

seminarska.r

Gal

2022-12-04

```
library(CORElearn)

# HELPERS
Split70to30 <- function(data)
{
  train <- data[1:round(0.7*nrow(data)),]
  test  <- data[-(1:round(0.7*nrow(data))),]
  return(list(train, test))
}

attr <- function(position, attrName) {
  return(paste(position, attrName, sep=""));
}

# __START

set.seed(0)

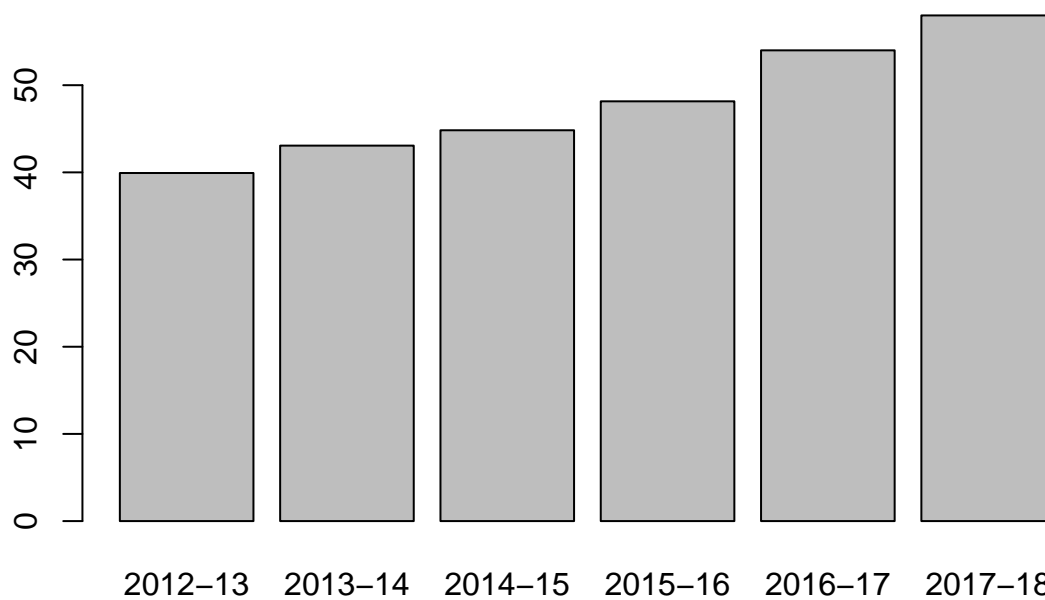
setwd("C:/Users/Gal/Documents/FRI/UI/Seminarska/")
md <- read.table(file="nbadata.txt", sep=" ", header=TRUE)

md <- md[order(md$gmDate),];

SEASONS = unique(md$gmSeason);
TEAMS = unique(c(md$awayAbbr, md$homeAbbr))

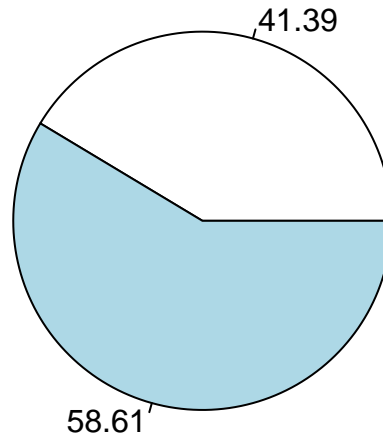
# # VIZUALIZACIJA
# povprecno stevilo metov trojk obeh ekip skupaj na sezono
averageThrees <- vector()
for(season in SEASONS) {
  seasonGames <- md$gmSeason == season;
  averageThrees <- c(averageThrees, mean(md$home3PA[seasonGames] + md$away3PA[seasonGames]));
}
barplot(averageThrees, names=SEASONS, main="Povprecno število vseh metov za tri pike v tekmi na sezono")
```

