

# Gas Turbine CO and NOx Emission Analysis

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## Introduction

The combined cycle power plant, also known as combined cycle gas turbine plant, is an assembly of heat engines that combine to generate electricity (Tüfekci). A combined-cycle power plant (CCPP) is made up of gas turbines, steam turbines, and heat recovery steam generators. The electricity is generated and combined in one cycle by gas and steam turbines and then transferred from one turbine to another.

We are interested in identifying the process variables that impact carbon monoxide emissions. By determining the process variables that impact carbon monoxide emissions we will be able to find opportunities to reduce carbon monoxide emissions.

## Gas Turbine CO and NOx Emission Data Set

The data comes from a gas turbine located in Turkey that studies the flue gas emissions of specifically carbon monoxide (CO) and nitrogen oxide (NOx) gases. The data set provides hourly statistics of 11 sensors. Data points were collected from a gas turbine from Jan 01 2011 to Dec 13 2015.

## Description

The data file `gt_2015.csv` has 7384 observations and 11 variables from the UCI Gas Turbine CO and NOx Emission Data Set. We are going to explore and analyze the following variables:

- AT - Ambient Temperature
- AP - Ambient Pressure
- AH - Ambient Humidity
- AFDP - Air filter difference pressure
- GTEP - Gas turbine exhaust pressure
- TIT - Turbine inlet temperature
- TAT - Turbine after temperature
- TEY - Turbine energy yield
- CDP - Compressor discharge pressure

Here's a quick peek at the data set:

AT	AP	AH	AFDP	GTEP	TIT	TAT	TEY	CDP	CO	NOX
1.95320	1020.1	84.985	2.5304	20.116	1048.7	544.92	116.27	10.799	7.4491	113.250
1.21910	1020.1	87.523	2.3937	18.584	1045.5	548.50	109.18	10.347	6.4684	112.020
0.94915	1022.2	78.335	2.7789	22.264	1068.8	549.95	125.88	11.256	3.6335	88.147
1.00750	1021.7	76.942	2.8170	23.358	1075.2	549.63	132.21	11.702	3.1972	87.078
1.28580	1021.6	76.732	2.8377	23.483	1076.2	549.68	133.58	11.737	2.3833	82.515
1.83190	1021.7	76.411	2.8410	23.495	1076.4	549.92	133.58	11.829	2.0812	81.193

Here's some descriptive statistics of the data set:

```
##          AT            AP            AH            AFDP
##  Min.   :-6.235      Min.   : 989.4      Min.   :24.09      Min.   :2.369
##  1st Qu.:11.073    1st Qu.:1009.7    1st Qu.:59.45    1st Qu.:3.117
##  Median  :17.456    Median :1014.0     Median :70.95    Median :3.538
##  Mean    :17.225    Mean   :1014.5     Mean   :68.65    Mean   :3.599
##  3rd Qu.:23.685    3rd Qu.:1018.3    3rd Qu.:79.65    3rd Qu.:4.195
##  Max.    :37.103    Max.   :1036.6     Max.   :96.67    Max.   :5.239
##          GTEP          TIT           TAT           TEY
##  Min.   :17.70       Min.   :1016       Min.   :516.0      Min.   :100.0
##  1st Qu.:23.15       1st Qu.:1070       1st Qu.:544.7    1st Qu.:126.3
##  Median :25.33       Median :1080       Median :549.7     Median :131.6
##  Mean   :26.13       Mean   :1079       Mean   :546.6     Mean   :134.0
##  3rd Qu.:30.02       3rd Qu.:1100       3rd Qu.:550.0    3rd Qu.:147.2
##  Max.   :40.72       Max.   :1100       Max.   :550.6     Max.   :179.5
##          CDP           CO            NOX
##  Min.   : 9.871      Min.   : 0.2128     Min.   : 25.91
##  1st Qu.:11.466      1st Qu.: 1.8082     1st Qu.: 52.40
##  Median :11.933      Median : 2.5334     Median : 56.84
##  Mean   :12.097      Mean   : 3.1300     Mean   : 59.89
##  3rd Qu.:13.148      3rd Qu.: 3.7026     3rd Qu.: 65.09
##  Max.   :15.159      Max.   :41.0970     Max.   :119.68
```

## Goals

The goal for this project is to utilize this data set for the purpose of studying flue gas emissions, specifically carbon monoxide(CO) and nitrogen oxides (NOx). Our focus will be to find statistically significant relationships between the ambient and turbine variables and the emissions variables. We will limit the size of our model to more clearly demonstrate these relationships. Ultimately we will suggest which variables make the biggest impact on emission levels in order to decrease emissions overall.

## Exploratory Data Analysis

Relationships between feature variables

Figure 1: Scatterplot Matrices to decide which feature variables have a linear relationship

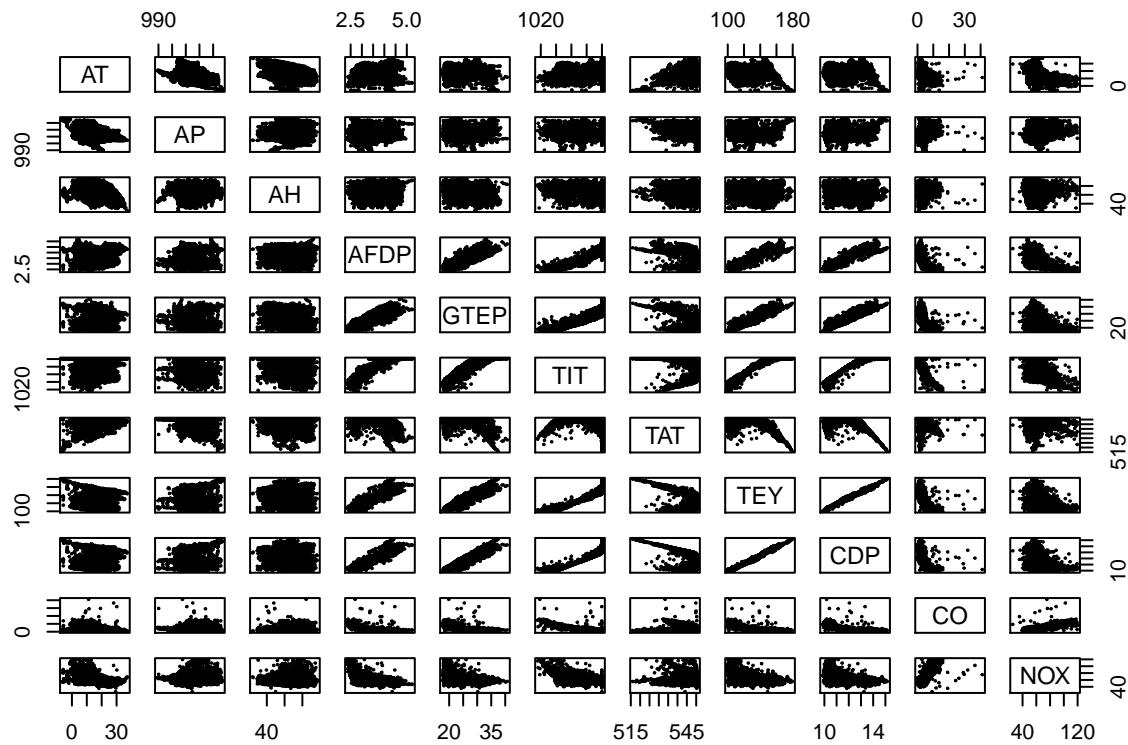


Figure 2:

Table 2: Pairwise Correlation Between Variables

	AT	AP	AH	AFDP	GTEP	TIT	TAT	TEY	CDP	CO	NOX
AT	1.00	-0.49	-0.47	0.47	0.19	0.33	0.21	0.11	0.20	-0.39	-0.59
AP	-0.49	1.00	0.08	-0.09	-0.04	-0.08	-0.29	0.05	0.03	0.20	0.21
AH	-0.47	0.08	1.00	-0.25	-0.30	-0.26	0.03	-0.18	-0.22	0.16	0.07
AFDP	0.47	-0.09	-0.25	1.00	0.84	0.92	-0.52	0.88	0.92	-0.64	-0.58
GTEP	0.19	-0.04	-0.30	0.84	1.00	0.89	-0.62	0.93	0.94	-0.56	-0.37
TIT	0.33	-0.08	-0.26	0.92	0.89	1.00	-0.40	0.95	0.95	-0.74	-0.52
TAT	0.21	-0.29	0.03	-0.52	-0.62	-0.40	1.00	-0.63	-0.66	0.03	0.05
TEY	0.11	0.05	-0.18	0.88	0.93	0.95	-0.63	1.00	0.99	-0.62	-0.40
CDP	0.20	0.03	-0.22	0.92	0.94	0.95	-0.66	0.99	1.00	-0.61	-0.44
CO	-0.39	0.20	0.16	-0.64	-0.56	-0.74	0.03	-0.62	-0.61	1.00	0.68
NOX	-0.59	0.21	0.07	-0.58	-0.37	-0.52	0.05	-0.40	-0.44	0.68	1.00

Remove variables that are highly correlated.

```
##      AT       AP       AH      AFDP      GTEP      TAT 
## 3.866424 1.600597 1.718769 7.412520 5.909197 2.301015
```

Exploratory analysis shows possible linear relationships between the response variable CO and the feature variables CDP, TEY, TIT, GTEP and AFDP. Collinearity between some of the feature variables (TIT, CDP, and TEY) could cause some problems in our analysis and will likely lead to the removal of the redundant variables.

