

FinalReport

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Introduction

Variable Selection

Our data comes from four different datasets. We used three of Riguang Wen's datasets from figshare.com – `players cv`, `players salary`, and `players stat`. We also used a dataset called `NBA RS 2020-1950 Stats` uploaded to zenodo.org by Pablo Gomez and Sandra Giral. From these datasets, we considered the following variables.

Variable	Description	Type	Source
Player	Name of player	Character	<code>players stat</code>
Age	Age of player	Numeric	<code>players stat</code>
G	Games played	Numeric	<code>players stat</code>
GS	Games started	Numeric	<code>players stat</code>
MP	Minutes played	Numeric	<code>players stat</code>
PER	Player efficiency rating	Numeric	<code>players stat</code>
PTS	Points	Numeric	<code>NBA RS 2020-1950 Stats</code>
X3PAr	3PA/FGA	Numeric	<code>players stat</code>
FTr	FTA/FGA	Numeric	<code>players stat</code>
TS	True shooting percentage	Numeric	<code>NBA RS 2020-1950 Stats</code>
ORB	Offensive rebounds	Numeric	<code>players stat</code>
DRB	Defensive rebounds	Numeric	<code>players stat</code>
TRB	Total rebounds	Numeric	<code>players stat</code>
AST	Assists	Numeric	<code>players stat</code>
STL	Steals	Numeric	<code>players stat</code>
BLK	Blocks	Numeric	<code>players stat</code>
TOV	Turnovers	Numeric	<code>players stat</code>
USG	Usage percentage	Numeric	<code>players stat</code>
ORtg	Offensive rating	Numeric	<code>players stat</code>
DRtg	Defensive rating	Numeric	<code>players stat</code>
OWS	Offensive win shares	Numeric	<code>players stat</code>
DWS	Defensive win shares	Numeric	<code>players stat</code>
WS	Win shares	Numeric	<code>players stat</code>
WS.48	Win shares per 48 minutes	Numeric	<code>players stat</code>
OBPM	Offensive box +/-	Numeric	<code>players stat</code>
DBPM	Defensive box +/-	Numeric	<code>players stat</code>
BPM	Box +/-	Numeric	<code>players stat</code>
VORP	Value over replacement player	Numeric	<code>players stat</code>
Pos	Position	Factor	<code>players salary</code>
Ht	Height in inches	Numeric	<code>players salary</code>
Wt	Weight in pounds	Numeric	<code>players salary</code>
PwrSix	Power Six College?	Indicator	<code>players cv</code>
International	International Player?	Indicator	<code>players cv</code>

Variable	Description	Type	Source
Salary	Salary in dollars	Numeric	players salary

Exploratory Data Analysis

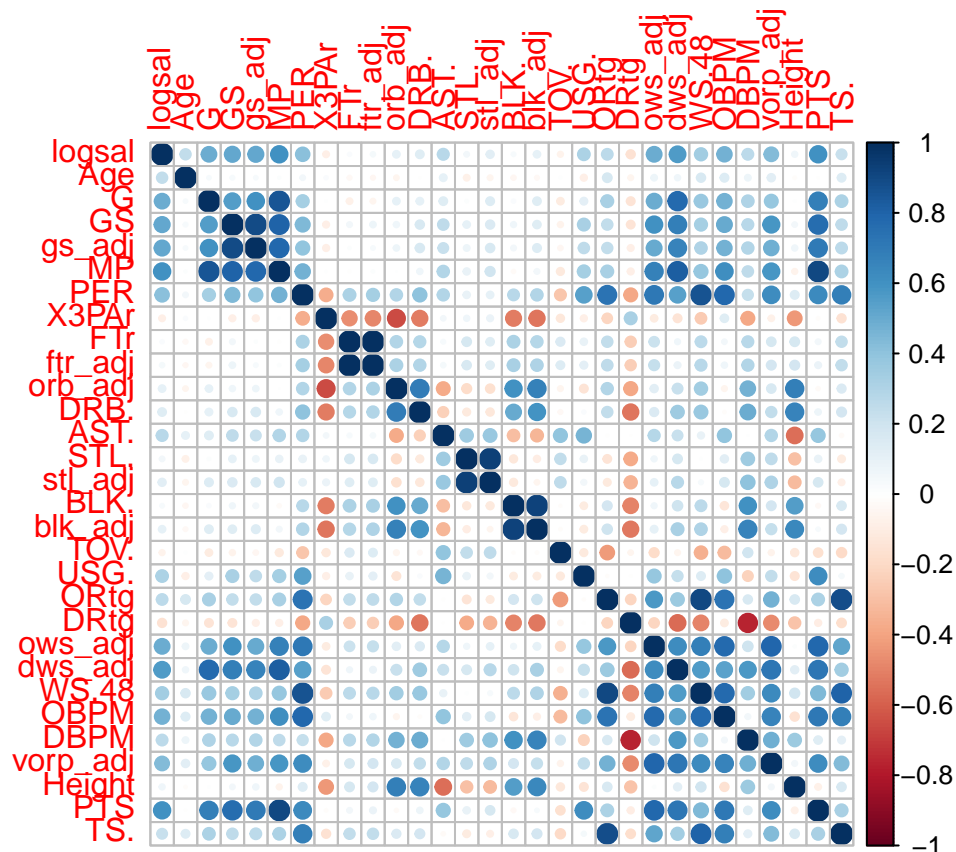
Immediately we can recognize that some variables are functions of others and therefore do not need to be considered. Specifically, $BPM = OBPM + DBPM$, so there is no need to include BPM in our model. Similarly, $WS = OWS + DWS$ and $TRB = ORB + DRB$, so we can exclude WS and TRB from consideration if we include OWS, DWS, ORB and DRB in our model.

```
data <- read.csv("data/PlayerData.csv")[,-1]
data_regressors <- data %>% mutate(logsal = log(SALARY)) %>%
  dplyr::select(logsal, Age, G, GS, gs_adj, MP, PER, X3PAR, FTr, ftr_adj, orb_adj, DRB., AST.,
               STL., stl_adj, BLK., blk_adj, TOV., USG., ORtg, DRtg, ows_adj, dws_adj, WS.48,
               OBPM, DBPM, vorp_adj, Pos, Height, PTS, TS., International, Conference)
attach(data_regressors)
Pos <- as.factor(Pos)
International <- as.factor(International)
Conference <- as.factor(Conference)

# Which variables did we transform and why?
```

Correlation Matrix

```
corrplot(cor(data_regressors[sapply(data_regressors, is.numeric)]))
```



```
cor(PTS, MP)
```

```
## [1] 0.902671
```

```
cor(WS.48, PER)
```

```
## [1] 0.8635319
```

```
cor(DBPM,DRtg)
```

```
## [1] -0.7600841
```

```
cor(ORtg, TS.)
```

```
## [1] 0.8880973
```

```
# Which did we remove from here and why?
```