Povprečno število vseh metov za tri pike v tekmi na sezono



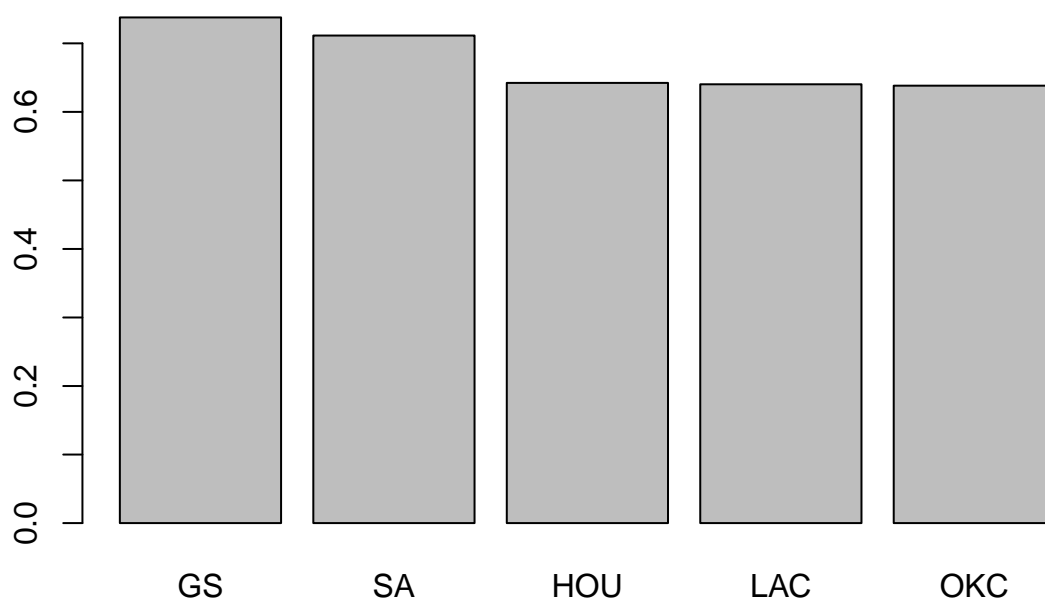
```
# # stevilo zmag home ekip vs stevilo zmag away ekip
homeWins = table(md$homePTS > md$awayPTS);
homeWinPercentage <- homeWins / sum(homeWins)
pie(homeWins, labels=round(homeWinPercentage * 100, 2),
    main="Zmage doma (modro) VS zmage v gostovanju (belo)")
```

Zmage doma (modro) VS zmage v gostovanju (belo)



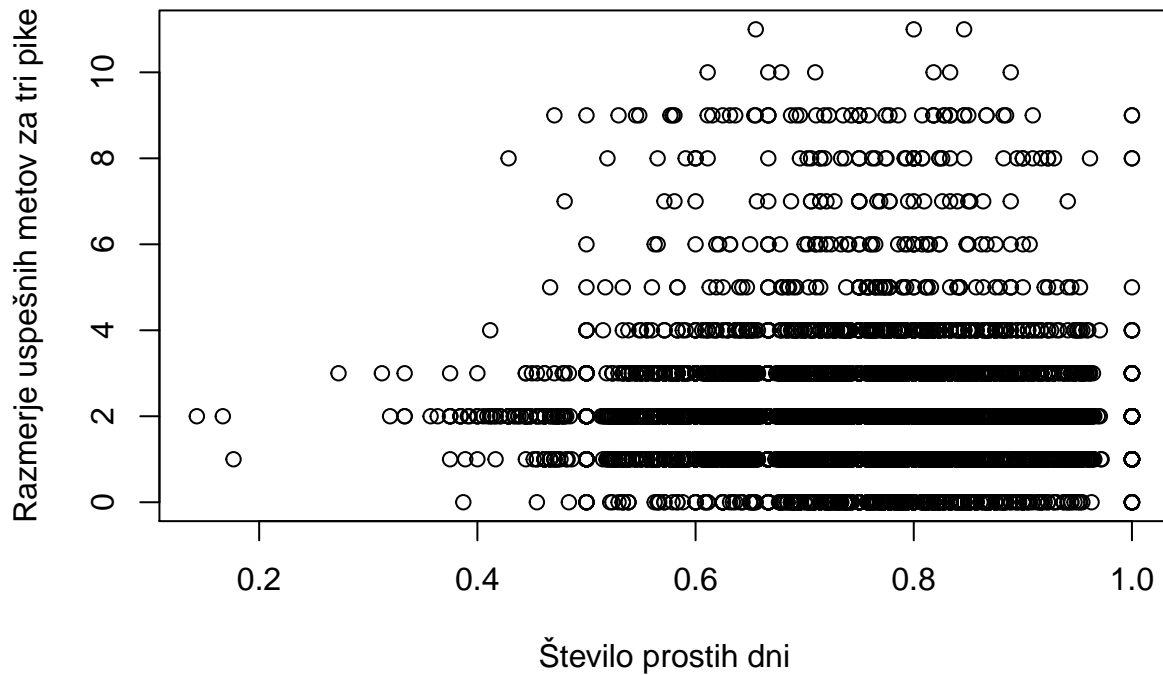
```
# # najboljša ekipa po razmerju zmag
winRatioByTeam = list();
for (team in TEAMS) {
  homeGames <- md$homeAbbr == team;
  awayGames <- md$awayAbbr == team;
  homeWins <- md$homePTS[homeGames] > md$awayPTS[homeGames];
  awayWins <- md$homePTS[awayGames] < md$awayPTS[awayGames];
  totalWins <- sum(homeWins) + sum(awayWins);
  totalGames <- sum(homeGames) + sum(awayGames);
  ratio <- totalWins / totalGames;
  winRatioByTeam[[team]] <- ratio;
}
winRatioByTeam <- sort(unlist(winRatioByTeam), decreasing=TRUE);
barplot(winRatioByTeam[1:5], names=names(winRatioByTeam)[1:5], main="Top 5 najboljših ekip po razmerju z
```