# Methods

## Linear Regression

We will create a multiple linear regression model using all feature variables mentioned in the description of Section 1. The implementation and parameters of this model can be obtained by the following equation where we will find estimates for the parameters  $\beta$  using:

$$\hat{\beta} = (X^T X)^{-1} X^T y$$

Key assumptions are stated as:

- Linearity: can be written as a linear combination of the predictors.
- Independence: the errors are independent of each other (not highly correlated).
- Normality: the distribution of the errors follow a normal distribution.
- Equal Variance: the error variance is the same.<sup>1</sup>

We will then use model selection using backward BIC to tune our model and remove any insignificant predictor variables. This selection prefers smaller models which aligns with our goal of limiting the size of our final model.

```
full_model = lm(CO ~ ., data = gt_2015)
linear_model = lm(CO ~ . - NOX - TIT - CDP - TEY, data = gt_2015)
summary(linear_model)

##
## Call:
## lm(formula = CO ~ . - NOX - TIT - CDP - TEY, data = gt_2015)
##
## Residuals:
##     Min      1Q Median      3Q     Max 
## -6.839 -0.673 -0.132  0.481 34.242 
## 
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)    
## (Intercept) 145.099775   4.408695 32.912 < 2e-16 ***
## AT          0.028276   0.004060  6.965 3.57e-12 ***
## AP          0.001918   0.003067  0.625  0.532    
## AH         -0.009753   0.001618 -6.026 1.76e-09 ***
## AFDP        -2.531044   0.074576 -33.939 < 2e-16 ***
## GTEP        -0.186308   0.009082 -20.513 < 2e-16 ***
## TAT         -0.237369   0.004619 -51.387 < 2e-16 ***
## ---        
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
## 
## Residual standard error: 1.436 on 7377 degrees of freedom
## Multiple R-squared:  0.5874, Adjusted R-squared:  0.587 
## F-statistic: 1750 on 6 and 7377 DF,  p-value: < 2.2e-16
```

---

<sup>1</sup>Dalpiaz David, Applied Statistics in R, <https://daviddalpiaz.github.io/appliedstats/model-diagnostics.html>

```

#picking a new variable to test
AT_model = lm(CO ~ AT, data = gt_2015)
AP_model = lm(CO ~ AP, data = gt_2015)
AH_model = lm(CO ~ AH, data = gt_2015)
AFDP_model = lm(CO ~ AFDP, data = gt_2015)
GTEP_model = lm(CO ~ GTEP, data = gt_2015)
TAT_model = lm(CO ~ TAT, data = gt_2015)
BIC(AT_model)

## [1] 31634.69

BIC(AP_model)

## [1] 32553.05

BIC(AH_model)

## [1] 32668.32

BIC(AFDP_model) #second best

## [1] 28953.71

BIC(GTEP_model)

## [1] 30112.68

BIC(TAT_model)

## [1] 32852.49

BIC(linear_model) #this is the best model

## [1] 26365.45

library(MASS)

n = length(resid(linear_model))
BIC_model = step(linear_model, direction = "backward", k = log(n))

## Start: AIC=5401.66
## CO ~ (AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP + NOX) -
##       NOX - TIT - CDP - TEY
##
##          Df Sum of Sq   RSS   AIC
## - AP     1      0.8 15218 5393.1
## <none>           15217 5401.7
## - AH     1     74.9 15292 5429.0

```

```

## - AT    1    100.1 15317 5441.1
## - GTEP  1     868.0 16085 5802.4
## - AFDP  1    2376.0 17593 6464.1
## - TAT   1    5447.0 20664 7652.1
##
## Step: AIC=5393.14
## CO ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>           15218 5393.1
## - AH    1      86.8 15304 5426.2
## - AT    1     120.5 15338 5442.5
## - GTEP  1     991.0 16209 5850.1
## - AFDP  1    2564.3 17782 6534.1
## - TAT   1    5608.5 20826 7701.0

coef(BIC_model)

## (Intercept)          AT          AH          AFDP         GTEP          TAT
## 147.33755305  0.02702808 -0.01004686 -2.51758434 -0.18816259 -0.23782668

stepAIC(linear_model, direction = "backward")

## Start: AIC=5353.31
## CO ~ (AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP + NOX) -
##       NOX - TIT - CDP - TEY
##
##          Df Sum of Sq   RSS   AIC
## - AP    1      0.8 15218 5351.7
## <none>           15217 5353.3
## - AH    1     74.9 15292 5387.6
## - AT    1     100.1 15317 5399.7
## - GTEP  1     868.0 16085 5760.9
## - AFDP  1    2376.0 17593 6422.6
## - TAT   1    5447.0 20664 7610.7
##
## Step: AIC=5351.7
## CO ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>           15218 5351.7
## - AH    1      86.8 15304 5391.7
## - AT    1     120.5 15338 5408.0
## - GTEP  1     991.0 16209 5815.5
## - AFDP  1    2564.3 17782 6499.6
## - TAT   1    5608.5 20826 7666.5

##
## Call:
## lm(formula = CO ~ AT + AH + AFDP + GTEP + TAT, data = gt_2015)
##
## Coefficients:
## (Intercept)          AT          AH          AFDP         GTEP          TAT
## 147.33755      0.02703     -0.01005     -2.51758     -0.18816     -0.23783

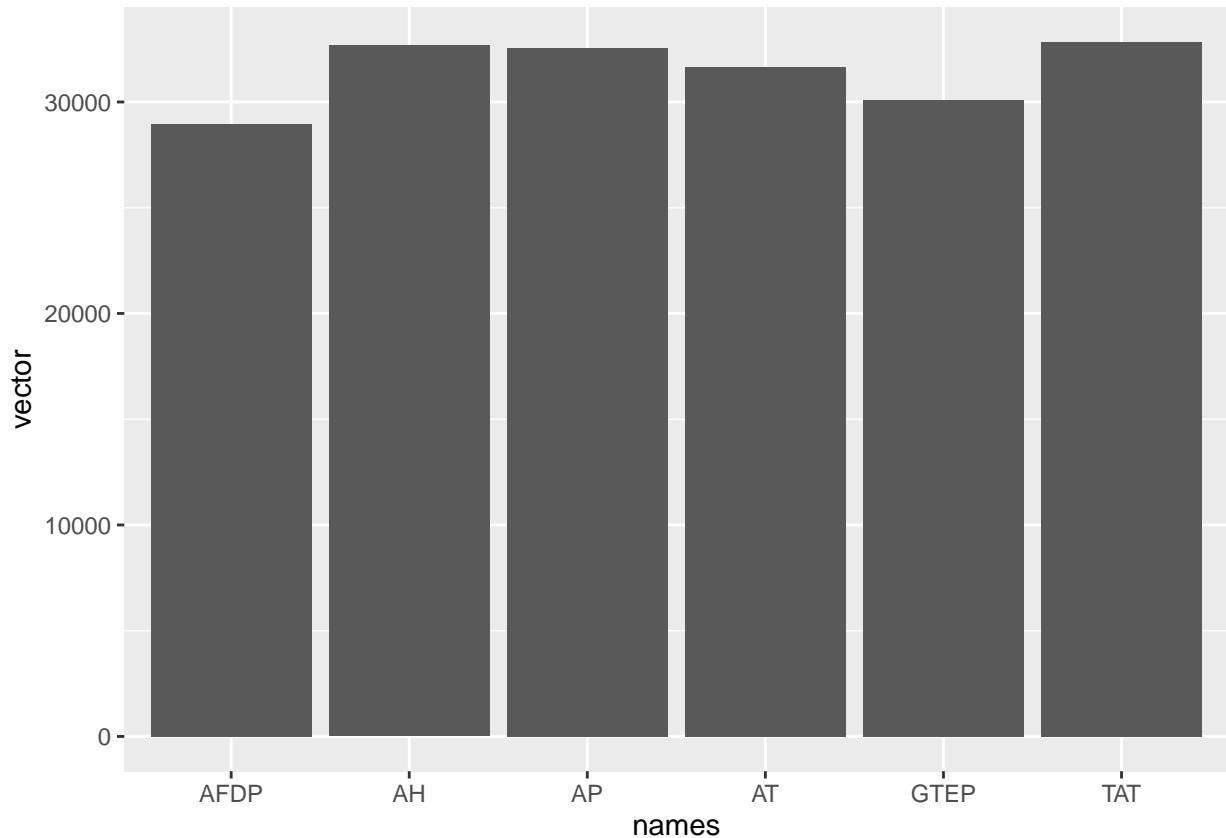
```

```

vector <- c(BIC(AT_model), BIC(AP_model), BIC(AH_model), BIC(AFDP_model), BIC(GTEP_model), BIC(TAT_model))

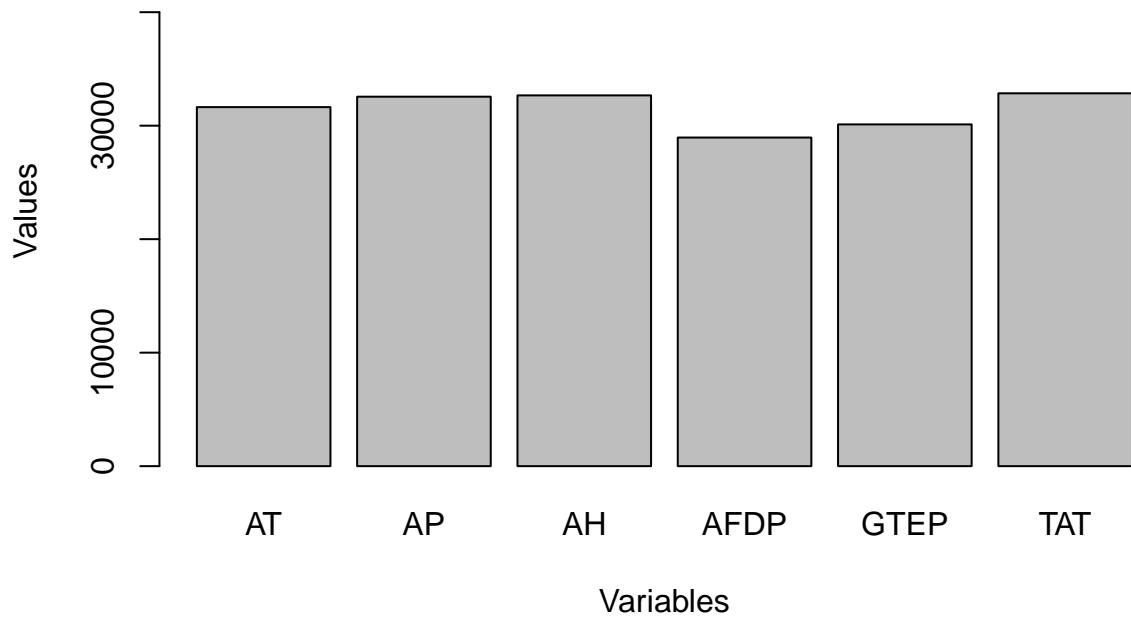
library(ggplot2)
df <- data.frame(vector = c(BIC(AT_model), BIC(AP_model), BIC(AH_model), BIC(AFDP_model), BIC(GTEP_model), BIC(TAT_model)))
ggplot(data = df, aes(x = names, y = vector), ylim = c(0, 50000)) + geom_bar(stat = "identity")