Stepwise Regression Models

```
null = lm(logsal ~ 1, data = data_regressors)
```

```
full = lm(logsal ~ ., data = data_regressors)
```

```
summary(full)
```

```
##
```

```
## Call:
```

```
## lm(formula = logsal ~ ., data = data_regressors)
```

```
##
```

```
## Residuals:
```

```
##      Min       1Q   Median       3Q      Max  
## -2.93037 -0.45129  0.02252  0.55457  1.92358
```

```
##
```

```
## Coefficients:
```

```
##              Estimate Std. Error t value Pr(>|t|)  
## (Intercept)    6.9223878   6.2597694   1.106  0.26956  
## Age            0.0658913   0.0108324   6.083 3.13e-09 ***  
## G             -0.0151915   0.0058436  -2.600  0.00973 **  
## GS            -0.0035334   0.0043167  -0.819  0.41362  
## gs_adj         0.0644941   0.0732507   0.880  0.37922  
## MP             0.0007037   0.0003512   2.003  0.04591 *  
## PER            0.0144325   0.0745765   0.194  0.84666  
## X3PAr          0.5651446   0.5826956   0.970  0.33278  
## FTr            3.1948760   3.5367641   0.903  0.36698  
## ftr_adj       -4.7728624   4.8887869  -0.976  0.32960  
## orb_adj        0.2109426   0.1684717   1.252  0.21138  
## DRB.          -0.0293783   0.0188109  -1.562  0.11926  
## AST.           0.0069214   0.0143750   0.481  0.63048  
## STL.          -0.3266357   0.2020001  -1.617  0.10679  
## stl_adj        0.7566000   0.5353263   1.413  0.15845  
## BLK.          -0.0416043   0.1023922  -0.406  0.68476  
## blk_adj       -0.2396468   0.3076569  -0.779  0.43655  
## TOV.           0.0133228   0.0258305   0.516  0.60634  
## USG.           0.0629825   0.0417427   1.509  0.13226  
## ORtg           0.0373541   0.0240972   1.550  0.12202  
## DRtg          -0.0019474   0.0503454  -0.039  0.96917  
## ows_adj        3.6511542   1.4552426   2.509  0.01257 *
```

```
## dws_adj          0.6715446  0.4291937   1.565  0.11858
## WS.48            -5.9401485  5.4084826  -1.098  0.27284
## OBPM             0.0851882  0.1011619   0.842  0.40031
## DBPM             0.2167661  0.0778108   2.786  0.00563 **
## vorp_adj        -0.8227695  0.2011736  -4.090  5.37e-05 ***
## PosC-F           0.3722169  0.3424711   1.087  0.27786
## PosF            -0.1907207  0.1989507  -0.959  0.33841
## PosF-C          -0.0276510  0.2262794  -0.122  0.90281
## PosF-G          -0.4041900  0.3087133  -1.309  0.19131
## PosG            -0.6543956  0.3134875  -2.087  0.03758 *
## PosG-F          -0.5288633  0.2845591  -1.859  0.06394 .
## Height           0.0086920  0.0314421   0.276  0.78237
## PTS            -0.0001651  0.0005581  -0.296  0.76755
## TS.            -2.6400936  3.1085608  -0.849  0.39630
## InternationalYes -0.0208253  0.1133142  -0.184  0.85429
## ConferenceMulti  -0.6859086  0.1600436  -4.286  2.36e-05 ***
## ConferenceWest  -0.0851645  0.0997584  -0.854  0.39386
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8355 on 346 degrees of freedom
## Multiple R-squared:  0.5659, Adjusted R-squared:  0.5182
## F-statistic: 11.87 on 38 and 346 DF,  p-value: < 2.2e-16
```

```
bic = log(nrow(data_regressors))
stepbic_model <- stepAIC(object = null, scope = list(lower = null, upper = full),
direction = "both", k = bic)
```

```
## Start:  AIC=147.73
## logsal ~ 1
##
##           Df Sum of Sq  RSS    AIC
## + MP       1   205.936 350.46 -24.281
## + PTS       1   204.939 351.46 -23.186
## + dws_adj   1   177.276 379.12   5.983
## + GS        1   150.239 406.16  32.505
## + gs_adj    1   148.593 407.80  34.062
## + ows_adj   1   137.559 418.84  44.340
## + G         1   134.283 422.11  47.339
## + OBPM      1   126.131 430.27  54.704
## + vorp_adj  1   103.261 453.14  74.643
## + PER       1    96.356 460.04  80.465
## + WS.48     1    65.572 490.83 105.402
## + USG.      1    55.407 500.99 113.294
## + AST.      1    43.172 513.23 122.584
## + DBPM      1    40.236 516.16 124.779
## + ORtg      1    38.938 517.46 125.746
## + Age       1    33.751 522.65 129.587
## + TS.       1    28.177 528.22 133.671
## + Conference 2    33.141 523.26 135.989
## + DRtg      1    13.737 542.66 144.054
## + DRB.      1    10.839 545.56 146.105
## + stl_adj   1     8.592 547.81 147.687
## <none>              556.40 147.726
## + orb_adj   1     5.968 550.43 149.527
```

```

## + blk_adj      1      5.623 550.77 149.768
## + X3PAr        1      3.600 552.80 151.180
## + International 1      2.977 553.42 151.613
## + Height       1      2.359 554.04 152.043
## + TOV.         1      2.173 554.22 152.172
## + STL.         1      1.585 554.81 152.581
## + ftr_adj      1      1.264 555.13 152.803
## + BLK.         1      0.669 555.73 153.216
## + FTr          1      0.451 555.95 153.366
## + Pos          6     15.293 541.10 172.715
##
## Step:  AIC=-24.28
## logsal ~ MP
##
##           Df Sum of Sq  RSS    AIC
## + Age      1    31.599 318.86 -54.706
## + PER      1    11.787 338.67 -31.498
## + PTS      1    10.016 340.45 -29.491
## + OBPM     1     8.947 341.51 -28.284
## + DBPM     1     7.922 342.54 -27.130
## + ows_adj  1     7.724 342.74 -26.908
## + USG.     1     7.500 342.96 -26.655
## + WS.48    1     7.398 343.06 -26.541
## + dws_adj  1     7.237 343.23 -26.360
## + DRtg     1     6.013 344.45 -24.990
## + Height   1     5.945 344.52 -24.914
## + orb_adj  1     5.930 344.53 -24.898
## + AST.     1     5.664 344.80 -24.600
## <none>                350.46 -24.281
## + DRB.     1     5.362 345.10 -24.263
## + Conference 2     9.952 340.51 -23.465
## + vorp_adj  1     4.560 345.90 -23.370
## + X3PAr     1     3.805 346.66 -22.530
## + ORtg     1     2.919 347.54 -21.547
## + blk_adj  1     2.426 348.04 -21.001
## + gs_adj   1     2.122 348.34 -20.666
## + International 1     1.745 348.72 -20.249
## + G        1     1.657 348.81 -20.151
## + BLK.     1     1.508 348.95 -19.987
## + GS       1     1.217 349.24 -19.666
## + ftr_adj  1     0.799 349.66 -19.207
## + TS.      1     0.672 349.79 -19.066
## + FTr      1     0.618 349.84 -19.007
## + TOV.     1     0.051 350.41 -18.383
## + stl_adj  1     0.037 350.42 -18.368
## + STL.     1     0.014 350.45 -18.343
## + Pos      6    13.359 337.10 -3.524
## - MP       1   205.936 556.40 147.726
##
## Step:  AIC=-54.71
## logsal ~ MP + Age
##
##           Df Sum of Sq  RSS    AIC
## + Conference 2    16.682 302.18 -63.488

