.125
##
## Node number 25: 149 observations,    complexity param=0.002689284
##   predicted class=Low   expected loss=0.3892617  P(node) =0.01945932
##     class counts:    91    58
##    probabilities: 0.611 0.389
##   left son=50 (104 obs) right son=51 (45 obs)
##   Primary splits:
##       BELONG   < 0.83185  to the left,  improve=8.396492, (0 missing)
##       TEACHSUP < 0.15995  to the left,  improve=7.957594, (0 missing)
##       PVSCIE   < 519.5945 to the right, improve=4.636067, (0 missing)
##       MOTIVAT  < 0.09305  to the right, improve=3.699049, (0 missing)
##       IMMIG    splits as  RLR,          improve=2.442961, (0 missing)
##   Surrogate splits:
##       EMOSUPS < -2.6343  to the right, agree=0.725, adj=0.089, (0 split)
##       ESCS    < 1.6205   to the left,  agree=0.711, adj=0.044, (0 split)
##       MOTIVAT < -0.91705 to the right, agree=0.705, adj=0.022, (0 split)
##
## Node number 26: 136 observations,    complexity param=0.00413736
##   predicted class=Low   expected loss=0.4044118  P(node) =0.01776153
##     class counts:    81    55
##    probabilities: 0.596 0.404
##   left son=52 (72 obs) right son=53 (64 obs)
##   Primary splits:
##       TEACHSUP < 0.44975  to the left,  improve=7.295956, (0 missing)
##       EMOSUPS  < 0.40455  to the left,  improve=2.997141, (0 missing)
##       ANXTEST  < -0.2053  to the right, improve=2.104394, (0 missing)
##       BELONG   < 2.0763   to the left,  improve=1.764706, (0 missing)
##       MOTIVAT  < -0.2457  to the left,  improve=1.647082, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.6331   to the left,  agree=0.618, adj=0.188, (0 split)
##       BELONG  < 2.0763   to the left,  agree=0.603, adj=0.156, (0 split)
##       ESCS    < 0.92305  to the left,  agree=0.581, adj=0.109, (0 split)
##       ANXTEST < 0.039    to the left,  agree=0.581, adj=0.109, (0 split)
##       EMOSUPS < -1.9543  to the right, agree=0.581, adj=0.109, (0 split)
##
## Node number 27: 303 observations,    complexity param=0.006206041
```

```
##   predicted class=High  expected loss=0.3993399  P(node) =0.03957163
##     class counts:   121   182
##    probabilities: 0.399 0.601
##   left son=54 (53 obs) right son=55 (250 obs)
##   Primary splits:
##       PVSCIE   < 594.952  to the right, improve=7.534377, (0 missing)
##       TEACHSUP < -1.04835 to the left,  improve=5.809190, (0 missing)
##       EMOSUPS  < -0.3339  to the left,  improve=4.253591, (0 missing)
##       BELONG   < 0.5086   to the left,  improve=4.235357, (0 missing)
##       ANXTEST  < -0.10785 to the right, improve=1.994219, (0 missing)
##   Surrogate splits:
##       ESCS < 1.59565  to the right, agree=0.842, adj=0.094, (0 split)
##
## Node number 38: 464 observations,    complexity param=0.001930768
##   predicted class=Low   expected loss=0.2844828  P(node) =0.06059815
##     class counts:   332   132
##    probabilities: 0.716 0.284
##   left son=76 (335 obs) right son=77 (129 obs)
##   Primary splits:
##       EMOSUPS   < 0.0634   to the left,  improve=8.850734, (0 missing)
##       TEACHSUP  < 0.5593   to the left,  improve=6.966875, (0 missing)
##       ANXTEST   < -0.27155 to the right, improve=4.045749, (0 missing)
##       ST004D01T splits as  RL,           improve=3.351724, (0 missing)
##       BELONG    < -0.33835 to the left,  improve=2.984431, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.5473   to the left,  agree=0.728, adj=0.023, (0 split)
##       PVSCIE < 460.141  to the right, agree=0.724, adj=0.008, (0 split)
##
## Node number 39: 197 observations,    complexity param=0.002151427
##   predicted class=Low   expected loss=0.4771574  P(node) =0.02572809
##     class counts:   103    94
##    probabilities: 0.523 0.477
##   left son=78 (42 obs) right son=79 (155 obs)
##   Primary splits:
##       MOTIVAT   < -0.50925 to the left,  improve=6.101482, (0 missing)
##       EMOSUPS   < -0.9514  to the left,  improve=5.568991, (0 missing)
##       ST004D01T splits as  RL,           improve=4.851070, (0 missing)
##       ANXTEST   < -0.44595 to the right, improve=3.273516, (0 missing)
##       TEACHSUP  < -0.1313  to the left,  improve=3.195725, (0 missing)
##   Surrogate splits:
##       ESCS    < -1.7312  to the left,  agree=0.792, adj=0.024, (0 split)
##       EMOSUPS < -2.38595 to the left,  agree=0.792, adj=0.024, (0 split)
##       BELONG  < 0.2216   to the right, agree=0.792, adj=0.024, (0 split)
##
## Node number 44: 257 observations,    complexity param=0.004964832
##   predicted class=Low   expected loss=0.3618677  P(node) =0.03356406
##     class counts:   164    93
##    probabilities: 0.638 0.362
##   left son=88 (205 obs) right son=89 (52 obs)
##   Primary splits:
##       PVSCIE  < 427.568  to the right, improve=8.379661, (0 missing)
##       BELONG  < -0.7087  to the left,  improve=4.267332, (0 missing)
##       ESCS    < -0.58545 to the right, improve=4.210945, (0 missing)
##       MOTIVAT < 0.96945  to the left,  improve=3.768630, (0 missing)
```