```



```
barplot(vector, main = "BIC values", xlab = "Variables", ylab = "Values", names.arg = c("AT", "AP", "AH"))
```

## BIC values



```
####push attempt

library(caret)

## Loading required package: lattice

##
## Attaching package: 'lattice'

## The following object is masked from 'package:faraway':
## 
##     melanoma

#simplest linear model
simple_linear_model <- lm(CO ~ . - TIT - CDP - TEY, data = gt_2015)

#5-fold cross validation
cv_5 <- trainControl(method = "cv", number = 5)

#AIC stepwise selected linear model
linear_mod <- train(
  form = CO ~ . - TIT - CDP - TEY - NOX,
  data = gt_2015,
  method = "lmStepAIC",
  trControl = cv_5
)
```

```

## Start: AIC=3643.12
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>            10920 3643.1
## - AP      1       5.9 10926 3644.3
## - AH      1      38.5 10958 3661.9
## - AT      1      95.8 11016 3692.7
## - GTEP    1     643.4 11563 3979.4
## - AFDP    1    1976.0 12896 4623.8
## - TAT     1    4262.5 15182 5588.1
## Start: AIC=3915.41
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## - AP      1       2.7 11436 3914.8
## <none>            11434 3915.4
## - AH      1      55.6 11489 3942.1
## - AT      1      69.5 11503 3949.2
## - GTEP    1     637.1 12071 4233.7
## - AFDP    1    1910.4 13344 4825.9
## - TAT     1    4067.2 15501 5710.8
##
## Step: AIC=3914.79
## .outcome ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>            11436 3914.8
## - AH      1      68.8 11505 3948.2
## - AT      1      74.9 11511 3951.3
## - GTEP    1     744.5 12181 4285.3
## - AFDP    1    2040.1 13476 4882.3
## - TAT     1    4194.1 15630 5758.0
## Start: AIC=4729.11
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## - AP      1       0.1 13123 4727.2
## <none>            13123 4729.1
## - AH      1      74.6 13198 4760.6
## - AT      1      85.9 13209 4765.6
## - GTEP    1     707.8 13831 5037.4
## - AFDP    1    1900.0 15023 5525.8
## - TAT     1    4464.7 17588 6456.9
##
## Step: AIC=4727.17
## .outcome ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>            13123 4727.2
## - AH      1      83.6 13207 4762.7
## - AT      1      108.9 13232 4774.0
## - GTEP    1     800.3 13923 5074.8
## - AFDP    1    2067.3 15190 5589.3

```

```

## - TAT 1 4586.2 17709 6495.6
## Start: AIC=4484.58
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## - AP     1      0.0 12591 4482.6
## <none>           12591 4484.6
## - AT     1      68.0 12659 4514.4
## - AH     1      71.1 12662 4515.8
## - GTEP   1      717.4 13309 4810.0
## - AFDP   1     1865.9 14457 5299.0
## - TAT    1     4269.0 16860 6207.5
##
## Step: AIC=4482.6
## .outcome ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>           12591 4482.6
## - AH     1      76.9 12668 4516.5
## - AT     1      91.0 12682 4523.1
## - GTEP   1     800.7 13392 4844.8
## - AFDP   1     2040.0 14631 5367.7
## - TAT    1     4371.1 16963 6241.1
## Start: AIC=4571.43
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## - AP     1      0.1 12777 4569.5
## <none>           12777 4571.4
## - AH     1      64.9 12842 4599.3
## - AT     1      81.6 12859 4607.0
## - GTEP   1     772.5 13550 4916.2
## - AFDP   1     1841.8 14619 5364.9
## - TAT    1     4729.4 17507 6429.6
##
## Step: AIC=4569.46
## .outcome ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>           12777 4569.5
## - AH     1      69.5 12847 4599.5
## - AT     1     110.9 12888 4618.5
## - GTEP   1     859.8 13637 4952.2
## - AFDP   1     2020.1 14797 5434.5
## - TAT    1     4844.5 17622 6466.4
## Start: AIC=5353.31
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## - AP     1      0.8 15218 5351.7
## <none>           15217 5353.3
## - AH     1      74.9 15292 5387.6
## - AT     1     100.1 15317 5399.7
## - GTEP   1     868.0 16085 5760.9

```

```

## - AFDP 1    2376.0 17593 6422.6
## - TAT 1    5447.0 20664 7610.7
##
## Step: AIC=5351.7
## .outcome ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>      15218 5351.7
## - AH 1     86.8 15304 5391.7
## - AT 1    120.5 15338 5408.0
## - GTEP 1   991.0 16209 5815.5
## - AFDP 1   2564.3 17782 6499.6
## - TAT 1   5608.5 20826 7666.5

#Linear log model
linear_mod_2 <- train(
  form = log(CO) ~ . - TIT - CDP - TEY - NOX,
  data = gt_2015,
  method = "lmStepAIC",
  trControl = cv_5,
  nvmax = 10
)

## Start: AIC=-13066.53
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>      644.80 -13066
## - AP 1     0.752 645.55 -13062
## - AT 1     1.195 645.99 -13058
## - AH 1     5.182 649.98 -13021
## - GTEP 1   30.600 675.40 -12795
## - AFDP 1   117.264 762.06 -12082
## - TAT 1   118.593 763.39 -12071
## Start: AIC=-13236.2
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## - AP 1     0.176 626.71 -13236
## <none>      626.54 -13236
## - AT 1     1.655 628.19 -13223
## - AH 1     6.618 633.16 -13176
## - GTEP 1   30.949 657.49 -12953
## - AFDP 1   113.853 740.39 -12252
## - TAT 1   119.393 745.93 -12208
##
## Step: AIC=-13236.54
## .outcome ~ AT + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq   RSS   AIC
## <none>      626.71 -13236
## - AT 1     2.936 629.65 -13211
## - AH 1     7.939 634.65 -13164
## - GTEP 1   36.531 663.25 -12904

```

```

## - AFDP 1 121.407 748.12 -12193
## - TAT 1 124.177 750.89 -12171
## Start: AIC=-13127.89
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq    RSS    AIC
## <none>            638.83 -13128
## - AP     1     0.551 639.38 -13125
## - AT     1     1.210 640.04 -13119
## - AH     1     5.836 644.67 -13076
## - GTEP   1    30.905 669.74 -12851
## - AFDP   1   117.269 756.10 -12134
## - TAT    1   121.847 760.68 -12098
## Start: AIC=-13054.3
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq    RSS    AIC
## <none>            646.84 -13054
## - AP     1     0.388 647.23 -13053
## - AT     1     1.134 647.97 -13046
## - AH     1     4.642 651.48 -13014
## - GTEP   1    32.804 679.64 -12764
## - AFDP   1   112.885 759.72 -12106
## - TAT    1   122.604 769.44 -12031
## Start: AIC=-12960.4
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq    RSS    AIC
## <none>            657.20 -12960
## - AP     1     0.733 657.93 -12956
## - AT     1     0.844 658.05 -12955
## - AH     1     5.890 663.09 -12910
## - GTEP   1    31.719 688.92 -12684
## - AFDP   1   115.211 772.41 -12008
## - TAT    1   121.756 778.96 -11958
## Start: AIC=-16362.66
## .outcome ~ AT + AP + AH + AFDP + GTEP + TAT
##
##          Df Sum of Sq    RSS    AIC
## <none>            803.69 -16363
## - AP     1     0.617 804.31 -16359
## - AT     1     1.490 805.18 -16351
## - AH     1     7.006 810.70 -16301
## - GTEP   1    39.224 842.91 -16013
## - AFDP   1   144.163 947.85 -15146
## - TAT    1   151.059 954.75 -15093