Top 5 najboljših ekip po razmerju zmag



```
# # Graf odvisnosti uspesnih prostih metov od stevila prostih dni
homeFreeShotSuccessRatio = md$homeFTM / md$homeFTA;
awayFreeShotSuccessRatio = md$awayFTM / md$awayFTA;
totalFreeShotSuccessRatio = append(homeFreeShotSuccessRatio, awayFreeShotSuccessRatio);
daysOff = append(md$homeDayOff, md$awayDayOff);
plot(totalFreeShotSuccessRatio,daysOff, main="Razmerje uspešnih prostih metov odvisno od števila prostih dni")
```

Razmerje uspešnih prostih metov odvisno od števila prostih dni



```
structureTeamData <- function(games, position)
{
  teamStatistics <- list();
  teamStatistics[[attr(position, "PTS")]] <- mean(games[[attr(position, "PTS")]]);

  teamStatistics[[attr(position, "ORBR")]] <- mean(games[[attr(position, "ORB")]] / games[[attr(position, "ORBR")]]);
  teamStatistics[[attr(position, "DRBR")]] <- mean(games[[attr(position, "DRB")]] / games[[attr(position, "DRBR")]]);

  # perctanges
  teamStatistics[[attr(position, "FGR")]] <- mean(games[[attr(position, "FGM")]] / games[[attr(position, "FGR")]]);
  teamStatistics[[attr(position, "3PR")]] <- mean(games[[attr(position, "3PM")]] / games[[attr(position, "3PR")]]);
  teamStatistics[[attr(position, "2PR")]] <- mean(games[[attr(position, "2PM")]] / games[[attr(position, "2PR")]]);
  teamStatistics[[attr(position, "FTR")]] <- mean(games[[attr(position, "FTM")]] / games[[attr(position, "FTR")]]);

  return(teamStatistics);
}

pastWinLoseRatio <- function (teamAbbr, beforeDate, data) {
  homeGamesSelection <- data$homeAbbr == teamAbbr & data$gmDate < beforeDate;
  homeGames <- data[homeGamesSelection,];
  homeWinsRatio <- mean(homeGames$homePTS > homeGames$awayPTS);
  awayGamesSelection <- data$awayAbbr == teamAbbr & data$gmDate < beforeDate;
  awayGames <- data[awayGamesSelection,];
  if (nrow(homeGames) == 0 && nrow(awayGames) == 0) {
    return(0);
  }
}
```

```

awayWinsRatio <- mean(awayGames$homePTS < awayGames$awayPTS);
if (is.na(homeWinsRatio)) {
  return(awayWinsRatio);
}
if (is.na(awayWinsRatio)) {
  return(homeWinsRatio);
}
return ((homeWinsRatio + awayWinsRatio) / 2);
}

# vrne pozitiven rezultat ce ima ekipa1 overal vec tock , negativni pa ce jih ima ekipa2 vec
pastMatchesScoreDifference <- function (team1, team2, beforeDate) {
  homeGamesSelection <- md$homeAbbr == team1 & md$awayAbbr == team2 & md$gmDate < beforeDate;
  homeGames <- md[homeGamesSelection,];
  homeGamesScoreDifference <- sum(homeGames$homePTS - homeGames$awayPTS);
  awayGamesSelection <- md$homeAbbr == team2 & md$awayAbbr == team1 & md$gmDate < beforeDate;
  awayGames <- md[awayGamesSelection,];
  awayGamesScoreDifference <- sum(awayGames$awayPTS - awayGames$homePTS);
  totalSum = homeGamesScoreDifference + awayGamesScoreDifference;
  if (is.null(totalSum) || is.na(totalSum)) {
    return(0);
  }
  return (totalSum);
}

# structuredData <- data.frame();
# for (i in 1:nrow(md)) {
#   game <- md[i,];
#   homeTeamGamesSelection <- md$homeAbbr == game$homeAbbr & md$gmDate < game$gmDate;
#   homeTeamGames <- md[homeTeamGamesSelection,];
#   if (nrow(homeTeamGames) == 0) {
#     next;
#   }
#   structuredHomeTeamData = structureTeamData(homeTeamGames, "home");

#   awayTeamGamesSelection <- md$awayAbbr == game$awayAbbr & md$gmDate < game$gmDate;
#   awayTeamGames <- md[awayTeamGamesSelection,];
#   if (nrow(awayTeamGames) == 0) {
#     next;
#   }
#   structuredAwayTeamData = structureTeamData(awayTeamGames, "away");

#   # zdruzeno v vrstico
#   structuredGameData <- c(structuredHomeTeamData, structuredAwayTeamData);

#   # dodamo nove attribute
#   structuredGameData$homeWins <- pastWinLoseRatio(game$homeAbbr, game$gmDate, md);
#   structuredGameData$awayWins <- pastWinLoseRatio(game$awayAbbr, game$gmDate, md);
#   structuredGameData$pastMatchesScoreDifference <- pastMatchesScoreDifference(game$homeAbbr, game$a
#   structuredGameData$isHomeWinner <- game$homePTS > game$awayPTS;
#   structuredGameData$scoreDifference <- game$homePTS - game$awayPTS;