```
##       IMMIG   splits as  LLR,          improve=1.621814, (0 missing)
##   Surrogate splits:
##       ESCS < 2.2695   to the left,  agree=0.802, adj=0.019, (0 split)
##
## Node number 45: 33 observations
##   predicted class=High  expected loss=0.1818182  P(node) =0.004309782
##     class counts:     6    27
##    probabilities: 0.182 0.818
##
## Node number 50: 104 observations
##   predicted class=Low   expected loss=0.2788462  P(node) =0.01358234
##     class counts:    75    29
##    probabilities: 0.721 0.279
##
## Node number 51: 45 observations
##   predicted class=High  expected loss=0.3555556  P(node) =0.005876975
##     class counts:    16    29
##    probabilities: 0.356 0.644
##
## Node number 52: 72 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.009403161
##     class counts:    54    18
##    probabilities: 0.750 0.250
##
## Node number 53: 64 observations
##   predicted class=High  expected loss=0.421875  P(node) =0.008358365
##     class counts:    27    37
##    probabilities: 0.422 0.578
##
## Node number 54: 53 observations
##   predicted class=Low   expected loss=0.3584906  P(node) =0.006921771
##     class counts:    34    19
##    probabilities: 0.642 0.358
##
## Node number 55: 250 observations,    complexity param=0.003309888
##   predicted class=High  expected loss=0.348  P(node) =0.03264986
##     class counts:    87   163
##    probabilities: 0.348 0.652
##   left son=110 (34 obs) right son=111 (216 obs)
##   Primary splits:
##       TEACHSUP < -1.0147  to the left,  improve=5.722510, (0 missing)
##       BELONG   < 0.5086   to the left,  improve=4.308878, (0 missing)
##       EMOSUPS  < -0.3339  to the left,  improve=2.656378, (0 missing)
##       PVSCIE   < 402.2435 to the right, improve=1.923277, (0 missing)
##       ANXTEST  < -0.16655 to the right, improve=1.478265, (0 missing)
##   Surrogate splits:
##       ESCS < -1.9137  to the left,  agree=0.868, adj=0.029, (0 split)
##
## Node number 76: 335 observations,    complexity param=0.001930768
##   predicted class=Low   expected loss=0.2238806  P(node) =0.04375082
##     class counts:   260    75
##    probabilities: 0.776 0.224
##   left son=152 (328 obs) right son=153 (7 obs)
##   Primary splits:
```

```
##       EMOSUPS   < -2.56865 to the right, improve=5.734113, (0 missing)
##       TEACHSUP  < 0.7938   to the left,  improve=4.869431, (0 missing)
##       ANXTEST   < -0.36395 to the right, improve=4.284606, (0 missing)
##       ST004D01T splits as  RL,           improve=4.038711, (0 missing)
##       PVSCIE    < 529.606  to the right, improve=2.371614, (0 missing)
##
## Node number 77: 129 observations,    complexity param=0.001930768
##   predicted class=Low   expected loss=0.4418605  P(node) =0.01684733
##     class counts:    72    57
##    probabilities: 0.558 0.442
##   left son=154 (86 obs) right son=155 (43 obs)
##   Primary splits:
##       PVSCIE   < 595.262  to the left,  improve=3.418605, (0 missing)
##       TEACHSUP < -0.8043  to the left,  improve=2.398464, (0 missing)
##       ESCS     < 0.14745  to the left,  improve=2.187907, (0 missing)
##       MOTIVAT  < 0.28365  to the right, improve=1.398914, (0 missing)
##       EMOSUPS  < 0.38295  to the right, improve=1.344392, (0 missing)
##   Surrogate splits:
##       ESCS < 0.69435  to the left,  agree=0.721, adj=0.163, (0 split)
##
## Node number 78: 42 observations
##   predicted class=Low   expected loss=0.2380952  P(node) =0.005485177
##     class counts:    32    10
##    probabilities: 0.762 0.238
##
## Node number 79: 155 observations,    complexity param=0.002151427
##   predicted class=High  expected loss=0.4580645  P(node) =0.02024291
##     class counts:    71    84
##    probabilities: 0.458 0.542
##   left son=158 (19 obs) right son=159 (136 obs)
##   Primary splits:
##       EMOSUPS   < -0.9558  to the left,  improve=6.387501, (0 missing)
##       MOTIVAT   < 0.61075  to the right, improve=5.637338, (0 missing)
##       ST004D01T splits as  RL,           improve=5.448870, (0 missing)
##       ANXTEST   < -0.4446  to the right, improve=2.431762, (0 missing)
##       TEACHSUP  < 0.2389   to the left,  improve=2.123451, (0 missing)
##
## Node number 88: 205 observations
##   predicted class=Low   expected loss=0.297561  P(node) =0.02677289
##     class counts:   144    61
##    probabilities: 0.702 0.298
##
## Node number 89: 52 observations
##   predicted class=High  expected loss=0.3846154  P(node) =0.006791171
##     class counts:    20    32
##    probabilities: 0.385 0.615
##
## Node number 110: 34 observations
##   predicted class=Low   expected loss=0.3823529  P(node) =0.004440381
##     class counts:    21    13
##    probabilities: 0.618 0.382
##
## Node number 111: 216 observations
##   predicted class=High  expected loss=0.3055556  P(node) =0.02820948
```