```

```

#Lasso model
lasso_mod <- train(
  form = CO ~ . - TIT - CDP - TEY - NOX,
  data = gt_2015,
  method = "lasso",
  trControl = cv_5
)

```

```

#Linear model with 2-way interactions
linear_mod_3 <- train(
  form = log(CO) ~ (AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP)^2,
  data = gt_2015,
  method = "lmStepAIC",
  trControl = cv_5,
  nvmax = 10
)

## Start: AIC=-14615.54
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' +
##   'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##   'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS     AIC
## - AH           1  0.0059 489.54 -14618
## - 'TAT:CDP'    1  0.0082 489.54 -14617
## - 'AP:CDP'     1  0.0126 489.55 -14617
## - 'AT:CDP'     1  0.0172 489.55 -14617
## - 'AH:TAT'     1  0.0230 489.56 -14617
## - 'AH:CDP'     1  0.0334 489.57 -14617
## - 'AFDP:TIT'   1  0.0408 489.57 -14617
## - 'GTEP:CDP'   1  0.0415 489.58 -14617
## - 'AH:TEY'     1  0.0681 489.60 -14617
## - 'TEY:CDP'    1  0.0691 489.60 -14617
## - 'GTEP:TAT'   1  0.0791 489.61 -14617
## - 'AH:TIT'     1  0.0973 489.63 -14616
## - 'AP:AFDP'    1  0.1010 489.63 -14616
## - 'AT:TAT'     1  0.1043 489.64 -14616
## - 'TIT:TEY'    1  0.1073 489.64 -14616
## - 'AFDP:TEY'   1  0.1200 489.65 -14616
## - 'GTEP:TIT'   1  0.1213 489.66 -14616
## - 'AT:AFDP'    1  0.1519 489.69 -14616
## - 'GTEP:TEY'   1  0.1631 489.70 -14616
## - 'TAT:TEY'    1  0.1639 489.70 -14616
## <none>            489.53 -14616
## - 'AFDP:CDP'   1  0.1666 489.70 -14616
## - 'TIT:CDP'    1  0.2714 489.81 -14614
## - 'AH:GTEP'    1  0.2748 489.81 -14614
## - 'AFDP:TAT'   1  0.2838 489.82 -14614
## - 'AT:TIT'     1  0.3144 489.85 -14614
## - AT            1  0.3323 489.87 -14614
## - CDP           1  0.3916 489.93 -14613
## - TEY           1  0.4614 490.00 -14612
## - 'AT:AH'       1  0.5595 490.09 -14611
## - GTEP          1  0.6032 490.14 -14610
## - 'AP:GTEP'     1  0.6632 490.20 -14610
## - 'AH:AFDP'    1  0.8148 490.35 -14608

```

```

## - TIT      1  0.8534 490.39 -14607
## - 'AT:GTEP' 1  0.8596 490.39 -14607
## - 'AFDP:GTEP' 1  0.8845 490.42 -14607
## - AFDP     1  0.9385 490.47 -14606
## - 'AP:TAT'  1  1.1883 490.72 -14603
## - 'AT:TEY'  1  1.2460 490.78 -14602
## - 'AP:TIT'  1  1.8869 491.42 -14595
## - 'AP:AH'   1  1.9482 491.48 -14594
## - TAT      1  2.1467 491.68 -14592
## - 'TIT:TAT' 1  2.3449 491.88 -14589
## - AP       1  2.6559 492.19 -14586
## - 'AP:TEY'  1  3.7143 493.25 -14573
## - 'AT:AP'   1  5.2812 494.81 -14554
##
## Step:  AIC=-14617.47
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##           'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##           'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##           'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##           'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##           'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'TAT:CDP' 1  0.0106 489.55 -14619
## - 'AP:CDP'  1  0.0123 489.55 -14619
## - 'AT:CDP'  1  0.0171 489.56 -14619
## - 'AH:CDP'  1  0.0338 489.57 -14619
## - 'AH:TAT'  1  0.0365 489.58 -14619
## - 'AFDP:TIT' 1  0.0412 489.58 -14619
## - 'GTEP:CDP' 1  0.0421 489.58 -14619
## - 'TEY:CDP'  1  0.0661 489.61 -14619
## - 'GTEP:TAT' 1  0.0744 489.61 -14619
## - 'AT:TAT'   1  0.1006 489.64 -14618
## - 'TIT:TEY'  1  0.1065 489.65 -14618
## - 'GTEP:TIT' 1  0.1155 489.66 -14618
## - 'AFDP:TEY' 1  0.1179 489.66 -14618
## - 'AP:AFDP'  1  0.1283 489.67 -14618
## - 'AT:AFDP'  1  0.1461 489.69 -14618
## - 'GTEP:TEY' 1  0.1572 489.70 -14618
## - 'AFDP:CDP' 1  0.1641 489.70 -14618
## - 'TAT:TEY'  1  0.1642 489.70 -14618
## <none>            489.54 -14618
## - 'AH:TIT'   1  0.1722 489.71 -14617
## - 'AH:TEY'   1  0.1782 489.72 -14617
## - 'TIT:CDP'  1  0.2655 489.81 -14616
## - 'AH:GTEP'  1  0.2708 489.81 -14616
## - 'AFDP:TAT' 1  0.2876 489.83 -14616
## - 'AT:TIT'   1  0.3091 489.85 -14616
## - CDP       1  0.3883 489.93 -14615
## - AT        1  0.4083 489.95 -14614
## - TEY       1  0.4572 490.00 -14614
## - GTEP      1  0.6182 490.16 -14612