```

```

## + PTS          1    11.385 307.48 -62.751
## + USG.          1    10.980 307.88 -62.243
## + PER           1     9.861 309.00 -60.847
## + orb_adj       1     7.474 311.39 -57.884
## + Height        1     6.376 312.49 -56.529
## + DBPM           1     5.690 313.17 -55.685
## + DRB.          1     5.453 313.41 -55.394
## + ows_adj       1     5.162 313.70 -55.037
## <none>          1          318.86 -54.706
## + dws_adj       1     4.642 314.22 -54.399
## + DRtg          1     4.605 314.26 -54.353
## + X3PAr         1     4.420 314.44 -54.127
## + OBPM           1     4.154 314.71 -53.801
## + WS.48         1     3.223 315.64 -52.663
## + blk_adj       1     3.153 315.71 -52.579
## + AST.          1     3.140 315.72 -52.563
## + G             1     2.245 316.62 -51.473
## + BLK.          1     2.202 316.66 -51.421
## + vorp_adj      1     1.725 317.14 -50.841
## + gs_adj        1     1.590 317.27 -50.677
## + International  1     1.579 317.28 -50.665
## + ftr_adj       1     1.258 317.61 -50.274
## + FTr           1     1.021 317.84 -49.988
## + GS            1     0.709 318.15 -49.609
## + ORtg          1     0.486 318.38 -49.340
## + stl_adj       1     0.273 318.59 -49.083
## + STL.          1     0.113 318.75 -48.889
## + TOV.          1     0.028 318.84 -48.786
## + TS.           1     0.000 318.86 -48.753
## + Pos           6    12.036 306.83 -33.800
## - Age           1    31.599 350.46 -24.281
## - MP            1   203.784 522.65 129.587
##
## Step:  AIC=-63.49
## logsal ~ MP + Age + Conference
##
##           Df Sum of Sq  RSS    AIC
## + USG.      1    11.271 290.91 -72.170
## + PTS       1    11.175 291.01 -72.043
## + PER       1    10.001 292.18 -70.493
## + orb_adj   1     6.275 295.91 -65.614
## + OBPM      1     4.879 297.30 -63.801
## + ows_adj   1     4.828 297.35 -63.735
## <none>      1          302.18 -63.488
## + Height    1     4.391 297.79 -63.170
## + X3PAr     1     4.033 298.15 -62.707
## + AST.      1     3.904 298.28 -62.541
## + DRB.      1     3.730 298.45 -62.316
## + DBPM      1     3.300 298.88 -61.762
## + WS.48     1     2.974 299.21 -61.342
## + dws_adj   1     2.808 299.37 -61.129
## + DRtg      1     2.501 299.68 -60.734
## + gs_adj    1     2.470 299.71 -60.694
## + G         1     2.230 299.95 -60.387

```

```

## + ftr_adj      1      1.755 300.43 -59.777
## + blk_adj      1      1.752 300.43 -59.773
## + FTr          1      1.465 300.72 -59.406
## + BLK.         1      1.097 301.08 -58.935
## + GS           1      0.904 301.28 -58.689
## + vorp_adj     1      0.805 301.38 -58.561
## + ORtg         1      0.703 301.48 -58.431
## + International 1      0.541 301.64 -58.224
## + stl_adj      1      0.480 301.70 -58.147
## + STL.         1      0.206 301.97 -57.798
## + TOV.         1      0.070 302.11 -57.624
## + TS.          1      0.054 302.13 -57.603
## - Conference   2     16.682 318.86 -54.706
## + Pos          6      9.929 292.25 -40.631
## - Age          1     38.329 340.51 -23.465
## - MP           1    176.059 478.24 107.307
##
## Step: AIC=-72.17
## logsal ~ MP + Age + Conference + USG.
##
##           Df Sum of Sq  RSS    AIC
## + DBPM      1      9.830 281.08 -79.451
## + orb_adj   1      9.488 281.42 -78.982
## + Height    1      6.623 284.29 -75.083
## <none>                290.91 -72.170
## + dws_adj   1      3.686 287.22 -71.126
## + DRB.      1      3.680 287.23 -71.118
## + blk_adj   1      3.270 287.64 -70.569
## + PER       1      3.148 287.76 -70.405
## + X3PAr     1      2.896 288.01 -70.068
## + gs_adj    1      2.744 288.17 -69.865
## + DRtg      1      2.668 288.24 -69.763
## + WS.48     1      2.627 288.28 -69.708
## + ows_adj   1      2.068 288.84 -68.963
## + BLK.      1      1.972 288.94 -68.835
## + OBPM      1      1.647 289.26 -68.402
## + ORtg      1      1.586 289.32 -68.321
## + PTS       1      1.253 289.66 -67.879
## + ftr_adj   1      0.913 290.00 -67.427
## + FTr       1      0.760 290.15 -67.224
## + International 1      0.597 290.31 -67.007
## + stl_adj   1      0.538 290.37 -66.929
## + vorp_adj  1      0.412 290.50 -66.762
## + AST.      1      0.395 290.51 -66.740
## + GS        1      0.381 290.53 -66.721
## + TOV.      1      0.292 290.62 -66.603
## + TS.       1      0.183 290.73 -66.459
## + G         1      0.085 290.82 -66.329
## + STL.      1      0.065 290.84 -66.302
## - USG.      1     11.271 302.18 -63.488
## - Conference 2     16.974 307.88 -62.243
## + Pos       6     11.647 279.26 -52.181
## - Age       1     42.217 333.13 -25.951
## - MP        1    129.044 419.95  63.223