```
##     class counts:    66   150
##    probabilities: 0.306 0.694
##
## Node number 152: 328 observations
##   predicted class=Low   expected loss=0.2103659  P(node) =0.04283662
##     class counts:   259    69
##    probabilities: 0.790 0.210
##
## Node number 153: 7 observations
##   predicted class=High  expected loss=0.1428571  P(node) =0.0009141962
##     class counts:     1     6
##    probabilities: 0.143 0.857
##
## Node number 154: 86 observations
##   predicted class=Low   expected loss=0.3604651  P(node) =0.01123155
##     class counts:    55    31
##    probabilities: 0.640 0.360
##
## Node number 155: 43 observations
##   predicted class=High  expected loss=0.3953488  P(node) =0.005615776
##     class counts:    17    26
##    probabilities: 0.395 0.605
##
## Node number 158: 19 observations
##   predicted class=Low   expected loss=0.1578947  P(node) =0.00248139
##     class counts:    16     3
##    probabilities: 0.842 0.158
##
## Node number 159: 136 observations,    complexity param=0.002151427
##   predicted class=High  expected loss=0.4044118  P(node) =0.01776153
##     class counts:    55    81
##    probabilities: 0.404 0.596
##   left son=318 (36 obs) right son=319 (100 obs)
##   Primary splits:
##       MOTIVAT   < 0.70905  to the right, improve=5.383595, (0 missing)
##       ST004D01T splits as  RL,           improve=4.335539, (0 missing)
##       PVSCIE    < 362.0695 to the right, improve=3.216593, (0 missing)
##       ANXTEST   < -0.4446  to the right, improve=3.003491, (0 missing)
##       ESCS      < -0.34555 to the right, improve=2.186894, (0 missing)
##   Surrogate splits:
##       BELONG   < 0.19195  to the right, agree=0.757, adj=0.083, (0 split)
##       TEACHSUP < -1.49795 to the left,  agree=0.757, adj=0.083, (0 split)
##       ESCS     < -1.49195 to the left,  agree=0.750, adj=0.056, (0 split)
##       ANXTEST  < -1.88625 to the left,  agree=0.743, adj=0.028, (0 split)
##
## Node number 318: 36 observations
##   predicted class=Low   expected loss=0.3611111  P(node) =0.00470158
##     class counts:    23    13
##    probabilities: 0.639 0.361
##
## Node number 319: 100 observations
##   predicted class=High  expected loss=0.32  P(node) =0.01305995
##     class counts:    32    68
##    probabilities: 0.320 0.680
```

```r
#variables are used in the tree , choosing cp based on the low xerror
Pred1 <- predict(prune1,training,type="class")
acc1<- confusionMatrix(Pred1,training$wb)
acc1
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  Low High
##       Low  5434 1017
##       High  713 1879
##
##                Accuracy : 0.8087
##                  95% CI : (0.8004, 0.8168)
##     No Information Rate : 0.6798
##     P-Value [Acc > NIR] : < 2.2e-16
##
##                   Kappa : 0.548
##
##  Mcnemar's Test P-Value : 3.221e-13
##
##             Sensitivity : 0.8840
##             Specificity : 0.6488
##          Pos Pred Value : 0.8424
##          Neg Pred Value : 0.7249
##              Prevalence : 0.6798
##          Detection Rate : 0.6009
##    Detection Prevalence : 0.7134
##       Balanced Accuracy : 0.7664
##
##        'Positive' Class : Low
##
```

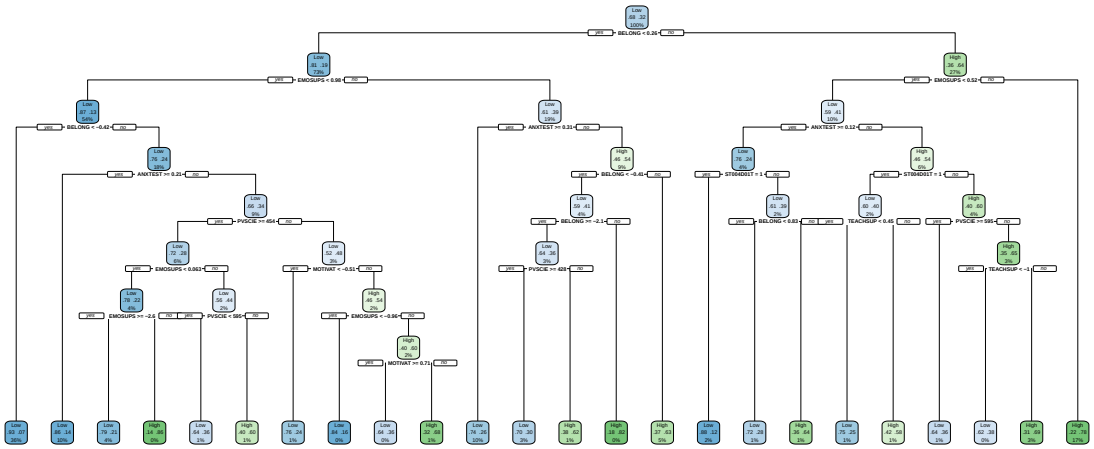
```r
# testing
PredT1 <- predict(prune1,testing,type="class")
accT1 <- confusionMatrix(PredT1,testing$wb)
accT1
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  Low High
##       Low  1282  299
##       High  184  496
##
##                Accuracy : 0.7864
##                  95% CI : (0.7689, 0.8031)
##     No Information Rate : 0.6484
##     P-Value [Acc > NIR] : < 2.2e-16
##
##                   Kappa : 0.5155
##
##  Mcnemar's Test P-Value : 2.135e-07
##
##             Sensitivity : 0.8745
```