```

```

## - 'AP:GTEP'    1  0.6593 490.20 -14612
## - 'AT:AH'      1  0.8242 490.36 -14610
## - TIT          1  0.8479 490.39 -14609
## - 'AT:GTEP'    1  0.8566 490.40 -14609
## - 'AH:AFDP'    1  0.8712 490.41 -14609
## - 'AFDP:GTEP'  1  0.9281 490.47 -14608
## - AFDP         1  1.0526 490.59 -14607
## - 'AP:TAT'     1  1.1835 490.72 -14605
## - 'AT:TEY'     1  1.3242 490.86 -14604
## - 'AP:TIT'     1  1.8854 491.43 -14597
## - 'AP:AH'      1  2.1202 491.66 -14594
## - TAT          1  2.1490 491.69 -14594
## - 'TIT:TAT'   1  2.3394 491.88 -14591
## - AP           1  2.6549 492.19 -14588
## - 'AP:TEY'     1  3.7110 493.25 -14575
## - 'AT:AP'      1  5.6469 495.19 -14552
##
## Step: AIC=-14619.34
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##       'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##       'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##       'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##       'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##       'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##       'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##       'TAT:TEY' + 'TEY:CDP'
##
##                                     Df Sum of Sq    RSS    AIC
## - 'AP:CDP'      1  0.0099 489.56 -14621
## - 'AT:CDP'      1  0.0197 489.57 -14621
## - 'AH:CDP'      1  0.0335 489.58 -14621
## - 'AFDP:TIT'    1  0.0341 489.58 -14621
## - 'AH:TAT'      1  0.0349 489.59 -14621
## - 'GTEP:CDP'    1  0.0374 489.59 -14621
## - 'AT:TAT'      1  0.1147 489.66 -14620
## - 'TIT:TEY'     1  0.1169 489.67 -14620
## - 'AP:AFDP'     1  0.1199 489.67 -14620
## - 'TEY:CDP'     1  0.1206 489.67 -14620
## - 'GTEP:TAT'    1  0.1311 489.68 -14620
## - 'TAT:TEY'     1  0.1578 489.71 -14619
## <none>                      489.55 -14619
## - 'AH:TIT'      1  0.1684 489.72 -14619
## - 'AH:TEY'      1  0.1737 489.72 -14619
## - 'AFDP:CDP'    1  0.1834 489.73 -14619
## - 'AFDP:TEY'    1  0.1923 489.74 -14619
## - 'AT:AFDP'     1  0.2008 489.75 -14619
## - 'GTEP:TIT'    1  0.2188 489.77 -14619
## - 'AH:GTEP'     1  0.2731 489.82 -14618
## - 'AFDP:TAT'    1  0.2771 489.83 -14618
## - 'AT:TIT'      1  0.3143 489.86 -14618
## - CDP          1  0.3797 489.93 -14617
## - 'GTEP:TEY'    1  0.4084 489.96 -14616
## - AT           1  0.5334 490.08 -14615
## - TEY          1  0.5997 490.15 -14614

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## - 'AP:GTEP' 1 0.6753 490.23 -14613
## - 'TIT:CDP' 1 0.7299 490.28 -14612
## - 'AT:AH' 1 0.8167 490.37 -14612
## - 'AH:AFDP' 1 0.8833 490.43 -14611
## - TIT 1 0.8978 490.45 -14610
## - GTEP 1 0.9573 490.51 -14610
## - 'AFDP:GTEP' 1 0.9663 490.52 -14610
## - AFDP 1 1.1212 490.67 -14608
## - 'AP:TAT' 1 1.2371 490.79 -14606
## - 'AT:GTEP' 1 1.3160 490.87 -14606
## - 'AT:TEY' 1 1.3173 490.87 -14606
## - 'AP:TIT' 1 1.9713 491.52 -14598
## - 'AP:AH' 1 2.1096 491.66 -14596
## - TAT 1 2.1388 491.69 -14596
## - 'TIT:TAT' 1 2.5844 492.13 -14590
## - AP 1 2.7808 492.33 -14588
## - 'AP:TEY' 1 4.0581 493.61 -14573
## - 'AT:AP' 1 6.1157 495.67 -14548
##
## Step: AIC=-14621.22
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##      'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##      'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##      'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##      'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##      'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##      'TEY:CDP'
##
##                                     Df Sum of Sq   RSS   AIC
## - 'AFDP:TIT' 1 0.0281 489.59 -14623
## - 'GTEP:CDP' 1 0.0310 489.59 -14623
## - 'AT:CDP' 1 0.0400 489.60 -14623
## - 'AH:TAT' 1 0.0472 489.61 -14623
## - 'AH:CDP' 1 0.0488 489.61 -14623
## - 'AT:TAT' 1 0.1057 489.67 -14622
## - 'TIT:TEY' 1 0.1122 489.67 -14622
## - 'AP:AFDP' 1 0.1158 489.68 -14622
## - 'GTEP:TAT' 1 0.1224 489.68 -14622
## - 'TEY:CDP' 1 0.1236 489.68 -14622
## - 'TAT:TEY' 1 0.1622 489.72 -14621
## <none> 489.56 -14621
## - 'AH:TEY' 1 0.1719 489.73 -14621
## - 'AFDP:CDP' 1 0.1738 489.73 -14621
## - 'AFDP:TEY' 1 0.1901 489.75 -14621
## - 'AH:TIT' 1 0.1982 489.76 -14621
## - 'AT:AFDP' 1 0.2023 489.76 -14621
## - 'GTEP:TIT' 1 0.2097 489.77 -14621
## - 'AFDP:TAT' 1 0.2677 489.83 -14620
## - 'AH:GTEP' 1 0.2729 489.83 -14620
## - 'AT:TIT' 1 0.3209 489.88 -14619
## - 'GTEP:TEY' 1 0.4068 489.97 -14618
## - AT 1 0.5389 490.10 -14617
## - TEY 1 0.6170 490.18 -14616

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## - 'AP:GTEP' 1 0.6757 490.24 -14615
## - CDP 1 0.7211 490.28 -14614
## - 'TIT:CDP' 1 0.7266 490.29 -14614
## - 'AT:AH' 1 0.8179 490.38 -14613
## - 'AH:AFDP' 1 0.8878 490.45 -14612
## - GTEP 1 0.9539 490.51 -14612
## - 'AFDP:GTEP' 1 0.9589 490.52 -14612
## - AFDP 1 1.1151 490.68 -14610
## - 'AT:GTEP' 1 1.3098 490.87 -14607
## - TIT 1 1.3269 490.89 -14607
## - 'AT:TEY' 1 1.3338 490.89 -14607
## - 'AP:AH' 1 2.1099 491.67 -14598
## - 'TIT:TAT' 1 2.5836 492.14 -14592
## - AP 1 2.7900 492.35 -14590
## - 'AP:TAT' 1 2.7962 492.36 -14590
## - 'AP:tit' 1 3.1720 492.73 -14585
## - 'AP:TEY' 1 4.1352 493.70 -14574
## - TAT 1 4.6962 494.26 -14567
## - 'AT:AP' 1 6.1545 495.71 -14549
##
## Step: AIC=-14622.88
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##   'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TAT' + 'AFDP:TEY' +
##   'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' +
##   'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##                                     Df Sum of Sq    RSS    AIC
## - 'GTEP:CDP' 1 0.0358 489.62 -14624
## - 'AH:TAT' 1 0.0732 489.66 -14624
## - 'AH:CDP' 1 0.0768 489.67 -14624
## - 'AT:TAT' 1 0.0858 489.67 -14624
## - 'TIT:TEY' 1 0.0866 489.67 -14624
## - 'AP:AFDP' 1 0.1034 489.69 -14624
## - 'GTEP:TAT' 1 0.1200 489.71 -14623
## <none> 489.59 -14623
## - 'AH:TEY' 1 0.1779 489.77 -14623
## - 'GTEP:TIT' 1 0.2018 489.79 -14622
## - 'AFDP:CDP' 1 0.2187 489.81 -14622
## - 'AT:CDP' 1 0.2289 489.82 -14622
## - 'AH:TIT' 1 0.2534 489.84 -14622
## - 'AH:GTEP' 1 0.2739 489.86 -14622
## - 'AT:TIT' 1 0.3625 489.95 -14620
## - 'AT:AFDP' 1 0.3775 489.97 -14620
## - 'GTEP:TEY' 1 0.3814 489.97 -14620
## - 'AFDP:TEY' 1 0.4351 490.02 -14620
## - 'TEY:CDP' 1 0.4658 490.05 -14619
## - AT 1 0.5114 490.10 -14619
## - 'TAT:TEY' 1 0.5906 490.18 -14618
## - TEY 1 0.5916 490.18 -14618
## - 'AP:GTEP' 1 0.7115 490.30 -14616
## - 'AT:AH' 1 0.8148 490.40 -14615

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## - 'AH:AFDP'    1  0.8981 490.49 -14614
## - GTEP         1  0.9337 490.52 -14614
## - 'AFDP:GTEP' 1  0.9363 490.52 -14614
## - CDP          1  0.9522 490.54 -14613
## - 'TIT:CDP'   1  1.0253 490.61 -14612
## - 'AT:GTEP'   1  1.2852 490.87 -14609
## - TIT          1  1.3000 490.89 -14609
## - 'AT:TEY'    1  1.3175 490.91 -14609
## - AFDP         1  1.5062 491.09 -14607
## - 'AP:AH'     1  2.1294 491.72 -14599
## - 'AFDP:TAT'  1  2.2310 491.82 -14598
## - 'AP:TAT'    1  2.7829 492.37 -14591
## - AP           1  2.8397 492.43 -14591
## - 'TIT:TAT'   1  3.1591 492.75 -14587
## - 'AP:TIT'    1  3.1768 492.77 -14587
## - 'AP:TEY'    1  4.1247 493.71 -14575
## - TAT          1  4.7303 494.32 -14568
## - 'AT:AP'     1  6.1544 495.74 -14551
##
## Step: AIC=-14624.45
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##      'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##      'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##      'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TAT' + 'AFDP:TEY' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' +
##      'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##                                     Df Sum of Sq   RSS   AIC
## - 'AT:TAT'    1  0.0954 489.72 -14625
## - 'AP:AFDP'   1  0.1014 489.73 -14625
## - 'AH:TAT'   1  0.1017 489.73 -14625
## - 'GTEP:TAT' 1  0.1035 489.73 -14625
## - 'AH:CDP'   1  0.1233 489.75 -14625
## - 'AH:TEY'   1  0.1654 489.79 -14624
## <none>              489.62 -14624
## - 'GTEP:TIT' 1  0.1908 489.81 -14624
## - 'AT:CDP'   1  0.2124 489.84 -14624
## - 'AFDP:CDP' 1  0.2203 489.84 -14624
## - 'AH:GTEP'  1  0.2813 489.91 -14623
## - 'AH:TIT'   1  0.3047 489.93 -14623
## - 'AT:AFDP'  1  0.3781 490.00 -14622
## - 'TIT:TEY'  1  0.3835 490.01 -14622
## - 'AT:TIT'   1  0.3859 490.01 -14622
## - 'GTEP:TEY' 1  0.3873 490.01 -14622
## - 'AFDP:TEY' 1  0.4327 490.06 -14621
## - AT          1  0.5000 490.12 -14620
## - 'TEY:CDP'  1  0.5310 490.16 -14620
## - TEY         1  0.5795 490.20 -14620
## - 'TAT:TEY'  1  0.6743 490.30 -14618
## - 'AP:GTEP'  1  0.7029 490.33 -14618
## - 'AT:AH'    1  0.7949 490.42 -14617
## - GTEP        1  0.9083 490.53 -14616
## - 'AH:AFDP'  1  0.9087 490.53 -14616

