

# 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

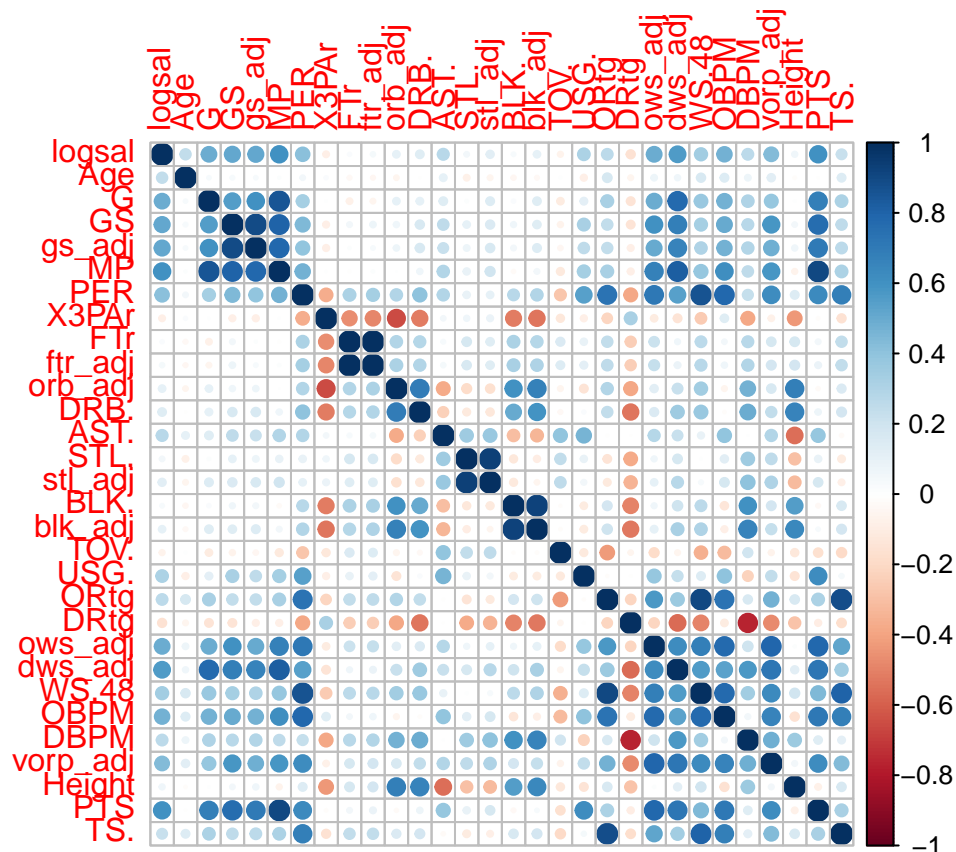
Immediately we can recognize that some variables are functions of others and therefore do not need to be considered. Specifically,  $BPM = OBPM + DBPM$ , so there is no need to include BPM in our model. Similarly,  $WS = OWS + DWS$  and  $TRB = ORB + DRB$ , so we can exclude WS and TRB from consideration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