```
##             Specificity : 0.6239
##          Pos Pred Value : 0.8109
##          Neg Pred Value : 0.7294
##              Prevalence : 0.6484
##          Detection Rate : 0.5670
##    Detection Prevalence : 0.6992
##       Balanced Accuracy : 0.7492
##
##        'Positive' Class : Low
##
```

Plot and important variables for the tunned model

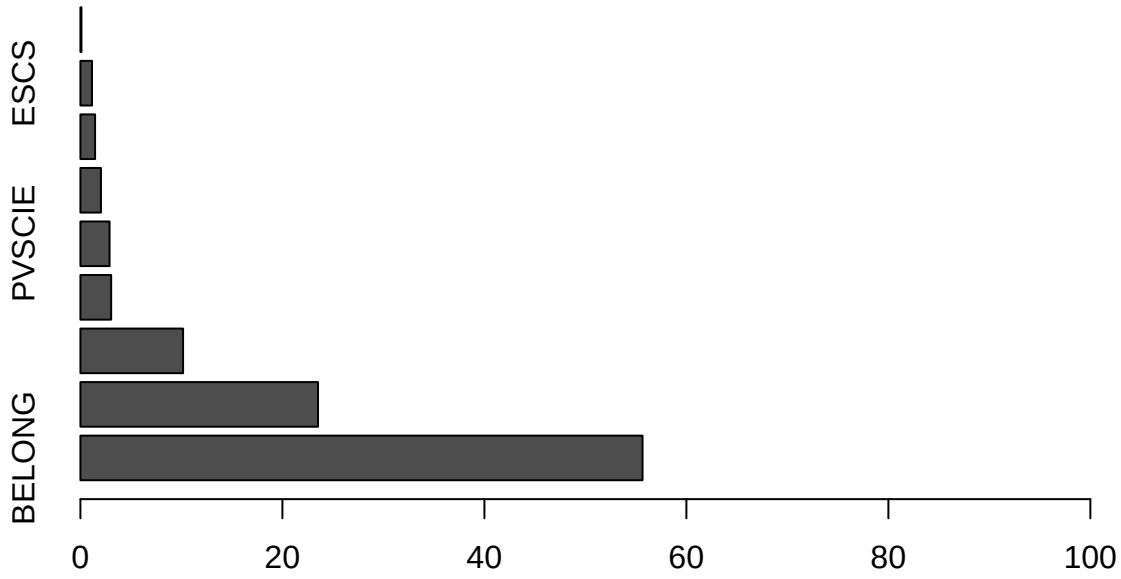
```
rpart.plot(prune1,extra = 104,yesno=2)
```



```
Model1 $variable.importance
```

```
##     BELONG    EMOSUPS    ANXTEST  ST004D01T     PVSCIE    MOTIVAT   TEACHSUP
## 712.779430 301.298052 130.138895  38.948888  36.934895  26.020296  18.576603
##       ESCS       IMMIG
##  14.661727   1.278991
```

```
#importance variables were scaled to 100
barplot(t((Model1$variable.importance/sum(Model1$variable.importance)*100)),horiz=TRUE,xlim = c(0,100))
```



Model2: Decision tree for training and testing data

- Pruned model: 1+SD rule to tune the tree
- CP=0.002689284

```
prune2 <- prune(model1, cp = 0.002689284)
Model2 <- summary(prune2)
```

```
## Call:
## rpart(formula = wb ~ ., data = training, na.action = na.omit,
##     method = "class", control = rpart.control(cp = 0))
##   n=7657 (1386 observations deleted due to missingness)
##
##             CP nsplit rel error    xerror       xstd
## 1  0.245759206      0 1.0000000 1.0000000 0.01682666
## 2  0.056268101      1 0.7542408 0.7716177 0.01553988
## 3  0.014480761      2 0.6979727 0.7141084 0.01512789
## 4  0.013515377      3 0.6834919 0.6954903 0.01498591
## 5  0.010757137      6 0.6429458 0.6818370 0.01487900
## 6  0.008688457      7 0.6321887 0.6764584 0.01483622
## 7  0.006206041      8 0.6235002 0.6731485 0.01480971
## 8  0.004964832      9 0.6172942 0.6652875 0.01474616
## 9  0.004137360     10 0.6123293 0.6590815 0.01469540
## 10 0.003309888     11 0.6081920 0.6657013 0.01474952
## 11 0.002689284     12 0.6048821 0.6611502 0.01471238
## 12 0.002689284     14 0.5995035 0.6549441 0.01466128
##
```

```
## Variable importance
##    BELONG   EMOSUPS   ANXTEST ST004D01T    PVSCIE  TEACHSUP      ESCS   MOTIVAT
##        58        25         9         3         2         1         1         1
##
## Node number 1: 7657 observations,    complexity param=0.2457592
##   predicted class=Low   expected loss=0.3156589  P(node) =1
##     class counts:  5240  2417
##    probabilities: 0.684 0.316
##   left son=2 (5595 obs) right son=3 (2062 obs)
##   Primary splits:
##       BELONG    < 0.26355  to the left,  improve=608.5835, (0 missing)
##       EMOSUPS   < 0.982    to the left,  improve=515.3075, (0 missing)
##       ANXTEST   < -0.10785 to the right, improve=314.3389, (0 missing)
##       TEACHSUP  < 0.65565  to the left,  improve=169.4996, (0 missing)
##       ST004D01T splits as  RL,           improve=143.3114, (0 missing)
##   Surrogate splits:
##       ANXTEST < -1.17875 to the right, agree=0.734, adj=0.014, (0 split)
##       ESCS    < 1.99845  to the left,  agree=0.731, adj=0.000, (0 split)
##       PVSCIE  < 229.2385 to the right, agree=0.731, adj=0.000, (0 split)
##
## Node number 2: 5595 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.1946381  P(node) =0.7307039
##     class counts:  4506  1089
##    probabilities: 0.805 0.195
##   left son=4 (4155 obs) right son=5 (1440 obs)
##   Primary splits:
##       EMOSUPS   < 0.982    to the left,  improve=144.24960, (0 missing)
##       BELONG    < -0.38615 to the left,  improve=116.10230, (0 missing)
##       ANXTEST   < 0.261    to the right, improve= 90.61965, (0 missing)
##       ST004D01T splits as  RL,           improve= 52.09384, (0 missing)
##       TEACHSUP  < 1.2768   to the left,  improve= 51.65985, (0 missing)
##   Surrogate splits:
##       ESCS   < 1.5148   to the left,  agree=0.746, adj=0.013, (0 split)
##       PVSCIE < 256.264  to the right, agree=0.743, adj=0.002, (0 split)
##
## Node number 3: 2062 observations,    complexity param=0.0562681
##   predicted class=High  expected loss=0.3559651  P(node) =0.2692961
##     class counts:   734  1328
##    probabilities: 0.356 0.644
##   left son=6 (772 obs) right son=7 (1290 obs)
##   Primary splits:
##       EMOSUPS   < 0.516    to the left,  improve=132.97290, (0 missing)
##       ANXTEST   < 0.10355  to the right, improve= 80.10580, (0 missing)
##       BELONG    < 1.246    to the left,  improve= 43.53596, (0 missing)
##       TEACHSUP  < 0.4875   to the left,  improve= 39.01250, (0 missing)
##       ST004D01T splits as  RL,           improve= 30.28236, (0 missing)
##   Surrogate splits:
##       MOTIVAT  < -0.16375 to the left,  agree=0.648, adj=0.060, (0 split)
##       BELONG   < 0.36235  to the left,  agree=0.642, adj=0.044, (0 split)
##       ANXTEST  < 1.8406   to the right, agree=0.633, adj=0.021, (0 split)
##       ESCS     < -0.93555 to the left,  agree=0.631, adj=0.014, (0 split)
##       TEACHSUP < -0.8684  to the left,  agree=0.631, adj=0.014, (0 split)
##
## Node number 4: 4155 observations
```