```

```

## - 'AFDP:GTEP' 1 0.9188 490.54 -14615
## - CDP 1 0.9569 490.58 -14615
## - 'TIT:CDP' 1 1.0229 490.65 -14614
## - 'AT:GTEP' 1 1.2748 490.90 -14611
## - TIT 1 1.2944 490.92 -14611
## - 'AT:TEY' 1 1.3264 490.95 -14610
## - AFDP 1 1.4921 491.12 -14608
## - 'AP:AH' 1 2.1100 491.73 -14601
## - 'AFDP:TAT' 1 2.2133 491.84 -14600
## - 'AP:TAT' 1 2.7646 492.39 -14593
## - AP 1 2.8212 492.45 -14592
## - 'AP:TIT' 1 3.1569 492.78 -14588
## - 'TIT:TAT' 1 3.1583 492.78 -14588
## - 'AP:TEY' 1 4.1007 493.72 -14577
## - TAT 1 4.7241 494.35 -14570
## - 'AT:AP' 1 6.1231 495.75 -14553
##
## Step: AIC=-14625.3
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TEY' + 'AT:CDP' +
##      'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' +
##      'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##              Df Sum of Sq    RSS    AIC
## - 'AP:AFDP' 1 0.1499 489.87 -14626
## - 'AFDP:CDP' 1 0.1551 489.87 -14625
## - 'GTEP:TAT' 1 0.1635 489.88 -14625
## <none>          489.72 -14625
## - 'AH:TEY' 1 0.2028 489.92 -14625
## - 'AH:CDP' 1 0.2380 489.96 -14624
## - 'AH:TAT' 1 0.2409 489.96 -14624
## - 'GTEP:TIT' 1 0.2735 489.99 -14624
## - 'AT:AFDP' 1 0.2835 490.00 -14624
## - 'AH:GTEP' 1 0.3003 490.02 -14624
## - 'TIT:TEY' 1 0.3221 490.04 -14623
## - 'AFDP:TEY' 1 0.3513 490.07 -14623
## - AT 1 0.4601 490.18 -14622
## - TEY 1 0.4973 490.22 -14621
## - 'GTEP:TEY' 1 0.5018 490.22 -14621
## - 'AH:TIT' 1 0.5282 490.25 -14621
## - 'TEY:CDP' 1 0.6425 490.36 -14620
## - 'AP:GTEP' 1 0.6474 490.37 -14620
## - 'AT:TIT' 1 0.6821 490.40 -14619
## - 'AT:AH' 1 0.7787 490.50 -14618
## - 'AH:AFDP' 1 0.8307 490.55 -14617
## - 'AFDP:GTEP' 1 0.8762 490.60 -14617
## - 'TAT:TEY' 1 0.9282 490.65 -14616
## - CDP 1 0.9513 490.67 -14616
## - GTEP 1 1.0067 490.73 -14615
## - 'TIT:CDP' 1 1.0374 490.76 -14615
## - 'AT:CDP' 1 1.0797 490.80 -14614

```

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## - TIT      1  1.2007 490.92 -14613
## - 'AT:TEY' 1  1.2518 490.97 -14612
## - 'AT:GTEP' 1  1.3580 491.08 -14611
## - AFDP     1  1.4101 491.13 -14610
## - 'AP:AH'   1  2.1330 491.85 -14602
## - 'AFDP:TAT' 1  2.2335 491.95 -14600
## - 'AP:TAT'   1  2.6870 492.41 -14595
## - AP        1  2.7316 492.45 -14594
## - 'AP:TIT'   1  3.0715 492.79 -14590
## - 'TIT:TAT'  1  3.5333 493.25 -14585
## - 'AP:TEY'   1  4.0301 493.75 -14579
## - TAT       1  4.6546 494.37 -14571
## - 'AT:AP'    1  6.0293 495.75 -14555
##
## Step: AIC=-14625.49
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##          'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TEY' + 'AT:CDP' +
##          'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##          'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##          'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##          'GTEP:TEY' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##          'TEY:CDP'
##
##              Df Sum of Sq    RSS    AIC
## <none>                    489.87 -14626
## - 'AFDP:CDP'   1  0.1999 490.07 -14625
## - 'GTEP:TAT'   1  0.2077 490.08 -14625
## - 'AH:CDP'     1  0.2582 490.13 -14624
## - 'AH:TEY'     1  0.2705 490.14 -14624
## - 'AH:TAT'     1  0.3017 490.17 -14624
## - 'GTEP:TIT'   1  0.3028 490.17 -14624
## - AT           1  0.3226 490.19 -14624
## - 'AH:GTEP'    1  0.3235 490.19 -14624
## - 'TIT:TEY'    1  0.3301 490.20 -14624
## - 'AFDP:TEY'   1  0.3406 490.21 -14623
## - 'GTEP:TEY'   1  0.4864 490.36 -14622
## - 'AT:AFDP'    1  0.5171 490.39 -14621
## - TEY          1  0.5478 490.42 -14621
## - 'AP:GTEP'    1  0.6291 490.50 -14620
## - 'AH:TIT'     1  0.6490 490.52 -14620
## - 'TEY:CDP'    1  0.6725 490.54 -14619
## - 'AFDP:GTEP'  1  0.7312 490.60 -14619
## - 'AH:AFDP'    1  0.8102 490.68 -14618
## - 'AT:AH'      1  0.9086 490.78 -14616
## - GTEP         1  0.9849 490.85 -14616
## - 'AT:TIT'     1  1.0359 490.91 -14615
## - CDP          1  1.0687 490.94 -14615
## - 'TIT:CDP'    1  1.1632 491.03 -14614
## - 'TAT:TEY'    1  1.1763 491.05 -14613
## - 'AT:CDP'     1  1.2342 491.10 -14613
## - 'AT:GTEP'    1  1.2534 491.12 -14612
## - AFDP         1  1.8012 491.67 -14606
## - TIT          1  1.8042 491.67 -14606
## - 'AT:TEY'    1  1.8361 491.71 -14605

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## - 'AFDP:TAT' 1 2.1251 491.99 -14602
## - 'AP:AH' 1 2.6472 492.52 -14596
## - AP 1 3.5828 493.45 -14584
## - 'TIT:TAT' 1 4.0298 493.90 -14579
## - 'AP:TAT' 1 4.7729 494.64 -14570
## - 'AP:TIT' 1 4.8279 494.70 -14570
## - 'AP:TEY' 1 4.9205 494.79 -14568
## - 'AT:AP' 1 5.9250 495.79 -14556
## - TAT 1 8.1143 497.98 -14530
## Start: AIC=-14339.41
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' +
##   'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##   'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AP:CDP' 1 0.0009 513.56 -14341
## - 'AT:CDP' 1 0.0061 513.57 -14341
## - 'AH:TEY' 1 0.0216 513.58 -14341
## - 'AH:CDP' 1 0.0244 513.59 -14341
## - 'AH:TAT' 1 0.0295 513.59 -14341
## - 'AP:AFDP' 1 0.0354 513.60 -14341
## - 'AH:TIT' 1 0.0431 513.61 -14341
## - 'TAT:TEY' 1 0.0452 513.61 -14341
## - 'AT:AFDP' 1 0.0622 513.63 -14341
## - 'AFDP:TEY' 1 0.0816 513.64 -14340
## - 'GTEP:CDP' 1 0.1019 513.66 -14340
## - 'TAT:CDP' 1 0.1034 513.67 -14340
## - 'TEY:CDP' 1 0.1081 513.67 -14340
## - AH 1 0.1165 513.68 -14340
## - CDP 1 0.1365 513.70 -14340
## - 'AT:TAT' 1 0.1448 513.71 -14340
## - 'AFDP:TIT' 1 0.1514 513.71 -14340
## - 'TIT:TEY' 1 0.1641 513.73 -14340
## <none> 513.56 -14339
## - 'AT:AH' 1 0.1858 513.75 -14339
## - AT 1 0.2217 513.78 -14339
## - 'AP:GTEP' 1 0.2695 513.83 -14338
## - AFDP 1 0.3156 513.88 -14338
## - 'AH:GTEP' 1 0.3496 513.91 -14337
## - 'GTEP:TAT' 1 0.3528 513.92 -14337
## - 'AFDP:CDP' 1 0.3689 513.93 -14337
## - 'GTEP:TEY' 1 0.3730 513.94 -14337
## - 'AT:TIT' 1 0.3832 513.95 -14337
## - 'AFDP:TAT' 1 0.3901 513.95 -14337
## - 'GTEP:TIT' 1 0.3908 513.95 -14337
## - 'TIT:CDP' 1 0.4312 513.99 -14336
## - TEY 1 0.4631 514.03 -14336
## - 'AH:AFDP' 1 0.5092 514.07 -14336
## - TIT 1 0.5556 514.12 -14335