```

```
#      structuredData <- rbind(structuredData, structuredGameData);
# }

# # <DEBUG>
structuredData <- read.csv("myfile.csv");
# # </DEBUG>

# ocenjevanje atributov
sort(attrEval(isHomeWinner ~ . - scoreDifference, structuredData, "GainRatio"), decreasing = TRUE)
```

```
## Changing dependent variable to factor with levels: FALSE TRUE
```

```
## Warning in attrEval(isHomeWinner ~ . - scoreDifference, structuredData, :
## Possibly this is an error caused by regression formula and classification
## attribute estimator or vice versa.
```

##	scoreDifference	awayORBR
##	1.00000000	0.10356766
##	awayDRBR	awayPTS
##	0.10356766	0.10017087
##	homeFGR	pastMatchesScoreDifference
##	0.09574844	0.09574844
##	homePTS	homeFTR
##	0.06453110	0.06283364
##	home3PR	awayFTR
##	0.06077401	0.05809203
##	homeORBR	homeDRBR
##	0.03738373	0.03738373
##	awayWins	homeWins
##	0.03738373	0.03132059
##	home2PR	away3PR
##	0.02334045	0.02191597
##	awayFGR	away2PR
##	0.02108430	0.01807756

```
sort(attrEval(isHomeWinner ~ . - scoreDifference, structuredData, "Gini"), decreasing = TRUE)
```

```
## Changing dependent variable to factor with levels: FALSE TRUE
```

```
## Warning in attrEval(isHomeWinner ~ . - scoreDifference, structuredData, :
## Possibly this is an error caused by regression formula and classification
## attribute estimator or vice versa.
```