```
##   predicted class=Low   expected loss=0.1277978  P(node) =0.5426407
##     class counts:  3624   531
##    probabilities: 0.872 0.128
##
## Node number 5: 1440 observations,    complexity param=0.01351538
##   predicted class=Low   expected loss=0.3875  P(node) =0.1880632
##     class counts:   882   558
##    probabilities: 0.613 0.387
##   left son=10 (772 obs) right son=11 (668 obs)
##   Primary splits:
##       ANXTEST   < 0.3134   to the right, improve=54.90149, (0 missing)
##       BELONG    < -0.3794  to the left,  improve=45.96089, (0 missing)
##       ST004D01T splits as  RL,           improve=22.59090, (0 missing)
##       MOTIVAT   < 1.45175  to the left,  improve=17.11675, (0 missing)
##       TEACHSUP  < -0.1181  to the left,  improve=16.41509, (0 missing)
##   Surrogate splits:
##       BELONG    < -0.3651  to the left,  agree=0.614, adj=0.168, (0 split)
##       ST004D01T splits as  RL,           agree=0.605, adj=0.148, (0 split)
##       ESCS      < 1.0773   to the left,  agree=0.569, adj=0.072, (0 split)
##       PVSCIE    < 582.1975 to the left,  agree=0.559, adj=0.049, (0 split)
##       MOTIVAT   < 1.45175  to the left,  agree=0.541, adj=0.010, (0 split)
##
## Node number 6: 772 observations,    complexity param=0.01448076
##   predicted class=Low   expected loss=0.4119171  P(node) =0.1008228
##     class counts:   454   318
##    probabilities: 0.588 0.412
##   left son=12 (333 obs) right son=13 (439 obs)
##   Primary splits:
##       ANXTEST   < 0.1226   to the right, improve=33.321350, (0 missing)
##       ST004D01T splits as  RL,           improve=30.912980, (0 missing)
##       TEACHSUP  < 0.41835  to the left,  improve=13.983860, (0 missing)
##       BELONG    < 0.63645  to the left,  improve=10.561060, (0 missing)
##       EMOSUPS   < 0.06065  to the left,  improve= 5.925377, (0 missing)
##   Surrogate splits:
##       ST004D01T splits as  RL,           agree=0.631, adj=0.144, (0 split)
##       BELONG    < 0.38695  to the left,  agree=0.596, adj=0.063, (0 split)
##       EMOSUPS   < -1.0563  to the left,  agree=0.582, adj=0.030, (0 split)
##       TEACHSUP  < -0.4066  to the left,  agree=0.582, adj=0.030, (0 split)
##       IMMIG     splits as  RLL,          agree=0.579, adj=0.024, (0 split)
##
## Node number 7: 1290 observations
##   predicted class=High  expected loss=0.2170543  P(node) =0.1684733
##     class counts:   280  1010
##    probabilities: 0.217 0.783
##
## Node number 10: 772 observations
##   predicted class=Low   expected loss=0.2590674  P(node) =0.1008228
##     class counts:   572   200
##    probabilities: 0.741 0.259
##
## Node number 11: 668 observations,    complexity param=0.01351538
##   predicted class=High  expected loss=0.4640719  P(node) =0.08724043
##     class counts:   310   358
##    probabilities: 0.464 0.536
```