```

```
##
## Step:  AIC=-79.45
## logsal ~ MP + Age + Conference + USG. + DBPM
##
##           Df Sum of Sq  RSS    AIC
## <none>                281.08 -79.451
## + orb_adj            1    3.238 277.84 -77.958
## + Height             1    2.374 278.71 -76.763
## + DRtg               1    2.280 278.80 -76.632
## + OBPM               1    2.055 279.02 -76.323
## + ORtg              1    1.287 279.79 -75.264
## + gs_adj             1    1.262 279.82 -75.230
## + STL.              1    1.247 279.83 -75.210
## + ows_adj            1    1.033 280.05 -74.915
## + vorp_adj           1    0.852 280.23 -74.666
## + PTS               1    0.819 280.26 -74.621
## + BLK.              1    0.620 280.46 -74.347
## + WS.48              1    0.518 280.56 -74.207
## + International     1    0.514 280.57 -74.202
## + PER               1    0.490 280.59 -74.169
## + stl_adj            1    0.398 280.68 -74.042
## - Conference        2   13.017 294.10 -73.928
## + G                 1    0.247 280.83 -73.835
## + blk_adj            1    0.182 280.90 -73.747
## + AST.              1    0.174 280.91 -73.735
## + TS.               1    0.151 280.93 -73.705
## + DRB.              1    0.106 280.97 -73.642
## + dws_adj           1    0.099 280.98 -73.633
## + X3PAr             1    0.082 281.00 -73.609
## + FTr               1    0.071 281.01 -73.594
## + ftr_adj           1    0.052 281.03 -73.569
## + TOV.              1    0.025 281.05 -73.531
## + GS                1    0.008 281.07 -73.508
## - DBPM              1    9.830 290.91 -72.170
## - USG.              1   17.801 298.88 -61.762
## + Pos               6    5.519 275.56 -51.366
## - Age               1   39.226 320.31 -35.108
## - MP                1   93.538 374.62  25.195
```

```
steptic_model <- stepAIC(object = null, scope = list(lower = null, upper = full),
direction = "both", k = 2)
```

```
## Start:  AIC=143.77
## logsal ~ 1
##
##           Df Sum of Sq  RSS    AIC
## + MP            1   205.936 350.46 -32.187
## + PTS           1   204.939 351.46 -31.093
## + dws_adj       1   177.276 379.12  -1.924
## + GS            1   150.239 406.16  24.598
## + gs_adj        1   148.593 407.80  26.155
## + ows_adj       1   137.559 418.84  36.434
## + G             1   134.283 422.11  39.433
## + OBPM          1   126.131 430.27  46.797
## + vorp_adj      1   103.261 453.14  66.736
```



```

## + PER          1    96.356 460.04  72.559
## + WS.48        1    65.572 490.83  97.496
## + USG.         1    55.407 500.99 105.388
## + AST.         1    43.172 513.23 114.677
## + DBPM         1    40.236 516.16 116.873
## + ORtg         1    38.938 517.46 117.840
## + Age          1    33.751 522.65 121.680
## + Conference   2    33.141 523.26 124.130
## + TS.          1    28.177 528.22 125.765
## + DRtg         1    13.737 542.66 136.148
## + DRB.         1    10.839 545.56 138.198
## + stl_adj      1     8.592 547.81 139.781
## + orb_adj      1     5.968 550.43 141.621
## + blk_adj      1     5.623 550.77 141.862
## + X3PAr        1     3.600 552.80 143.273
## + International 1     2.977 553.42 143.707
## <none>          556.40 143.772
## + Height       1     2.359 554.04 144.136
## + TOV.         1     2.173 554.22 144.266
## + STL.         1     1.585 554.81 144.674
## + ftr_adj      1     1.264 555.13 144.897
## + Pos          6    15.293 541.10 145.042
## + BLK.         1     0.669 555.73 145.309
## + FTr          1     0.451 555.95 145.460
##
## Step:  AIC=-32.19
## logsal ~ MP
##
##           Df Sum of Sq  RSS    AIC
## + Age      1    31.599 318.86 -66.566
## + PER      1    11.787 338.67 -43.358
## + PTS      1    10.016 340.45 -41.350
## + OBPM     1     8.947 341.51 -40.144
## + Conference 2     9.952 340.51 -39.278
## + DBPM     1     7.922 342.54 -38.990
## + ows_adj  1     7.724 342.74 -38.767
## + USG.     1     7.500 342.96 -38.515
## + WS.48    1     7.398 343.06 -38.401
## + dws_adj  1     7.237 343.23 -38.220
## + DRtg     1     6.013 344.45 -36.850
## + Height   1     5.945 344.52 -36.773
## + orb_adj  1     5.930 344.53 -36.758
## + AST.     1     5.664 344.80 -36.460
## + DRB.     1     5.362 345.10 -36.123
## + vorp_adj 1     4.560 345.90 -35.230
## + Pos      6    13.359 337.10 -35.150
## + X3PAr    1     3.805 346.66 -34.390
## + ORtg     1     2.919 347.54 -33.407
## + blk_adj  1     2.426 348.04 -32.861
## + gs_adj   1     2.122 348.34 -32.525
## <none>      350.46 -32.187
## + International 1     1.745 348.72 -32.109
## + G        1     1.657 348.81 -32.011
## + BLK.     1     1.508 348.95 -31.847

```

```

## + GS          1      1.217 349.24 -31.526
## + ftr_adj     1      0.799 349.66 -31.066
## + TS.         1      0.672 349.79 -30.926
## + FTr        1      0.618 349.84 -30.867
## + TOV.        1      0.051 350.41 -30.243
## + stl_adj     1      0.037 350.42 -30.228
## + STL.        1      0.014 350.45 -30.202
## - MP          1    205.936 556.40 143.772
##
## Step:  AIC=-66.57
## logsal ~ MP + Age
##
##           Df Sum of Sq  RSS    AIC
## + Conference  2     16.682 302.18 -83.254
## + PTS         1     11.385 307.48 -78.564
## + USG.        1     10.980 307.88 -78.056
## + PER         1      9.861 309.00 -76.660
## + orb_adj     1      7.474 311.39 -73.697
## + Height      1      6.376 312.49 -72.342
## + DBPM        1      5.690 313.17 -71.498
## + DRB.        1      5.453 313.41 -71.207
## + ows_adj     1      5.162 313.70 -70.850
## + dws_adj     1      4.642 314.22 -70.212
## + DRtg        1      4.605 314.26 -70.166
## + X3PAr       1      4.420 314.44 -69.940
## + OBPM        1      4.154 314.71 -69.614
## + Pos         6     12.036 306.83 -69.379
## + WS.48       1      3.223 315.64 -68.476
## + blk_adj     1      3.153 315.71 -68.392
## + AST.        1      3.140 315.72 -68.376
## + G           1      2.245 316.62 -67.286
## + BLK.        1      2.202 316.66 -67.234
## + vorp_adj    1      1.725 317.14 -66.654
## <none>                318.86 -66.566
## + gs_adj      1      1.590 317.27 -66.490
## + International 1      1.579 317.28 -66.478
## + ftr_adj     1      1.258 317.61 -66.087
## + FTr        1      1.021 317.84 -65.801
## + GS          1      0.709 318.15 -65.422
## + ORtg        1      0.486 318.38 -65.153
## + stl_adj     1      0.273 318.59 -64.896
## + STL.        1      0.113 318.75 -64.702
## + TOV.        1      0.028 318.84 -64.599
## + TS.         1      0.000 318.86 -64.566
## - Age         1     31.599 350.46 -32.187
## - MP          1    203.784 522.65 121.680
##
## Step:  AIC=-83.25
## logsal ~ MP + Age + Conference
##
##           Df Sum of Sq  RSS    AIC
## + USG.        1     11.271 290.91 -95.889
## + PTS         1     11.175 291.01 -95.762
## + PER         1     10.001 292.18 -94.212

```

```

## + orb_adj      1      6.275 295.91 -89.334
## + OBPM         1      4.879 297.30 -87.521
## + ows_adj      1      4.828 297.35 -87.455
## + Height       1      4.391 297.79 -86.889
## + X3PAr        1      4.033 298.15 -86.427
## + AST.         1      3.904 298.28 -86.261
## + DRB.         1      3.730 298.45 -86.036
## + DBPM         1      3.300 298.88 -85.482
## + WS.48        1      2.974 299.21 -85.061
## + dws_adj      1      2.808 299.37 -84.849
## + DRtg         1      2.501 299.68 -84.454
## + gs_adj       1      2.470 299.71 -84.413
## + Pos          6      9.929 292.25 -84.117
## + G            1      2.230 299.95 -84.106
## + ftr_adj      1      1.755 300.43 -83.496
## + blk_adj      1      1.752 300.43 -83.493
## <none>          302.18 -83.254
## + FTr          1      1.465 300.72 -83.125
## + BLK.         1      1.097 301.08 -82.655
## + GS           1      0.904 301.28 -82.408
## + vorp_adj     1      0.805 301.38 -82.281
## + ORtg         1      0.703 301.48 -82.151
## + International 1      0.541 301.64 -81.944
## + stl_adj      1      0.480 301.70 -81.867
## + STL.         1      0.206 301.97 -81.517
## + TOV.         1      0.070 302.11 -81.343
## + TS.          1      0.054 302.13 -81.323
## - Conference   2     16.682 318.86 -66.566
## - Age          1     38.329 340.51 -39.278
## - MP           1    176.059 478.24  91.494
##
## Step:  AIC=-95.89
## logsal ~ MP + Age + Conference + USG.
##
##           Df Sum of Sq  RSS      AIC
## + DBPM      1      9.830 281.08 -107.123
## + orb_adj    1      9.488 281.42 -106.655
## + Height     1      6.623 284.29 -102.755
## + Pos        6     11.647 279.26  -99.620
## + dws_adj    1      3.686 287.22  -98.798
## + DRB.       1      3.680 287.23  -98.790
## + blk_adj    1      3.270 287.64  -98.242
## + PER        1      3.148 287.76  -98.078
## + X3PAr      1      2.896 288.01  -97.740
## + gs_adj     1      2.744 288.17  -97.538
## + DRtg       1      2.668 288.24  -97.436
## + WS.48      1      2.627 288.28  -97.381
## + ows_adj    1      2.068 288.84  -96.635
## + BLK.       1      1.972 288.94  -96.508
## + OBPM       1      1.647 289.26  -96.075
## + ORtg       1      1.586 289.32  -95.994
## <none>          290.91  -95.889
## + PTS        1      1.253 289.66  -95.551
## + ftr_adj    1      0.913 290.00  -95.100