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## - 'AFDP:GTEP' 1 0.5721 514.13 -14335
## - GTEP 1 0.6386 514.20 -14334
## - 'AP:TAT' 1 0.9390 514.50 -14331
## - 'AT:GTEP' 1 1.0497 514.61 -14329
## - 'AT:TEY' 1 1.1824 514.75 -14328
## - 'AP:AH' 1 1.2575 514.82 -14327
## - 'AP:TIT' 1 1.4505 515.01 -14325
## - TAT 1 1.7541 515.32 -14321
## - AP 1 2.0449 515.61 -14318
## - 'TIT:TAT' 1 2.3955 515.96 -14314
## - 'AP:TEY' 1 3.1599 516.72 -14305
## - 'AT:AP' 1 4.4758 518.04 -14290
##
## Step: AIC=-14341.4
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##   'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##   'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AT:CDP' 1 0.0052 513.57 -14343
## - 'AH:TEY' 1 0.0217 513.59 -14343
## - 'AH:CDP' 1 0.0238 513.59 -14343
## - 'AH:TAT' 1 0.0287 513.59 -14343
## - 'AP:AFDP' 1 0.0365 513.60 -14343
## - 'AH:TIT' 1 0.0424 513.61 -14343
## - 'TAT:TEY' 1 0.0454 513.61 -14343
## - 'AT:AFDP' 1 0.0617 513.63 -14343
## - 'AFDP:TEY' 1 0.0811 513.64 -14342
## - 'TAT:CDP' 1 0.1026 513.67 -14342
## - 'TEY:CDP' 1 0.1072 513.67 -14342
## - 'GTEP:CDP' 1 0.1128 513.68 -14342
## - AH 1 0.1166 513.68 -14342
## - 'AFDP:TIT' 1 0.1644 513.73 -14342
## - 'TIT:TEY' 1 0.1660 513.73 -14342
## - 'AT:TAT' 1 0.1728 513.74 -14341
## <none> 513.56 -14341
## - 'AT:AH' 1 0.1857 513.75 -14341
## - AT 1 0.2208 513.78 -14341
## - 'AP:GTEP' 1 0.2709 513.83 -14340
## - AFDP 1 0.3160 513.88 -14340
## - 'AH:GTEP' 1 0.3492 513.91 -14339
## - 'GTEP:TAT' 1 0.3603 513.92 -14339
## - 'GTEP:TEY' 1 0.3722 513.94 -14339
## - CDP 1 0.3800 513.94 -14339
## - 'GTEP:TIT' 1 0.3949 513.96 -14339
## - 'AFDP:CDP' 1 0.3971 513.96 -14339
## - 'AFDP:TAT' 1 0.4227 513.99 -14338
## - 'TIT:CDP' 1 0.4306 513.99 -14338
## - 'AT:TIT' 1 0.4607 514.02 -14338

```

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## - TEY      1  0.4645 514.03 -14338
## - 'AH:AFDP' 1  0.5089 514.07 -14338
## - 'AFDP:GTEP' 1  0.5832 514.15 -14337
## - GTEP     1  0.6378 514.20 -14336
## - TIT      1  0.9160 514.48 -14333
## - 'AT:GTEP' 1  1.0488 514.61 -14331
## - 'AT:TEY'   1  1.1820 514.75 -14330
## - 'AP:AH'    1  1.2570 514.82 -14329
## - AP       1  2.0440 515.61 -14320
## - 'AP:TAT'   1  2.2572 515.82 -14318
## - 'TIT:TAT'  1  2.4077 515.97 -14316
## - 'AP:TIT'   1  2.4648 516.03 -14315
## - 'AP:TEY'   1  3.1830 516.75 -14307
## - TAT      1  4.4133 517.98 -14293
## - 'AT:AP'    1  4.4835 518.05 -14292
##
## Step: AIC=-14343.34
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##   'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##   'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##   'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq   RSS   AIC
## - 'AH:CDP'  1  0.0186 513.59 -14345
## - 'AH:TEY'   1  0.0218 513.59 -14345
## - 'AH:TAT'   1  0.0237 513.59 -14345
## - 'AP:AFDP'  1  0.0373 513.61 -14345
## - 'AH:TIT'   1  0.0373 513.61 -14345
## - 'TAT:TEY'   1  0.0466 513.62 -14345
## - 'AT:AFDP'  1  0.0568 513.63 -14345
## - 'AFDP:TEY' 1  0.0762 513.65 -14344
## - 'TAT:CDP'   1  0.1014 513.67 -14344
## - 'GTEP:CDP' 1  0.1088 513.68 -14344
## - AH        1  0.1163 513.69 -14344
## - 'TEY:CDP'  1  0.1373 513.71 -14344
## <none>           513.57 -14343
## - 'AT:AH'    1  0.1836 513.75 -14343
## - AT        1  0.2399 513.81 -14343
## - 'AP:GTEP'  1  0.2745 513.84 -14342
## - AFDP      1  0.3130 513.88 -14342
## - 'TIT:TEY'  1  0.3233 513.89 -14342
## - 'AH:GTEP'  1  0.3502 513.92 -14341
## - 'GTEP:TAT' 1  0.3568 513.93 -14341
## - 'GTEP:TEY' 1  0.3672 513.94 -14341
## - 'GTEP:TIT' 1  0.3924 513.96 -14341
## - CDP       1  0.3982 513.97 -14341
## - 'TIT:CDP'  1  0.4432 514.01 -14340
## - 'AFDP:TIT' 1  0.4540 514.02 -14340
## - 'AH:AFDP'  1  0.5038 514.07 -14340
## - TEY       1  0.5216 514.09 -14339

```

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## - 'AFDP:GTEP' 1 0.5929 514.16 -14338
## - GTEP 1 0.6361 514.21 -14338
## - 'AT:TAT' 1 0.8016 514.37 -14336
## - TIT 1 0.9769 514.55 -14334
## - 'AT:GTEP' 1 1.0453 514.61 -14333
## - 'AFDP:CDP' 1 1.0826 514.65 -14333
## - 'AFDP:TAT' 1 1.1380 514.71 -14332
## - 'AT:TEY' 1 1.1774 514.75 -14332
## - 'AP:AH' 1 1.2545 514.82 -14331
## - 'AT:TIT' 1 1.5895 515.16 -14327
## - AP 1 2.0389 515.61 -14322
## - 'AP:TAT' 1 2.2683 515.84 -14319
## - 'AP:TIT' 1 2.4665 516.04 -14317
## - 'TIT:TAT' 1 2.5870 516.16 -14316
## - 'AP:TEY' 1 3.1955 516.76 -14309
## - TAT 1 4.4129 517.98 -14295
## - 'AT:AP' 1 4.4867 518.06 -14294
##
## Step: AIC=-14345.13
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##      'AT:TEY' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##      'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##      'AH:TEY' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' +
##      'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' +
##      'TEY:CDP'
##
##                                     Df Sum of Sq    RSS     AIC
## - 'AH:TAT' 1 0.0068 513.59 -14347
## - 'AH:TIT' 1 0.0195 513.61 -14347
## - 'AH:TEY' 1 0.0260 513.61 -14347
## - 'AP:AFDP' 1 0.0363 513.62 -14347
## - 'TAT:TEY' 1 0.0604 513.65 -14346
## - 'AT:AFDP' 1 0.0630 513.65 -14346
## - 'AFDP:TEY' 1 0.0837 513.67 -14346
## - 'TAT:CDP' 1 0.1086 513.70 -14346
## - AH 1 0.1204 513.71 -14346
## - 'GTEP:CDP' 1 0.1538 513.74 -14345
## <none> 513.59 -14345
## - 'TEY:CDP' 1 0.1838 513.77 -14345
## - 'AT:AH' 1 0.1949 513.78 -14345
## - AT 1 0.2351 513.82 -14344
## - 'AP:GTEP' 1 0.2709 513.86 -14344
## - 'TIT:TEY' 1 0.3059 513.89 -14344
## - AFDP 1 0.3249 513.91 -14343
## - 'AH:GTEP' 1 0.3502 513.94 -14343
## - 'GTEP:TEY' 1 0.3853 513.97 -14343
## - 'AFDP:TIT' 1 0.4401 514.03 -14342
## - 'GTEP:TAT' 1 0.4432 514.03 -14342
## - CDP 1 0.4496 514.04 -14342
## - 'GTEP:TIT' 1 0.4716 514.06 -14342
## - 'TIT:CDP' 1 0.4856 514.07 -14342
## - 'AH:AFDP' 1 0.5003 514.09 -14341

```

```

## - TEY      1  0.5128 514.10 -14341
## - 'AFDP:GTEP' 1  0.5878 514.18 -14340
## - GTEP     1  0.6729 514.26 -14339
## - 'AT:TAT' 1  0.8196 514.41 -14338
## - TIT      1  0.9792 514.57 -14336
## - 'AT:GTEP' 1  1.0751 514.66 -14335
## - 'AFDP:CDP' 1  1.0802 514.67 -14335
## - 'AFDP:TAT' 1  1.1223 514.71 -14334
## - 'AT:TEY'  1  1.1779 514.77 -14334
## - 'AP:AH'   1  1.2707 514.86 -14332
## - 'AT:TIT'  1  1.6324 515.22 -14328
## - AP       1  2.0579 515.65 -14324
## - 'AP:TAT'  1  2.2812 515.87 -14321
## - 'AP:TIT'  1  2.4830 516.07 -14319
## - 'TIT:TAT' 1  2.6422 516.23 -14317
## - 'AP:TEY'  1  3.2064 516.79 -14310
## - TAT      1  4.4878 518.08 -14296
## - 'AT:AP'   1  4.5087 518.10 -14296
##
## Step: AIC=-14347.05
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TEY' +
##   'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' +
##   'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' +
##   'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##                                     Df Sum of Sq    RSS    AIC
## - 'AP:AFDP'   1  0.0336 513.63 -14349
## - 'AH:TIT'    1  0.0586 513.65 -14348
## - 'TAT:TEY'   1  0.0591 513.65 -14348
## - 'AH:TEY'    1  0.0697 513.66 -14348
## - 'AT:AFDP'   1  0.0845 513.68 -14348
## - 'AFDP:TEY'  1  0.0848 513.68 -14348
## - 'TAT:CDP'   1  0.1185 513.71 -14348
## - 'GTEP:CDP'  1  0.1505 513.74 -14347
## <none>                  513.59 -14347
## - 'TEY:CDP'   1  0.1964 513.79 -14347
## - AH          1  0.2140 513.81 -14347
## - AT          1  0.2287 513.82 -14346
## - 'AT:AH'     1  0.2604 513.85 -14346
## - 'AP:GTEP'   1  0.2642 513.86 -14346
## - 'TIT:TEY'   1  0.3100 513.90 -14346
## - AFDP        1  0.3271 513.92 -14345
## - 'AH:GTEP'   1  0.3438 513.94 -14345
## - 'AFDP:TIT'  1  0.4392 514.03 -14344
## - 'GTEP:TEY'  1  0.4449 514.04 -14344
## - CDP         1  0.4635 514.06 -14344
## - 'GTEP:TAT' 1  0.4896 514.08 -14343
## - 'TIT:CDP'   1  0.5202 514.11 -14343
## - TEY         1  0.5238 514.12 -14343
## - 'GTEP:TIT' 1  0.5244 514.12 -14343
## - 'AFDP:GTEP' 1  0.5818 514.18 -14342

```