```
##   left son=22 (290 obs) right son=23 (378 obs)
##   Primary splits:
##       BELONG    < -0.4137  to the left,  improve=15.289500, (0 missing)
##       MOTIVAT   < 0.89985  to the left,  improve=10.479140, (0 missing)
##       PVSCIE    < 557.631  to the right, improve= 9.846661, (0 missing)
##       ANXTEST   < -0.1607  to the right, improve= 6.090499, (0 missing)
##       ST004D01T splits as  RL,          improve= 5.111681, (0 missing)
##   Surrogate splits:
##       PVSCIE   < 366.743  to the left,  agree=0.587, adj=0.048, (0 split)
##       ESCS     < 1.58355  to the right, agree=0.584, adj=0.041, (0 split)
##       TEACHSUP < -1.70135 to the left,  agree=0.578, adj=0.028, (0 split)
##       MOTIVAT  < -1.04655 to the left,  agree=0.570, adj=0.010, (0 split)
##       ANXTEST  < 0.3019   to the right, agree=0.570, adj=0.010, (0 split)
##
## Node number 12: 333 observations,    complexity param=0.002689284
##   predicted class=Low   expected loss=0.2432432  P(node) =0.04348962
##     class counts:   252    81
##    probabilities: 0.757 0.243
##   left son=24 (184 obs) right son=25 (149 obs)
##   Primary splits:
##       ST004D01T splits as  RL,          improve=11.498960, (0 missing)
##       ANXTEST   < 0.65545  to the right, improve= 6.818558, (0 missing)
##       TEACHSUP  < -0.0067  to the left,  improve= 5.328972, (0 missing)
##       BELONG    < 1.0972   to the left,  improve= 5.001176, (0 missing)
##       PVSCIE    < 506.995  to the right, improve= 4.303305, (0 missing)
##   Surrogate splits:
##       ANXTEST  < 0.52575  to the right, agree=0.610, adj=0.128, (0 split)
##       MOTIVAT  < 0.06465  to the right, agree=0.583, adj=0.067, (0 split)
##       TEACHSUP < -1.73035 to the right, agree=0.568, adj=0.034, (0 split)
##       PVSCIE   < 391.0965 to the right, agree=0.568, adj=0.034, (0 split)
##       EMOSUPS  < -2.1343  to the right, agree=0.565, adj=0.027, (0 split)
##
## Node number 13: 439 observations,    complexity param=0.01075714
##   predicted class=High  expected loss=0.4601367  P(node) =0.05733316
##     class counts:   202   237
##    probabilities: 0.460 0.540
##   left son=26 (136 obs) right son=27 (303 obs)
##   Primary splits:
##       ST004D01T splits as  RL,          improve=7.230342, (0 missing)
##       TEACHSUP  < 0.37385  to the left,  improve=7.162786, (0 missing)
##       PVSCIE    < 594.952  to the right, improve=5.451322, (0 missing)
##       EMOSUPS   < -2.8315  to the right, improve=4.855819, (0 missing)
##       BELONG    < 0.5086   to the left,  improve=4.686187, (0 missing)
##   Surrogate splits:
##       IMMIG  splits as  RLR,          agree=0.711, adj=0.066, (0 split)
##       ESCS   < -1.8742  to the left,  agree=0.699, adj=0.029, (0 split)
##       PVSCIE < 301.5725 to the left,  agree=0.697, adj=0.022, (0 split)
##
## Node number 22: 290 observations,    complexity param=0.008688457
##   predicted class=Low   expected loss=0.4137931  P(node) =0.03787384
##     class counts:   170   120
##    probabilities: 0.586 0.414
##   left son=44 (257 obs) right son=45 (33 obs)
##   Primary splits:
```

```
##       BELONG  < -2.0625  to the right, improve=12.178870, (0 missing)
##       PVSCIE  < 427.568  to the right, improve= 8.448276, (0 missing)
##       MOTIVAT < 0.89985  to the left,  improve= 6.961084, (0 missing)
##       ESCS    < -0.58545 to the right, improve= 3.832402, (0 missing)
##       ANXTEST < -0.12595 to the right, improve= 3.229779, (0 missing)
##
## Node number 23: 378 observations
##   predicted class=High  expected loss=0.3703704  P(node) =0.04936659
##     class counts:   140   238
##    probabilities: 0.370 0.630
##
## Node number 24: 184 observations
##   predicted class=Low   expected loss=0.125  P(node) =0.0240303
##     class counts:   161    23
##    probabilities: 0.875 0.125
##
## Node number 25: 149 observations,    complexity param=0.002689284
##   predicted class=Low   expected loss=0.3892617  P(node) =0.01945932
##     class counts:    91    58
##    probabilities: 0.611 0.389
##   left son=50 (104 obs) right son=51 (45 obs)
##   Primary splits:
##       BELONG   < 0.83185  to the left,  improve=8.396492, (0 missing)
##       TEACHSUP < 0.15995  to the left,  improve=7.957594, (0 missing)
##       PVSCIE   < 519.5945 to the right, improve=4.636067, (0 missing)
##       MOTIVAT  < 0.09305  to the right, improve=3.699049, (0 missing)
##       IMMIG    splits as  RLR,          improve=2.442961, (0 missing)
##   Surrogate splits:
##       EMOSUPS < -2.6343  to the right, agree=0.725, adj=0.089, (0 split)
##       ESCS    < 1.6205   to the left,  agree=0.711, adj=0.044, (0 split)
##       MOTIVAT < -0.91705 to the right, agree=0.705, adj=0.022, (0 split)
##
## Node number 26: 136 observations,    complexity param=0.00413736
##   predicted class=Low   expected loss=0.4044118  P(node) =0.01776153
##     class counts:    81    55
##    probabilities: 0.596 0.404
##   left son=52 (72 obs) right son=53 (64 obs)
##   Primary splits:
##       TEACHSUP < 0.44975  to the left,  improve=7.295956, (0 missing)
##       EMOSUPS  < 0.40455  to the left,  improve=2.997141, (0 missing)
##       ANXTEST  < -0.2053  to the right, improve=2.104394, (0 missing)
##       BELONG   < 2.0763   to the left,  improve=1.764706, (0 missing)
##       MOTIVAT  < -0.2457  to the left,  improve=1.647082, (0 missing)
##   Surrogate splits:
##       MOTIVAT < 0.6331   to the left,  agree=0.618, adj=0.188, (0 split)
##       BELONG  < 2.0763   to the left,  agree=0.603, adj=0.156, (0 split)
##       ESCS    < 0.92305  to the left,  agree=0.581, adj=0.109, (0 split)
##       ANXTEST < 0.039    to the left,  agree=0.581, adj=0.109, (0 split)
##       EMOSUPS < -1.9543  to the right, agree=0.581, adj=0.109, (0 split)
##
## Node number 27: 303 observations,    complexity param=0.006206041
##   predicted class=High  expected loss=0.3993399  P(node) =0.03957163
##     class counts:   121   182
##    probabilities: 0.399 0.601
```