##	scoreDifference	homeWins
##	0.485277403	0.018623610
##	pastMatchesScoreDifference	awayWins
##	0.016977593	0.012941702
##	awayFGR	homePTS
##	0.011464132	0.010952506

```
##           homeFGR           home2PR
##      0.010810978      0.009950270
##           home3PR           away2PR
##      0.008462446      0.008449942
##           awayPTS           homeFTR
##      0.007459379      0.006522074
##           homeORBR           homeDRBR
##      0.003859045      0.003859045
##           away3PR           awayORBR
##      0.003353822      0.002418816
##           awayDRBR           awayFTR
##      0.002418816      0.001851150
```

```
#reliefK ni kratkoviden
```

```
sort(attrEval(isHomeWinner ~ . - scoreDifference, structuredData, "Relief"), decreasing = TRUE)
```

```
## Changing dependent variable to factor with levels: FALSE TRUE
```

```
## Warning in attrEval(isHomeWinner ~ . - scoreDifference, structuredData, :
## Possibly this is an error caused by regression formula and classification
## attribute estimator or vice versa.
```

```
##           scoreDifference           awayPTS
##      6.742700e-01      1.009046e-02
##           awayFTR           homeWins
##      7.060519e-03      6.031706e-03
##           away3PR pastMatchesScoreDifference
##      5.689239e-03      5.631994e-03
##           homeFTR           homePTS
##      5.010418e-03      4.957722e-03
##           away2PR           home2PR
##      4.250628e-03      4.139926e-03
##           awayWins           home3PR
##      3.275287e-03      3.222844e-03
##           awayORBR           awayDRBR
##      2.603654e-03      2.603654e-03
##           homeFGR           homeORBR
##      1.993259e-03      1.653258e-03
##           homeDRBR           awayFGR
##      1.653258e-03      -4.485136e-05
```

```
sort(attrEval(scoreDifference ~ . - isHomeWinner, structuredData, "MSEofMean"), decreasing = TRUE)
```

```
##           isHomeWinner pastMatchesScoreDifference
##      -63.94137      -173.64483
##           homeWins           awayWins
##      -173.72099      -174.98545
##           homeFGR           homePTS
##      -175.09404      -175.26359
##           home2PR           awayFGR
##      -175.61958      -175.63615
##           away2PR           home3PR
```



```
##          -176.26168          -176.31678
##          awayPTS          homeFTR
##          -177.30359          -177.63028
##          homeORBR          homeDRBR
##          -178.46482          -178.46482
##          awayORBR          awayDRBR
##          -179.13674          -179.13674
##          awayFTR          away3PR
##          -179.21775          -179.23731
```

```
sort(attrEval(scoreDifference ~ . - isHomeWinner, structuredData, "RReliefFexpRank"), decreasing = TRUE)
```

```
##          isHomeWinner          homeFGR
##          0.234333623          -0.003021581
##          awayFGR          away2PR
##          -0.003190963          -0.003682793
##          home3PR          home2PR
##          -0.003755186          -0.004943084
##          awayORBR          awayDRBR
##          -0.006458481          -0.006458481
##          homeORBR          homeDRBR
##          -0.007076418          -0.007076418
##          away3PR          homePTS
##          -0.009396018          -0.010237652
##          awayPTS          awayFTR
##          -0.010331608          -0.010581415
## pastMatchesScoreDifference          homeFTR
##          -0.010863588          -0.014565011
##          homeWins          awayWins
##          -0.018003668          -0.018047132
```

```
structuredData$isHomeWinner <- as.factor(structuredData$isHomeWinner);
```

```
# KLASIFIKACIJA
```

```
splitData = Split70to30(structuredData);
train <- splitData[[1]];
test <- splitData[[2]];
```

```
# EVALUATION HELPERS
```

```
# odstotek pravilno klasificiranih pozitivnih primerov
```

```
Sensitivity <- function(obs, pred, pos.class)
```

```
{
  TP <- sum(obs == pos.class & pred == pos.class)
  FN <- sum(obs == pos.class & pred != pos.class)
  return(TP / (TP + FN))
}
```

```
# odstotek pravilno klasificiranih negativnih primerov
```

```
Specificity <- function(obs, pred, pos.class)
```

```
{
  TN <- sum(obs != pos.class & pred != pos.class)
  FP <- sum(obs != pos.class & pred == pos.class)
}
```

```

    return(TN / (TN + FP))
}
# odstotek pravilno klasificiranih primerov, ki so bili klasificirani kot pozitivni
Precision <- function(obs, pred, pos.class)
{
  TP <- sum(obs == pos.class & pred == pos.class)
  FP <- sum(obs != pos.class & pred == pos.class)
  return(TP / (TP + FP))
}

CA <- function(observed, predicted)
{
  mean(observed == predicted)
}

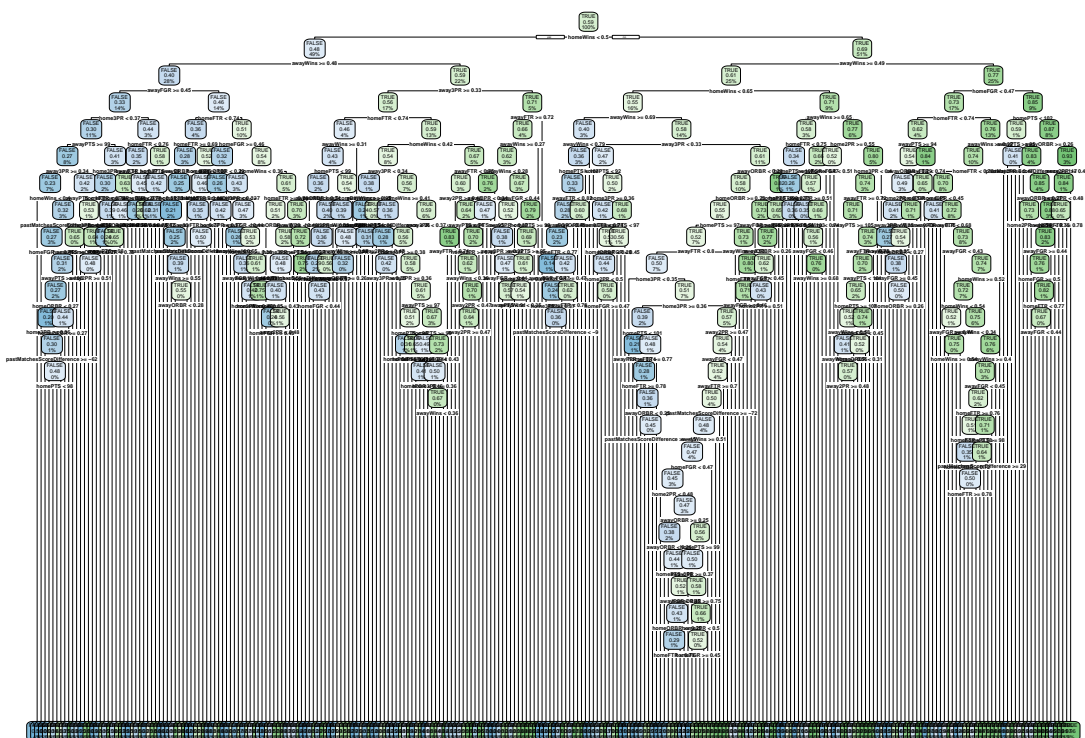
brierScore <- function(observedMatrix, predictedMatrix)
{
  sum((observedMatrix - predictedMatrix) ^ 2) / nrow(predictedMatrix)
}

library(nnet)
obsMat <- class.ind(test$isHomeWinner)
observed <- test$isHomeWinner;

# DECISION TREE
library(rpart)
library(rpart.plot)
dt <- rpart(isHomeWinner ~ . - scoreDifference, data=train, cp=0)
rpart.plot(dt)