```

```

## + FTr          1      0.760 290.15 -94.897
## + International 1      0.597 290.31 -94.680
## + stl_adj       1      0.538 290.37 -94.602
## + vorp_adj      1      0.412 290.50 -94.435
## + AST.          1      0.395 290.51 -94.413
## + GS            1      0.381 290.53 -94.394
## + TOV.          1      0.292 290.62 -94.276
## + TS.           1      0.183 290.73 -94.131
## + G             1      0.085 290.82 -94.002
## + STL.          1      0.065 290.84 -93.975
## - USG.          1     11.271 302.18 -83.254
## - Conference    2     16.974 307.88 -78.056
## - Age           1     42.217 333.13 -45.717
## - MP            1    129.044 419.95  43.457
##
## Step:  AIC=-107.12
## logsal ~ MP + Age + Conference + USG. + DBPM
##
##           Df Sum of Sq  RSS      AIC
## + orb_adj    1      3.238 277.84 -109.584
## + Height     1      2.374 278.71 -108.389
## + DRtg       1      2.280 278.80 -108.258
## + OBPM       1      2.055 279.02 -107.949
## <none>                281.08 -107.123
## + ORtg       1      1.287 279.79 -106.890
## + gs_adj     1      1.262 279.82 -106.855
## + STL.       1      1.247 279.83 -106.835
## + ows_adj    1      1.033 280.05 -106.541
## + vorp_adj   1      0.852 280.23 -106.292
## + PTS        1      0.819 280.26 -106.247
## + BLK.       1      0.620 280.46 -105.973
## + WS.48      1      0.518 280.56 -105.833
## + International 1      0.514 280.57 -105.828
## + PER        1      0.490 280.59 -105.795
## + stl_adj    1      0.398 280.68 -105.668
## + G          1      0.247 280.83 -105.461
## + blk_adj    1      0.182 280.90 -105.373
## + AST.       1      0.174 280.91 -105.361
## + TS.        1      0.151 280.93 -105.330
## + DRB.       1      0.106 280.97 -105.268
## + dws_adj    1      0.099 280.98 -105.259
## + X3PAr      1      0.082 281.00 -105.235
## + FTr        1      0.071 281.01 -105.220
## + ftr_adj    1      0.052 281.03 -105.195
## + TOV.       1      0.025 281.05 -105.157
## + GS         1      0.008 281.07 -105.134
## + Pos        6      5.519 275.56 -102.758
## - DBPM       1      9.830 290.91 -95.889
## - Conference  2     13.017 294.10 -93.695
## - USG.       1     17.801 298.88 -85.482
## - Age        1     39.226 320.31 -58.828
## - MP         1     93.538 374.62   1.475
##
## Step:  AIC=-109.58

```

```

## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj
##
##           Df Sum of Sq   RSS       AIC
## + BLK.      1      2.920 274.92 -111.652
## + blk_adj   1      2.638 275.20 -111.257
## + DRtg      1      2.508 275.33 -111.075
## + OBPM      1      2.066 275.78 -110.458
## + AST.      1      1.870 275.97 -110.184
## <none>             277.84 -109.584
## + gs_adj    1      1.107 276.73 -109.121
## + DRB.      1      0.945 276.90 -108.896
## + X3PAr     1      0.915 276.93 -108.854
## + vorp_adj  1      0.880 276.96 -108.806
## + PTS       1      0.612 277.23 -108.433
## + G         1      0.554 277.29 -108.352
## + ows_adj   1      0.517 277.32 -108.302
## + FTr       1      0.371 277.47 -108.098
## + ftr_adj   1      0.366 277.48 -108.092
## + ORtg      1      0.328 277.51 -108.038
## + Height    1      0.316 277.53 -108.022
## + dws_adj   1      0.276 277.57 -107.967
## + International 1      0.229 277.61 -107.901
## + STL.      1      0.082 277.76 -107.697
## + stl_adj   1      0.057 277.78 -107.663
## + TOV.      1      0.051 277.79 -107.656
## + WS.48     1      0.029 277.81 -107.624
## + TS.       1      0.004 277.84 -107.590
## + GS        1      0.001 277.84 -107.586
## + PER       1      0.000 277.84 -107.585
## - orb_adj   1      3.238 281.08 -107.123
## - DBPM      1      3.580 281.42 -106.655
## + Pos       6      2.381 275.46 -100.898
## - Conference 2     13.274 291.12  -95.616
## - USG.      1     17.635 295.48  -87.892
## - Age       1     41.275 319.12  -58.260
## - MP        1     96.561 374.40    3.254
##
## Step:  AIC=-111.65
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK.
##
##           Df Sum of Sq   RSS       AIC
## + DRtg      1      2.856 272.07 -113.672
## + OBPM      1      1.563 273.36 -111.847
## <none>             274.92 -111.652
## + STL.      1      1.238 273.68 -111.389
## + gs_adj    1      1.170 273.75 -111.294
## + vorp_adj  1      1.138 273.78 -111.249
## + Height    1      1.010 273.91 -111.069
## + DRB.      1      0.969 273.95 -111.011
## + AST.      1      0.786 274.14 -110.754
## + PTS       1      0.692 274.23 -110.622
## + G         1      0.604 274.32 -110.498
## + ORtg      1      0.603 274.32 -110.498
## + dws_adj   1      0.560 274.36 -110.436