```
##   left son=54 (53 obs) right son=55 (250 obs)
##   Primary splits:
##       PVSCIE   < 594.952  to the right, improve=7.534377, (0 missing)
##       TEACHSUP < -1.04835 to the left,  improve=5.809190, (0 missing)
##       EMOSUPS  < -0.3339  to the left,  improve=4.253591, (0 missing)
##       BELONG   < 0.5086   to the left,  improve=4.235357, (0 missing)
##       ANXTEST  < -0.10785 to the right, improve=1.994219, (0 missing)
##   Surrogate splits:
##       ESCS < 1.59565  to the right, agree=0.842, adj=0.094, (0 split)
##
## Node number 44: 257 observations,    complexity param=0.004964832
##   predicted class=Low   expected loss=0.3618677  P(node) =0.03356406
##     class counts:   164    93
##    probabilities: 0.638 0.362
##   left son=88 (205 obs) right son=89 (52 obs)
##   Primary splits:
##       PVSCIE  < 427.568  to the right, improve=8.379661, (0 missing)
##       BELONG  < -0.7087  to the left,  improve=4.267332, (0 missing)
##       ESCS    < -0.58545 to the right, improve=4.210945, (0 missing)
##       MOTIVAT < 0.96945  to the left,  improve=3.768630, (0 missing)
##       IMMIG   splits as  LLR,          improve=1.621814, (0 missing)
##   Surrogate splits:
##       ESCS < 2.2695   to the left,  agree=0.802, adj=0.019, (0 split)
##
## Node number 45: 33 observations
##   predicted class=High  expected loss=0.1818182  P(node) =0.004309782
##     class counts:     6    27
##    probabilities: 0.182 0.818
##
## Node number 50: 104 observations
##   predicted class=Low   expected loss=0.2788462  P(node) =0.01358234
##     class counts:    75    29
##    probabilities: 0.721 0.279
##
## Node number 51: 45 observations
##   predicted class=High  expected loss=0.3555556  P(node) =0.005876975
##     class counts:    16    29
##    probabilities: 0.356 0.644
##
## Node number 52: 72 observations
##   predicted class=Low   expected loss=0.25  P(node) =0.009403161
##     class counts:    54    18
##    probabilities: 0.750 0.250
##
## Node number 53: 64 observations
##   predicted class=High  expected loss=0.421875  P(node) =0.008358365
##     class counts:    27    37
##    probabilities: 0.422 0.578
##
## Node number 54: 53 observations
##   predicted class=Low   expected loss=0.3584906  P(node) =0.006921771
##     class counts:    34    19
##    probabilities: 0.642 0.358
##
```

```
## Node number 55: 250 observations,    complexity param=0.003309888
##   predicted class=High  expected loss=0.348  P(node) =0.03264986
##     class counts:    87   163
##    probabilities: 0.348 0.652
##   left son=110 (34 obs) right son=111 (216 obs)
##   Primary splits:
##       TEACHSUP < -1.0147  to the left,  improve=5.722510, (0 missing)
##       BELONG   < 0.5086   to the left,  improve=4.308878, (0 missing)
##       EMOSUPS  < -0.3339  to the left,  improve=2.656378, (0 missing)
##       PVSCIE   < 402.2435 to the right, improve=1.923277, (0 missing)
##       ANXTEST  < -0.16655 to the right, improve=1.478265, (0 missing)
##   Surrogate splits:
##       ESCS < -1.9137  to the left,  agree=0.868, adj=0.029, (0 split)
##
## Node number 88: 205 observations
##   predicted class=Low   expected loss=0.297561  P(node) =0.02677289
##     class counts:   144    61
##    probabilities: 0.702 0.298
##
## Node number 89: 52 observations
##   predicted class=High  expected loss=0.3846154  P(node) =0.006791171
##     class counts:    20    32
##    probabilities: 0.385 0.615
##
## Node number 110: 34 observations
##   predicted class=Low   expected loss=0.3823529  P(node) =0.004440381
##     class counts:    21    13
##    probabilities: 0.618 0.382
##
## Node number 111: 216 observations
##   predicted class=High  expected loss=0.3055556  P(node) =0.02820948
##     class counts:    66   150
##    probabilities: 0.306 0.694
```