```

Warning: labs do not fit even at cex 0.15, there may be some overplotting



rpart med gradnjo drevesa interno ocenjuje njegovo kvaliteto
 printcp(dt)

```
##
## Classification tree:
## rpart(formula = isHomeWinner ~ . - scoreDifference, data = train,
##       cp = 0)
##
## Variables actually used in tree construction:
##   [1] away2PR          away3PR
##   [3] awayFGR          awayFTR
##   [5] awayORBR         awayPTS
##   [7] awayWins         home2PR
##   [9] home3PR          homeDRBR
##  [11] homeFGR          homeFTR
##  [13] homeORBR         homePTS
##  [15] homeWins         pastMatchesScoreDifference
##
## Root node error: 2121/5136 = 0.41297
##
## n= 5136
##
##      CP nsplit rel error  xerror   xstd
## 1 0.06836398    0  1.00000 1.00000 0.016636
## 2 0.00550055    2  0.86327 0.89863 0.016323
## 3 0.00455760    6  0.83640 0.88590 0.016275
```

```
## 4 0.00400754      9  0.82273 0.88260 0.016262
## 5 0.00377181     12  0.80905 0.87223 0.016221
## 6 0.00330033     16  0.79397 0.86752 0.016201
## 7 0.00306459     19  0.78171 0.87176 0.016219
## 8 0.00282885     23  0.76945 0.88119 0.016256
## 9 0.00267170     26  0.76096 0.89109 0.016295
## 10 0.00247525     29  0.75295 0.89439 0.016307
## 11 0.00243596     33  0.74305 0.89722 0.016318
## 12 0.00235738     41  0.72183 0.89816 0.016322
## 13 0.00212164     53  0.69354 0.89958 0.016327
## 14 0.00188590     65  0.66337 0.90570 0.016349
## 15 0.00169731     74  0.64639 0.91231 0.016373
## 16 0.00165017     82  0.63083 0.91513 0.016383
## 17 0.00153230     90  0.61763 0.91561 0.016385
## 18 0.00141443     95  0.60962 0.92551 0.016419
## 19 0.00117869    154  0.51344 0.94719 0.016489
## 20 0.00094295    168  0.49505 0.96134 0.016532
## 21 0.00070721    188  0.47572 0.97595 0.016574
## 22 0.00062863    198  0.46865 0.97595 0.016574
## 23 0.00058934    204  0.46488 0.98020 0.016585
## 24 0.00047148    208  0.46252 0.98020 0.016585
## 25 0.00035361    235  0.44979 0.99859 0.016633
## 26 0.00031432    239  0.44837 1.00566 0.016650
## 27 0.00023574    250  0.43989 1.00566 0.016650
## 28 0.00000000    262  0.43659 1.01414 0.016670
```

```
tab <- printcp(dt)
```