```

```

## + X3PAr      1      0.551 274.37 -110.424
## + ows_adj    1      0.502 274.42 -110.356
## + International 1      0.360 274.56 -110.156
## + stl_adj    1      0.331 274.59 -110.115
## + ftr_adj    1      0.237 274.68 -109.984
## + FTr        1      0.228 274.69 -109.971
## + TS.        1      0.155 274.77 -109.869
## + blk_adj    1      0.099 274.82 -109.790
## + PER        1      0.078 274.84 -109.761
## + WS.48      1      0.067 274.85 -109.746
## + GS         1      0.003 274.92 -109.656
## + TOV.       1      0.001 274.92 -109.652
## - BLK.       1      2.920 277.84 -109.584
## - orb_adj    1      5.538 280.46 -105.973
## + Pos        6      4.241 270.68 -105.637
## - DBPM       1      6.231 281.15 -105.024
## - Conference  2     13.578 288.50 -97.091
## - USG.       1     19.547 294.47 -87.208
## - Age        1     39.589 314.51 -61.857
## - MP         1     82.811 357.73 -12.281
##
## Step: AIC=-113.67
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg
##
##           Df Sum of Sq  RSS      AIC
## + OBPM      1      2.536 269.53 -115.278
## + ORtg      1      1.800 270.27 -114.228
## + WS.48     1      1.591 270.47 -113.931
## <none>                272.07 -113.672
## + ows_adj    1      1.079 270.99 -113.202
## + Height     1      0.993 271.07 -113.080
## + PER        1      0.863 271.20 -112.896
## + X3PAr      1      0.845 271.22 -112.870
## + STL.       1      0.808 271.26 -112.817
## + TS.        1      0.773 271.29 -112.768
## + PTS        1      0.769 271.30 -112.762
## + International 1      0.611 271.45 -112.538
## + gs_adj     1      0.611 271.45 -112.538
## + AST.       1      0.394 271.67 -112.230
## + vorp_adj   1      0.392 271.67 -112.227
## + dws_adj    1      0.391 271.67 -112.226
## + ftr_adj    1      0.374 271.69 -112.203
## + DRB.       1      0.321 271.74 -112.127
## + FTr        1      0.303 271.76 -112.102
## + G          1      0.290 271.78 -112.083
## + stl_adj    1      0.263 271.80 -112.044
## + TOV.       1      0.134 271.93 -111.862
## + blk_adj    1      0.116 271.95 -111.837
## + GS         1      0.000 272.06 -111.673
## - DRtg      1      2.856 274.92 -111.652
## - BLK.       1      3.268 275.33 -111.075
## + Pos        6      4.732 267.33 -108.427
## - orb_adj    1      6.021 278.09 -107.245

```

```

## - DBPM          1      8.677 280.74 -103.585
## - Conference    2     14.327 286.39 -97.913
## - USG.          1     22.348 294.41 -85.280
## - Age           1     40.455 312.52 -62.301
## - MP            1     64.976 337.04 -33.219
##
## Step:  AIC=-115.28
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg + OBPM
##
##           Df Sum of Sq  RSS      AIC
## + vorp_adj  1      2.994 266.54 -117.579
## + Height    1      1.421 268.11 -115.313
## <none>                269.53 -115.278
## + STL.      1      1.007 268.52 -114.719
## + PER       1      0.711 268.82 -114.296
## + International 1      0.682 268.85 -114.254
## + ftr_adj   1      0.598 268.93 -114.134
## + gs_adj    1      0.584 268.94 -114.113
## + FTr       1      0.495 269.03 -113.986
## + stl_adj   1      0.440 269.09 -113.908
## + dws_adj   1      0.396 269.13 -113.845
## + X3PAr     1      0.327 269.20 -113.746
## - OBPM      1      2.536 272.06 -113.672
## + WS.48     1      0.213 269.32 -113.582
## + TS.       1      0.193 269.34 -113.554
## + G         1      0.185 269.35 -113.542
## - BLK.      1      2.660 272.19 -113.497
## + DRB.      1      0.126 269.40 -113.458
## + AST.      1      0.097 269.43 -113.416
## + blk_adj   1      0.058 269.47 -113.361
## + PTS       1      0.050 269.48 -113.350
## + TOV.      1      0.023 269.51 -113.311
## + ows_adj   1      0.014 269.51 -113.299
## + GS        1      0.003 269.53 -113.283
## + ORtg      1      0.001 269.53 -113.280
## - DRtg      1      3.829 273.36 -111.847
## + Pos       6      5.488 264.04 -111.199
## - orb_adj   1      5.737 275.27 -109.169
## - DBPM      1      9.708 279.24 -103.655
## - Conference 2     14.888 284.42 -98.579
## - USG.      1     18.840 288.37 -91.266
## - MP        1     35.120 304.65 -70.122
## - Age       1     35.311 304.84 -69.880
##
## Step:  AIC=-117.58
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg + OBPM + vorp_adj
##
##           Df Sum of Sq  RSS      AIC
## + G         1      1.996 264.54 -118.473
## + ows_adj   1      1.693 264.84 -118.031
## + Height    1      1.409 265.13 -117.620
## <none>                266.54 -117.579

```

```

## + PER          1      0.984 265.55 -117.003
## + dws_adj      1      0.984 265.55 -117.003
## + STL.         1      0.915 265.62 -116.902
## + gs_adj       1      0.594 265.94 -116.437
## + International 1      0.590 265.94 -116.432
## + WS.48        1      0.541 265.99 -116.361
## + ftr_adj      1      0.485 266.05 -116.279
## + X3PAr        1      0.464 266.07 -116.249
## + stl_adj      1      0.408 266.13 -116.168
## - DRtg         1      2.398 268.93 -116.131
## + TS.          1      0.380 266.15 -116.128
## + FTr          1      0.378 266.16 -116.125
## + PTS          1      0.356 266.18 -116.093
## + GS           1      0.248 266.29 -115.937
## + AST.         1      0.166 266.37 -115.819
## + DRB.         1      0.148 266.39 -115.792
## + TOV.         1      0.141 266.39 -115.783
## + ORtg         1      0.109 266.43 -115.736
## - BLK.         1      2.685 269.22 -115.720
## + blk_adj      1      0.092 266.44 -115.712
## - vorp_adj     1      2.994 269.53 -115.278
## + Pos          6      5.914 260.62 -114.218
## - OBPM         1      5.138 271.67 -112.227
## - orb_adj      1      5.774 272.31 -111.327
## - DBPM         1     11.498 278.03 -103.319
## - Conference   2     15.545 282.08 -99.755
## - USG.         1     19.472 286.01 -92.432
## - Age          1     36.241 302.78 -70.495
## - MP           1     37.906 304.44 -68.384
##
## Step:  AIC=-118.47
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg + OBPM + vorp_adj + G
##
##           Df Sum of Sq  RSS      AIC
## + dws_adj      1      2.688 261.85 -120.404
## + ows_adj      1      1.977 262.56 -119.361
## - DRtg         1      1.210 265.75 -118.716
## + PER          1      1.523 263.02 -118.695
## <none>                264.54 -118.473
## + STL.         1      1.347 263.19 -118.438
## + Height       1      1.238 263.30 -118.279
## + ftr_adj      1      0.828 263.71 -117.679
## + X3PAr        1      0.808 263.73 -117.651
## - G            1      1.996 266.54 -117.579
## + FTr          1      0.709 263.83 -117.506
## + International 1      0.663 263.88 -117.439
## + WS.48        1      0.547 263.99 -117.269
## + stl_adj      1      0.457 264.08 -117.138
## + TS.          1      0.314 264.23 -116.930
## + DRB.         1      0.235 264.31 -116.814
## + PTS          1      0.226 264.31 -116.802
## + TOV.         1      0.192 264.35 -116.752
## + gs_adj       1      0.179 264.36 -116.733