```
#variables are used in the tree , choosing cp based on the low xerror
Pred2 <- predict(prune2,training,type="class")
acc2<- confusionMatrix(Pred2,training$wb)
acc2
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  Low High
##       Low  5503 1130
##       High  644 1766
##
##                Accuracy : 0.8038
##                  95% CI : (0.7955, 0.812)
##     No Information Rate : 0.6798
##     P-Value [Acc > NIR] : < 2.2e-16
##
##                   Kappa : 0.5285
##
##  Mcnemar's Test P-Value : < 2.2e-16
##
```

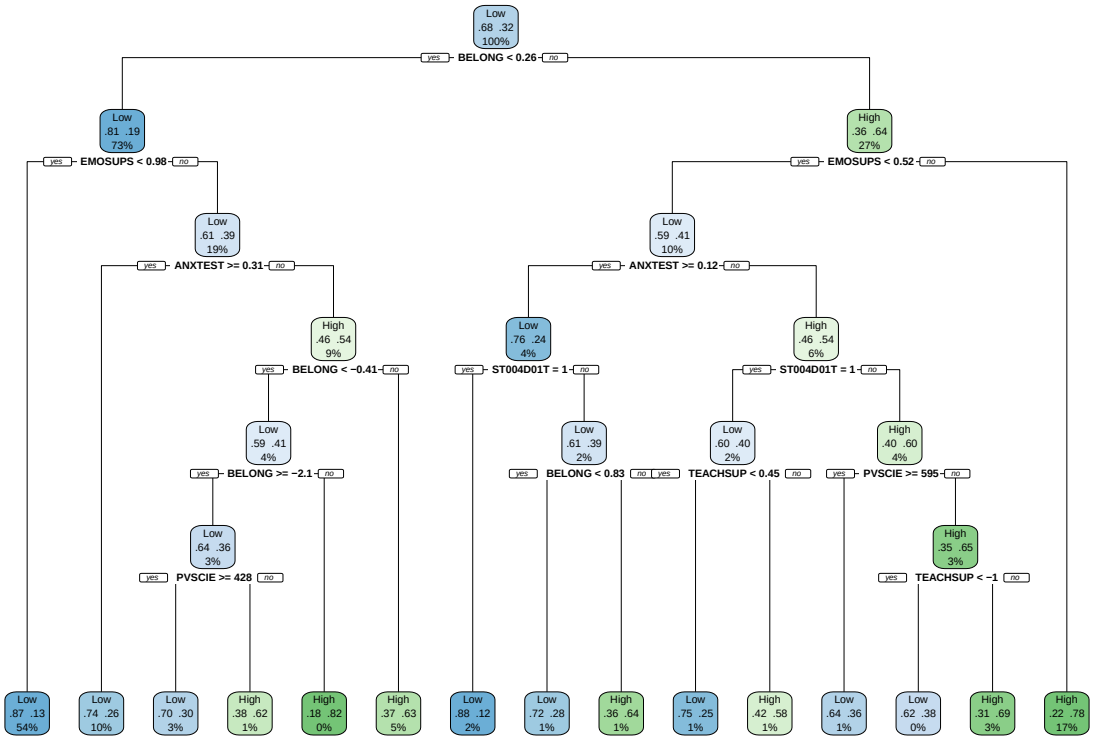
```
##             Sensitivity : 0.8952
##             Specificity : 0.6098
##          Pos Pred Value : 0.8296
##          Neg Pred Value : 0.7328
##              Prevalence : 0.6798
##          Detection Rate : 0.6085
##    Detection Prevalence : 0.7335
##       Balanced Accuracy : 0.7525
##
##        'Positive' Class : Low
##
```

```
# testing
PredT2 <- predict(prune2,testing,type="class")
accT2 <- confusionMatrix(PredT2,testing$wb)
accT2
```

```
## Confusion Matrix and Statistics
##
##           Reference
## Prediction  Low High
##       Low  1302  320
##       High  164  475
##
##                Accuracy : 0.7859
##                  95% CI : (0.7684, 0.8027)
##     No Information Rate : 0.6484
##     P-Value [Acc > NIR] : < 2.2e-16
##
##                   Kappa : 0.5084
##
##  Mcnemar's Test P-Value : 1.849e-12
##
##             Sensitivity : 0.8881
##             Specificity : 0.5975
##          Pos Pred Value : 0.8027
##          Neg Pred Value : 0.7433
##              Prevalence : 0.6484
##          Detection Rate : 0.5759
##    Detection Prevalence : 0.7174
##       Balanced Accuracy : 0.7428
##
##        'Positive' Class : Low
##
```

Plot and important variables for the tunned model

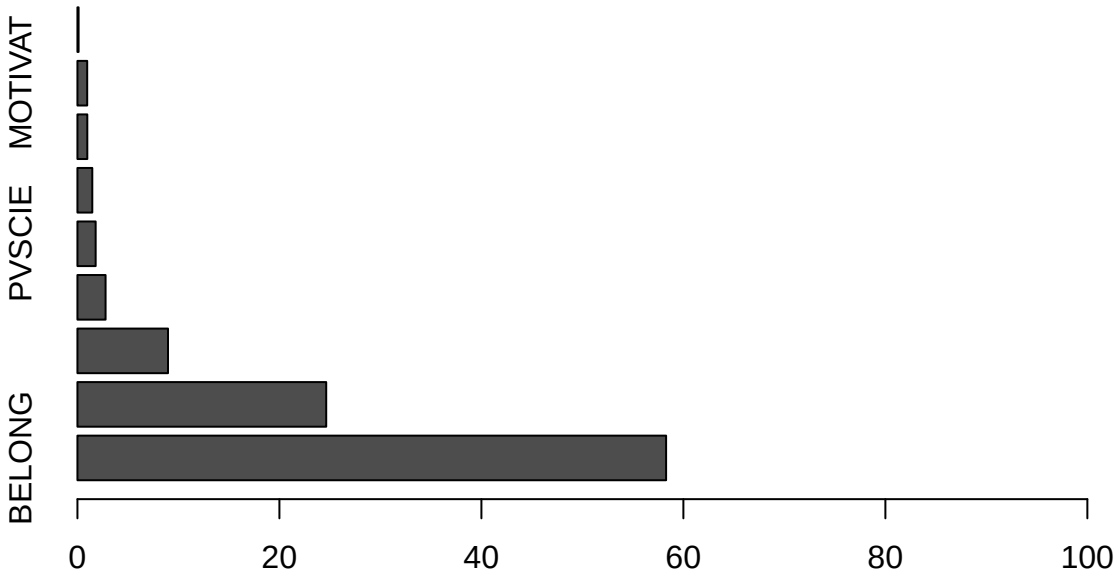
```
rpart.plot(prune2,extra = 104,yesno=2)
```




```
Model2 $variable.importance
```

```
##     BELONG    EMOSUPS    ANXTEST  ST004D01T     PVSCIE   TEACHSUP       ESCS
## 662.751016 280.076193 101.960356  31.668974  20.505378  16.721449  11.094890
##    MOTIVAT       IMMIG
##  10.983062   1.278991
```

```
#importance variables were scaled to 100
barplot(t((Model2$variable.importance/sum(Model2$variable.importance)*100)),horiz=TRUE,xlim = c(0,100))
```


MOTIVAT
PVSCIE
BELONG
0
20
40
60
80
100