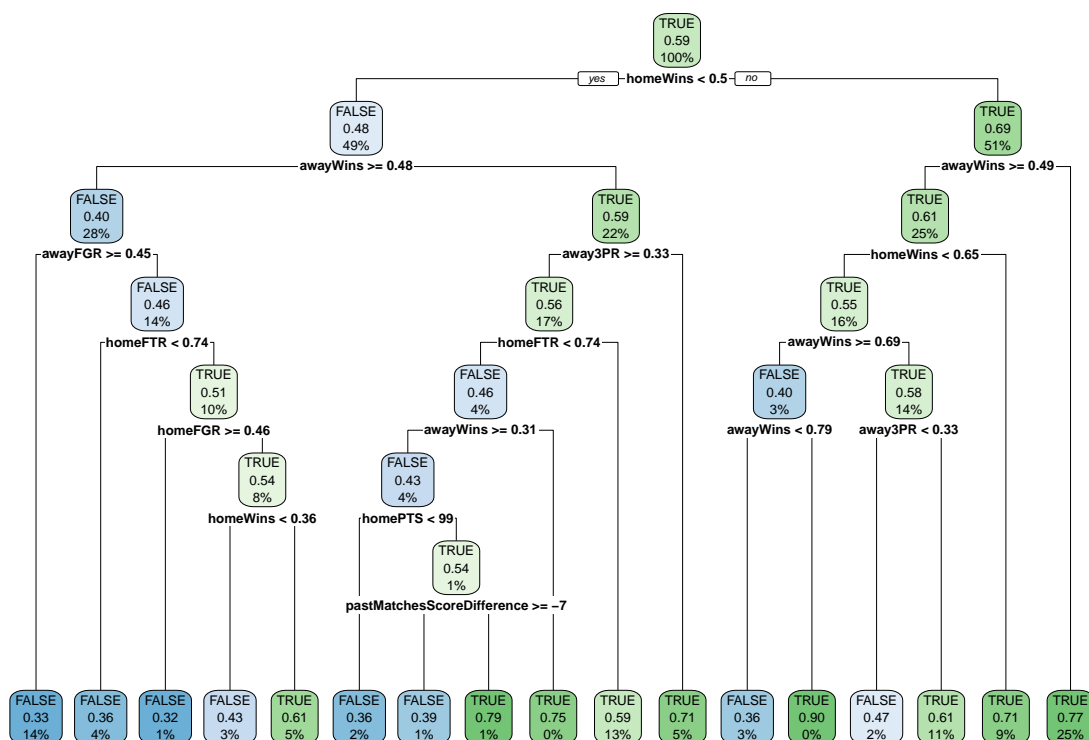
```
##
## Classification tree:
## rpart(formula = isHomeWinner ~ . - scoreDifference, data = train,
##       cp = 0)
##
## Variables actually used in tree construction:
## [1] away2PR      away3PR
## [3] awayFGR      awayFTR
## [5] awayORBR     awayPTS
## [7] awayWins     home2PR
## [9] home3PR      homeDRBR
## [11] homeFGR      homeFTR
## [13] homeORBR     homePTS
## [15] homeWins     pastMatchesScoreDifference
##
## Root node error: 2121/5136 = 0.41297
##
## n= 5136
##
##      CP nsplit rel error  xerror    xstd
## 1 0.06836398      0  1.00000 1.00000 0.016636
## 2 0.00550055      2  0.86327 0.89863 0.016323
## 3 0.00455760      6  0.83640 0.88590 0.016275
## 4 0.00400754      9  0.82273 0.88260 0.016262
## 5 0.00377181     12  0.80905 0.87223 0.016221
## 6 0.00330033     16  0.79397 0.86752 0.016201
```

```
## 7 0.00306459 19 0.78171 0.87176 0.016219
## 8 0.00282885 23 0.76945 0.88119 0.016256
## 9 0.00267170 26 0.76096 0.89109 0.016295
## 10 0.00247525 29 0.75295 0.89439 0.016307
## 11 0.00243596 33 0.74305 0.89722 0.016318
## 12 0.00235738 41 0.72183 0.89816 0.016322
## 13 0.00212164 53 0.69354 0.89958 0.016327
## 14 0.00188590 65 0.66337 0.90570 0.016349
## 15 0.00169731 74 0.64639 0.91231 0.016373
## 16 0.00165017 82 0.63083 0.91513 0.016383
## 17 0.00153230 90 0.61763 0.91561 0.016385
## 18 0.00141443 95 0.60962 0.92551 0.016419
## 19 0.00117869 154 0.51344 0.94719 0.016489
## 20 0.00094295 168 0.49505 0.96134 0.016532
## 21 0.00070721 188 0.47572 0.97595 0.016574
## 22 0.00062863 198 0.46865 0.97595 0.016574
## 23 0.00058934 204 0.46488 0.98020 0.016585
## 24 0.00047148 208 0.46252 0.98020 0.016585
## 25 0.00035361 235 0.44979 0.99859 0.016633
## 26 0.00031432 239 0.44837 1.00566 0.016650
## 27 0.00023574 250 0.43989 1.00566 0.016650
## 28 0.00000000 262 0.43659 1.01414 0.016670
```

```
# izberemo vrednost parametra cp, ki ustreza minimalni napaki internega presnega preverjanja
row <- which.min(tab[, "xerror"])
th <- mean(c(tab[row, "CP"], tab[row-1, "CP"]))
th
```

```
## [1] 0.003536068
```

```
# porezemo drevo z izbrano nastavitvijo
dt <- prune(dt, cp=th)
rpart.plot(dt)
```



```
predicted <- predict(dt, test, type="class")
CA(observed, predicted)
```

```
## [1] 0.5942753
```

```
Sensitivity(observed, predicted, "TRUE")
```

```
## [1] 0.8043648
```

```
Specificity(observed, predicted, "TRUE")
```

```
## [1] 0.3006536
```

```
Precision(observed, predicted, "TRUE")
```

```
## [1] 0.6164875
```

```
predMat <- predict(dt, test, type = "prob")
brierScore(obsMat, predMat)
```

```
## [1] 0.4859648
```

```
# NAIVNI BAYESOV KLASIFIKATOR
```

```
library(e1071)
```

```
nb <- naiveBayes(isHomeWinner ~ . - scoreDifference, data = train)
predicted <- predict(nb, test, type="class")
```

```
CA(observed, predicted)
```

```
## [1] 0.5906406
```

```
Sensitivity(observed, predicted, "TRUE")
```

```
## [1] 0.5767732
```

```
Specificity(observed, predicted, "TRUE")
```

```
## [1] 0.6100218
```

```
Precision(observed, predicted, "TRUE")
```

```
## [1] 0.6739526
```

```
predMat <- predict(nb, test, type = "raw")
brierScore(obsMat, predMat)
```

```
## [1] 0.6036404
```

```
# RANDOM FOREST
```

```
rf <- CoreModel(isHomeWinner ~ . - scoreDifference, data = train, model="rf")
predicted <- predict(rf, test, type="class")
CA(observed, predicted)
```

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

```
Sensitivity(observed, predicted, "TRUE")
```

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

```
Specificity(observed, predicted, "TRUE")
```

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

```
Precision(observed, predicted, "TRUE")
```

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

```
predMat <- predict(rf, test, type = "prob")
brierScore(obsMat, predMat)
```

```
## [1] 0.002396177
```

```
# # REGRESIJA
```

```
# mere ocenjevanja
```

```
# srednja absolutna napaka
```

```
mae <- function(obs, pred)
{
  obs <- as.numeric(obs);
  pred <- as.numeric(pred);
  mean(abs(obs - pred))
}
```

```
# srednja kvadratna napaka
```

```
mse <- function(obs, pred)
{
  obs <- as.numeric(obs);
  pred <- as.numeric(pred);
  mean((obs - pred)^2)
}
```

```
# relativna srednja absolutna napaka (ocenjuje v primerjavi s trivialno predikcijo)
```

```
rmae <- function(obs, pred, mean.val)
{
  obs <- as.numeric(obs);
  pred <- as.numeric(pred);
  sum(abs(obs - pred)) / sum(abs(obs - mean.val))
}
```

```
# relativna srednja kvadratna napaka
```

```
rmse <- function(obs, pred, mean.val)
{
  obs <- as.numeric(obs);
  pred <- as.numeric(pred);
  sum((obs - pred)^2)/sum((obs - mean.val)^2)
}
```

```
splitData = Split70to30(structuredData);
train <- splitData[[1]];
test <- splitData[[2]];
```

```
#
```

```
# Trivialni model
```

```
#
```

```
meanVal <- mean(train$scoreDifference);
meanVal
```

```
## [1] 2.709502
```



```
predTrivial <- rep(meanVal, nrow(test))
mae(observed, predTrivial)
```

```
## [1] 1.126585
```

```
mse(observed, predTrivial)
```

```
## [1] 1.512318
```

```
# Precno preverjanje
predicted <- vector()

for (i in 1:nrow(structuredData))
{
  # linearna regresija
  model <- lm(scoreDifference ~ . - isHomeWinner, structuredData[-i,])
  predicted[i] <- predict(model, structuredData[i,])
}
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading
```