```



```

## + AST.          1      0.164 264.38 -116.712
## + ORtg          1      0.151 264.39 -116.692
## + blk_adj       1      0.013 264.53 -116.492
## + GS            1      0.007 264.53 -116.483
## - BLK.          1      2.788 267.33 -116.436
## + Pos           6      5.740 258.80 -114.918
## - vorp_adj      1      4.805 269.35 -113.542
## - OBPM          1      6.321 270.86 -111.382
## - orb_adj       1      6.657 271.20 -110.905
## - DBPM          1     11.301 275.84 -104.367
## - USG.          1     13.107 277.65 -101.855
## - Conference    2     15.461 280.00 -100.604
## - MP            1     19.531 284.07  -93.048
## - Age           1     36.875 301.41  -70.232
##
## Step:  AIC=-120.4
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg + OBPM + vorp_adj + G + dws_adj
##
##           Df Sum of Sq    RSS      AIC
## + ows_adj    1      2.833 259.02 -122.593
## + PER        1      1.594 260.26 -120.755
## <none>                261.85 -120.404
## + Height     1      0.892 260.96 -119.718
## + WS.48      1      0.795 261.06 -119.575
## + DRB.       1      0.685 261.17 -119.413
## + X3PAr      1      0.673 261.18 -119.395
## - BLK.       1      2.134 263.99 -119.280
## + International 1      0.584 261.27 -119.263
## + PTS        1      0.463 261.39 -119.086
## + ftr_adj    1      0.441 261.41 -119.053
## + STL.       1      0.415 261.44 -119.015
## + TS.        1      0.414 261.44 -119.013
## + FTr        1      0.333 261.52 -118.895
## + blk_adj    1      0.291 261.56 -118.833
## + TOV.       1      0.189 261.66 -118.682
## + AST.       1      0.167 261.69 -118.649
## + ORtg       1      0.155 261.70 -118.632
## + stl_adj    1      0.120 261.73 -118.580
## - dws_adj    1      2.688 264.54 -118.473
## + GS         1      0.026 261.82 -118.443
## + gs_adj     1      0.008 261.84 -118.416
## - DRtg       1      3.616 265.47 -117.125
## - G          1      3.699 265.55 -117.003
## + Pos        6      4.795 257.06 -115.520
## - orb_adj    1      5.608 267.46 -114.246
## - vorp_adj   1      6.933 268.79 -112.343
## - MP         1      7.652 269.50 -111.314
## - OBPM       1      7.770 269.62 -111.147
## - DBPM       1     11.655 273.51 -105.638
## - USG.       1     12.479 274.33 -104.480
## - Conference  2     15.452 277.30 -102.331
## - Age        1     35.154 297.01  -73.904
##

```

```

## Step: AIC=-122.59
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg + OBPM + vorp_adj + G + dws_adj + ows_adj
##
##           Df Sum of Sq    RSS      AIC
## + WS.48      1      2.591 256.43 -124.463
## + PER         1      2.501 256.52 -124.328
## + X3PAr       1      1.468 257.55 -122.781
## <none>                259.02 -122.593
## + ftr_adj     1      1.289 257.73 -122.514
## + FTr         1      1.053 257.97 -122.161
## + DRB.        1      0.853 258.17 -121.863
## + Height      1      0.769 258.25 -121.738
## + TS.         1      0.563 258.45 -121.431
## + International 1      0.476 258.54 -121.300
## + ORtg        1      0.394 258.62 -121.179
## + blk_adj     1      0.277 258.74 -121.004
## + AST.        1      0.190 258.83 -120.875
## + STL.        1      0.149 258.87 -120.814
## + TOV.        1      0.148 258.87 -120.813
## - BLK.        1      2.560 261.58 -120.806
## + PTS         1      0.056 258.96 -120.676
## + GS          1      0.042 258.98 -120.655
## + gs_adj      1      0.036 258.98 -120.645
## + stl_adj     1      0.002 259.02 -120.596
## - ows_adj     1      2.833 261.85 -120.404
## - dws_adj     1      3.544 262.56 -119.361
## - orb_adj     1      3.982 263.00 -118.719
## - DRtg        1      4.019 263.04 -118.665
## - OBPM        1      4.411 263.43 -118.091
## - G           1      4.494 263.51 -117.970
## + Pos         6      4.228 254.79 -116.929
## - MP          1      5.985 265.00 -115.798
## - vorp_adj    1      9.766 268.78 -110.343
## - USG.        1     11.149 270.17 -108.367
## - DBPM        1     13.454 272.47 -105.098
## - Conference   2     15.647 274.67 -104.011
## - Age         1     35.468 294.49  -75.184
##
## Step: AIC=-124.46
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + BLK. +
##      DRtg + OBPM + vorp_adj + G + dws_adj + ows_adj + WS.48
##
##           Df Sum of Sq    RSS      AIC
## - BLK.        1      0.578 257.00 -125.597
## - DRtg        1      0.578 257.00 -125.597
## <none>                256.43 -124.463
## + Height      1      1.136 255.29 -124.173
## + ORtg        1      0.916 255.51 -123.842
## + STL.        1      0.691 255.74 -123.502
## + ftr_adj     1      0.407 256.02 -123.075
## + International 1      0.346 256.08 -122.983
## + PER         1      0.334 256.09 -122.965
## + FTr         1      0.295 256.13 -122.907

```

```

## + blk_adj      1      0.245 256.18 -122.832
## + DRB.         1      0.228 256.20 -122.806
## + stl_adj      1      0.212 256.21 -122.782
## + AST.         1      0.188 256.24 -122.747
## + PTS          1      0.130 256.30 -122.659
## - WS.48        1      2.591 259.02 -122.593
## + GS           1      0.069 256.36 -122.568
## + X3PAr        1      0.066 256.36 -122.563
## + gs_adj       1      0.035 256.39 -122.516
## + TS.          1      0.013 256.41 -122.484
## + TOV.         1      0.010 256.42 -122.478
## - USG.         1      3.383 259.81 -121.417
## + Pos          6      5.376 251.05 -120.621
## - dws_adj      1      4.450 260.88 -119.839
## - ows_adj      1      4.629 261.06 -119.575
## - MP           1      4.864 261.29 -119.229
## - G            1      5.074 261.50 -118.920
## - OBPM         1      5.851 262.28 -117.777
## - orb_adj      1      6.360 262.79 -117.031
## - DBPM         1      6.802 263.23 -116.384
## - vorp_adj     1     12.141 268.57 -108.653
## - Conference   2     15.142 271.57 -106.375
## - Age          1     37.041 293.47  -74.517
##
## Step:  AIC=-125.6
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + DRtg +
##         OBPM + vorp_adj + G + dws_adj + ows_adj + WS.48
##
##           Df Sum of Sq    RSS      AIC
## - DRtg      1      0.384 257.39 -127.023
## <none>                257.00 -125.597
## + Height    1      0.847 256.16 -124.868
## + blk_adj   1      0.823 256.18 -124.832
## + ORtg      1      0.766 256.24 -124.747
## + BLK.      1      0.578 256.43 -124.463
## + PER       1      0.539 256.47 -124.406
## + AST.      1      0.391 256.61 -124.183
## + ftr_adj   1      0.297 256.71 -124.043
## + International 1      0.264 256.74 -123.994
## + STL.      1      0.263 256.74 -123.992
## + FTr       1      0.215 256.79 -123.920
## + PTS       1      0.163 256.84 -123.842
## + DRB.      1      0.148 256.86 -123.820
## + GS        1      0.095 256.91 -123.739
## + TOV.      1      0.033 256.97 -123.647
## + stl_adj   1      0.031 256.97 -123.644
## + gs_adj    1      0.027 256.98 -123.638
## + X3PAr     1      0.004 257.00 -123.603
## + TS.       1      0.001 257.00 -123.599
## - USG.      1      2.816 259.82 -123.403
## - WS.48     1      4.574 261.58 -120.806
## - MP        1      4.681 261.69 -120.649
## + Pos       6      4.658 252.35 -120.640
## - ows_adj   1      4.935 261.94 -120.275