[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]


```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]


```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]


```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```


[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```


[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```

[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```


[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```



```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```


[illegible]

[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```

[illegible]

[illegible]


```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```


[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]


```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```

[illegible]

[illegible]

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```



```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```


[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

```

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-
## deficient fit may be misleading

```

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]


```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

```
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading  
  
## Warning in predict.lm(model, structuredData[i, ]): prediction from a rank-  
## deficient fit may be misleading
```


[illegible]

[illegible]

[illegible]

[illegible]


```
plot(train$scoreDifference)
points(predicted, col="red")
```

```
mae(structuredData$scoreDifference, predicted)
```

```
## [1] 10.06551
```

```
mse(structuredData$scoreDifference, predicted)
```

```
## [1] 163.0578
```

```
rmae(structuredData$scoreDifference, predicted, mean(structuredData$scoreDifference))
```

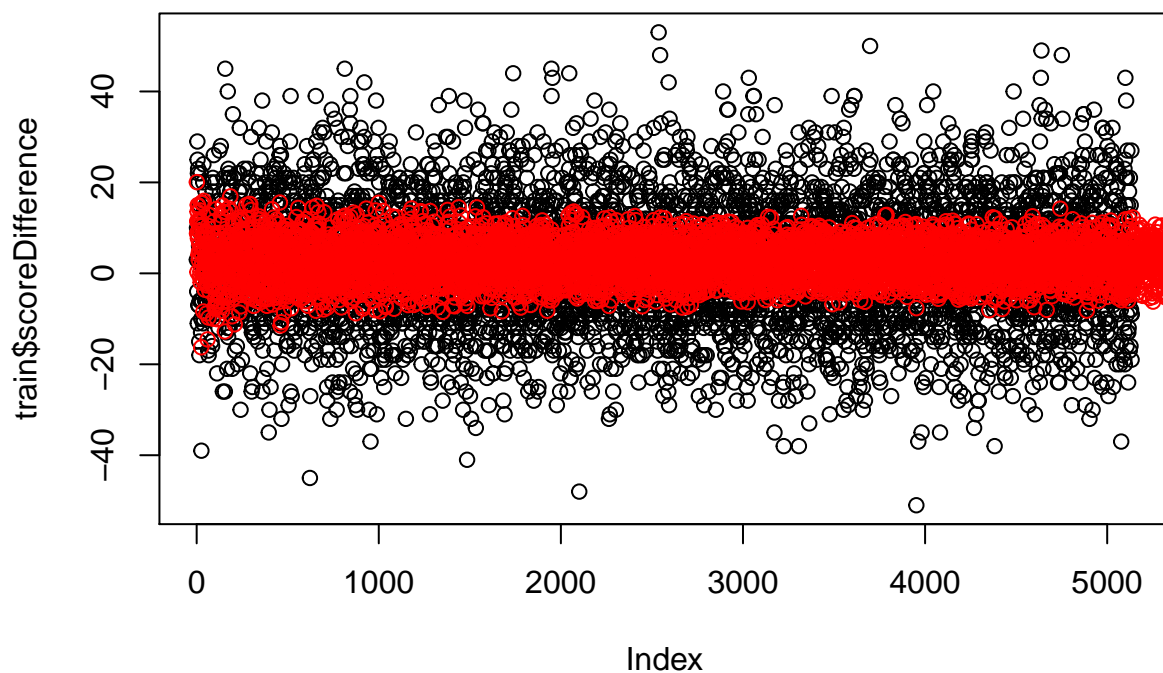
```
## [1] 0.9369234
```

```
rmse(structuredData$scoreDifference, predicted, mean(structuredData$scoreDifference))
```

```
## [1] 0.9031577
```

```
# K najbližjih sosedov
library(kknn)
```

```
## Warning: package 'kknn' was built under R version 4.0.5
```



```
knn.model <- kknn(scoreDifference ~ . - isHomeWinner, train, test, k = 5)
predicted <- fitted(knn.model)
mae(test$scoreDifference, predicted)
```

```
## [1] 11.9205
```

```
rmae(test$scoreDifference, predicted, mean(train$scoreDifference))
```

```
## [1] 1.100246
```