```

```

## - dws_adj      1      5.108 262.11 -120.021
## - G            1      5.257 262.26 -119.802
## - orb_adj      1      5.996 263.00 -118.718
## - DBPM         1      6.560 263.56 -117.893
## - OBPM         1      9.220 266.23 -114.027
## - vorp_adj     1     13.014 270.02 -108.580
## - Conference   2     14.937 271.94 -107.847
## - Age          1     37.897 294.90  -74.642
##
## Step:  AIC=-127.02
## logsal ~ MP + Age + Conference + USG. + DBPM + orb_adj + OBPM +
##      vorp_adj + G + dws_adj + ows_adj + WS.48
##
##              Df Sum of Sq    RSS      AIC
## <none>                257.39 -127.023
## + ORtg              1      1.088 256.30 -126.653
## + Height            1      0.994 256.39 -126.513
## + STL.              1      0.547 256.84 -125.842
## + blk_adj           1      0.514 256.88 -125.792
## + AST.              1      0.440 256.95 -125.681
## + DRtg              1      0.384 257.00 -125.597
## + BLK.              1      0.384 257.00 -125.597
## + PER               1      0.302 257.09 -125.474
## + International    1      0.225 257.16 -125.360
## - USG.              1      2.463 259.85 -125.356
## + ftr_adj           1      0.209 257.18 -125.335
## + PTS               1      0.174 257.21 -125.283
## + FTr               1      0.159 257.23 -125.261
## + stl_adj           1      0.136 257.25 -125.226
## + DRB.              1      0.118 257.27 -125.200
## + GS                1      0.100 257.29 -125.172
## + gs_adj            1      0.077 257.31 -125.138
## + TOV.              1      0.032 257.36 -125.070
## + X3PAr             1      0.026 257.36 -125.062
## + TS.               1      0.018 257.37 -125.049
## + Pos               6      4.964 252.43 -122.520
## - dws_adj           1      5.051 262.44 -121.540
## - G                 1      5.235 262.62 -121.271
## - ows_adj           1      5.435 262.82 -120.978
## - DBPM              1      7.613 265.00 -117.800
## - MP                1      7.711 265.10 -117.659
## - orb_adj           1      8.196 265.58 -116.955
## - WS.48             1      8.543 265.93 -116.451
## - OBPM              1     13.163 270.55 -109.820
## - Conference        2     14.748 272.14 -109.571
## - vorp_adj          1     13.844 271.23 -108.853
## - Age               1     38.938 296.33  -74.785

```

Variance Inflation Factors

```

full = lm(logsal ~ ., data = data_regressors)
summary(full)

```

```
##
```

```

## Call:
## lm(formula = logsal ~ ., data = data_regressors)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.93037 -0.45129  0.02252  0.55457  1.92358
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    6.9223878   6.2597694   1.106  0.26956
## Age             0.0658913   0.0108324   6.083 3.13e-09 ***
## G             -0.0151915   0.0058436  -2.600  0.00973 **
## GS            -0.0035334   0.0043167  -0.819  0.41362
## gs_adj         0.0644941   0.0732507   0.880  0.37922
## MP             0.0007037   0.0003512   2.003  0.04591 *
## PER            0.0144325   0.0745765   0.194  0.84666
## X3PAr          0.5651446   0.5826956   0.970  0.33278
## FTr            3.1948760   3.5367641   0.903  0.36698
## ftr_adj       -4.7728624   4.8887869  -0.976  0.32960
## orb_adj        0.2109426   0.1684717   1.252  0.21138
## DRB.          -0.0293783   0.0188109  -1.562  0.11926
## AST.           0.0069214   0.0143750   0.481  0.63048
## STL.          -0.3266357   0.2020001  -1.617  0.10679
## stl_adj        0.7566000   0.5353263   1.413  0.15845
## BLK.          -0.0416043   0.1023922  -0.406  0.68476
## blk_adj       -0.2396468   0.3076569  -0.779  0.43655
## TOV.           0.0133228   0.0258305   0.516  0.60634
## USG.           0.0629825   0.0417427   1.509  0.13226
## ORtg           0.0373541   0.0240972   1.550  0.12202
## DRtg          -0.0019474   0.0503454  -0.039  0.96917
## ows_adj        3.6511542   1.4552426   2.509  0.01257 *
## dws_adj        0.6715446   0.4291937   1.565  0.11858
## WS.48         -5.9401485   5.4084826  -1.098  0.27284
## OBPM           0.0851882   0.1011619   0.842  0.40031
## DBPM           0.2167661   0.0778108   2.786  0.00563 **
## vorp_adj      -0.8227695   0.2011736  -4.090 5.37e-05 ***
## PosC-F         0.3722169   0.3424711   1.087  0.27786
## PosF          -0.1907207   0.1989507  -0.959  0.33841
## PosF-C        -0.0276510   0.2262794  -0.122  0.90281
## PosF-G        -0.4041900   0.3087133  -1.309  0.19131
## PosG          -0.6543956   0.3134875  -2.087  0.03758 *
## PosG-F        -0.5288633   0.2845591  -1.859  0.06394 .
## Height         0.0086920   0.0314421   0.276  0.78237
## PTS           -0.0001651   0.0005581  -0.296  0.76755
## TS.           -2.6400936   3.1085608  -0.849  0.39630
## InternationalYes -0.0208253   0.1133142  -0.184  0.85429
## ConferenceMulti -0.6859086   0.1600436  -4.286 2.36e-05 ***
## ConferenceWest -0.0851645   0.0997584  -0.854  0.39386
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8355 on 346 degrees of freedom
## Multiple R-squared:  0.5659, Adjusted R-squared:  0.5182
## F-statistic: 11.87 on 38 and 346 DF,  p-value: < 2.2e-16

```

```
vif(full)[,3]
```

```
##      Age      G      GS      gs_adj      MP
##  1.125340  3.060997  3.026024  2.766597  6.764531
##      PER      X3PAr      FTr      ftr_adj      orb_adj
##  8.821705  2.679451  12.851803  13.029819  2.584380
##      DRB.      AST.      STL.      stl_adj      BLK.
##  2.569992  3.109413  3.896314  3.660331  3.978306
##      blk_adj      TOV.      USG.      ORtg      DRtg
##  3.696406  2.905668  4.891260  6.450808  4.635219
##      ows_adj      dws_adj      WS.48      OBPM      DBPM
##  3.009714  4.660953  9.267516  6.492876  3.713037
##      vorp_adj      Pos      Height      PTS      TS.
##  2.847978  1.236453  2.560208  6.062253  4.530219
## International Conference
##  1.126238  1.100172
```

```
full12 = lm(logsal ~ . - WS.48 - PER - ORtg - PTS, data = data_regressors) # Sequentially removed highest
```

Added Variable Plots

Diagnostics

Leverage Points

Cook's Distances

Outliers

Model Fitting

Test for Interaction

Test for Higher Order

Model Validation

Final Model

Discussion

Conclusion