```

## - GTEP      1  0.7116 514.31 -14341
## - 'AH:AFDP' 1  0.9086 514.50 -14339
## - TIT       1  1.0099 514.60 -14337
## - 'AT:TAT'  1  1.0518 514.65 -14337
## - 'AFDP:CDP' 1  1.0994 514.69 -14336
## - 'AFDP:TAT' 1  1.1323 514.73 -14336
## - 'AT:GTEP'  1  1.1630 514.76 -14336
## - 'AP:AH'    1  1.3791 514.97 -14333
## - 'AT:TEY'   1  1.5334 515.13 -14331
## - AP        1  2.0597 515.65 -14325
## - 'AT:TIT'   1  2.1656 515.76 -14324
## - 'AP:TAT'   1  2.3573 515.95 -14322
## - 'AP:TIT'   1  2.5291 516.12 -14320
## - 'TIT:TAT'  1  2.6453 516.24 -14319
## - 'AP:TEY'   1  3.2411 516.84 -14312
## - 'AT:AP'    1  4.5020 518.10 -14298
## - TAT       1  4.6815 518.28 -14295
##
## Step: AIC=-14348.66
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##      'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TEY' + 'AFDP:GTEP' +
##      'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##      'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq   RSS   AIC
## - 'AH:TIT'  1  0.0471 513.68 -14350
## - 'AH:TEY'  1  0.0605 513.69 -14350
## - 'TAT:TEY' 1  0.0629 513.69 -14350
## - 'AFDP:TEY' 1  0.1055 513.73 -14350
## - 'GTEP:CDP' 1  0.1429 513.77 -14349
## - 'TAT:CDP'  1  0.1494 513.78 -14349
## - 'AT:AFDP'  1  0.1737 513.80 -14349
## <none>           513.63 -14349
## - AT        1  0.1951 513.82 -14348
## - 'TEY:CDP' 1  0.2279 513.86 -14348
## - 'AP:GTEP'  1  0.2599 513.89 -14348
## - 'AT:AH'    1  0.2649 513.89 -14348
## - AH        1  0.3058 513.93 -14347
## - 'TIT:TEY'  1  0.3204 513.95 -14347
## - AFDP      1  0.3383 513.97 -14347
## - 'AH:GTEP'  1  0.3593 513.99 -14346
## - 'AFDP:TIT' 1  0.4124 514.04 -14346
## - 'GTEP:TEY' 1  0.4658 514.09 -14345
## - CDP       1  0.5043 514.13 -14345
## - 'GTEP:TAT' 1  0.5254 514.15 -14345
## - 'GTEP:TIT' 1  0.5588 514.19 -14344
## - 'AFDP:GTEP' 1  0.5636 514.19 -14344
## - TEY       1  0.5848 514.21 -14344
## - 'TIT:CDP'  1  0.6177 514.25 -14344
## - GTEP      1  0.7421 514.37 -14342
## - 'AH:AFDP' 1  0.9496 514.58 -14340

```

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## - 'AFDP:TAT' 1 1.0989 514.73 -14338
## - 'AT:GTEP' 1 1.1458 514.77 -14338
## - 'AFDP:CDP' 1 1.1757 514.80 -14337
## - 'AT:TAT' 1 1.2346 514.86 -14336
## - TIT 1 1.4419 515.07 -14334
## - 'AP:AH' 1 1.8357 515.46 -14330
## - 'AT:TEY' 1 2.0189 515.65 -14328
## - AP 1 2.6290 516.26 -14320
## - 'TIT:TAT' 1 2.7278 516.36 -14319
## - 'AT:TIT' 1 2.9804 516.61 -14316
## - 'AP:TIT' 1 3.8306 517.46 -14307
## - 'AP:TEY' 1 3.9018 517.53 -14306
## - 'AP:TAT' 1 3.9455 517.57 -14306
## - 'AT:AP' 1 4.5722 518.20 -14298
## - TAT 1 7.7178 521.35 -14263
##
## Step: AIC=-14350.12
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##      'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TEY' + 'AFDP:GTEP' + 'AFDP:TIT' +
##      'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##      'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##      'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS     AIC
## - 'AH:TEY' 1 0.0145 513.69 -14352
## - 'TAT:TEY' 1 0.0634 513.74 -14351
## - 'AFDP:TEY' 1 0.1193 513.79 -14351
## - 'GTEP:CDP' 1 0.1422 513.82 -14350
## - 'TAT:CDP' 1 0.1626 513.84 -14350
## - AT 1 0.1643 513.84 -14350
## - 'AT:AFDP' 1 0.1722 513.85 -14350
## <none> 513.68 -14350
## - 'AT:AH' 1 0.2213 513.90 -14350
## - 'TEY:CDP' 1 0.2372 513.91 -14349
## - 'AP:GTEP' 1 0.2708 513.95 -14349
## - AFDP 1 0.3078 513.98 -14349
## - 'TIT:TEY' 1 0.3256 514.00 -14348
## - 'AFDP:TIT' 1 0.3997 514.07 -14348
## - 'AH:GTEP' 1 0.4098 514.08 -14347
## - 'GTEP:TEY' 1 0.4843 514.16 -14347
## - CDP 1 0.5009 514.18 -14346
## - 'GTEP:TAT' 1 0.5304 514.21 -14346
## - 'AFDP:GTEP' 1 0.5510 514.23 -14346
## - TEY 1 0.5701 514.25 -14346
## - 'GTEP:TIT' 1 0.5822 514.26 -14345
## - 'TIT:CDP' 1 0.6364 514.31 -14345
## - GTEP 1 0.8379 514.51 -14342
## - 'AH:AFDP' 1 0.9255 514.60 -14342
## - 'AFDP:TAT' 1 1.0569 514.73 -14340
## - 'AT:GTEP' 1 1.1759 514.85 -14339
## - 'AFDP:CDP' 1 1.1882 514.86 -14338
## - 'AT:TAT' 1 1.1882 514.86 -14338

```

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## - TIT      1  1.4156 515.09 -14336
## - AH       1  1.8938 515.57 -14330
## - 'AP:AH'  1  1.9493 515.62 -14330
## - 'AT:TEY' 1  1.9727 515.65 -14330
## - AP       1  2.6630 516.34 -14322
## - 'TIT:TAT' 1  2.7905 516.47 -14320
## - 'AT:TIT'  1  2.9461 516.62 -14318
## - 'AP:TIT'  1  3.7948 517.47 -14309
## - 'AP:TEY'  1  3.8655 517.54 -14308
## - 'AP:TAT'  1  3.8986 517.57 -14308
## - 'AT:AP'   1  4.5263 518.20 -14300
## - TAT      1  7.6716 521.35 -14264
##
## Step: AIC=-14351.96
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##   'AH:AFDP' + 'AH:GTEP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##   'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##   'TAT:CDP' + 'TEY:CDP'
##
##             Df Sum of Sq    RSS   AIC
## - 'TAT:TEY'  1  0.0603 513.75 -14353
## - 'AFDP:TEY' 1  0.1229 513.81 -14352
## - 'GTEP:CDP' 1  0.1391 513.83 -14352
## - 'AT:AFDP'  1  0.1633 513.85 -14352
## - 'TAT:CDP'  1  0.1654 513.85 -14352
## <none>           513.69 -14352
## - AT       1  0.1869 513.88 -14352
## - 'TEY:CDP' 1  0.2383 513.93 -14351
## - 'AT:AH'   1  0.2488 513.94 -14351
## - 'AP:GTEP' 1  0.2850 513.97 -14351
## - 'TIT:TEY' 1  0.3273 514.02 -14350
## - AFDP     1  0.3380 514.03 -14350
## - 'AFDP:TIT' 1  0.3950 514.08 -14349
## - 'GTEP:TEY' 1  0.4938 514.18 -14348
## - CDP      1  0.5012 514.19 -14348
## - 'GTEP:TAT' 1  0.5305 514.22 -14348
## - 'AFDP:GTEP' 1  0.5636 514.25 -14348
## - 'GTEP:TIT' 1  0.5845 514.27 -14347
## - TEY      1  0.5862 514.28 -14347
## - 'TIT:CDP' 1  0.6413 514.33 -14347
## - 'AH:GTEP' 1  0.8038 514.49 -14345
## - GTEP     1  0.8638 514.55 -14344
## - 'AFDP:TAT' 1  1.0631 514.75 -14342
## - 'AT:GTEP' 1  1.1656 514.86 -14341
## - 'AT:TAT'  1  1.1738 514.86 -14340
## - 'AFDP:CDP' 1  1.1926 514.88 -14340
## - TIT      1  1.4302 515.12 -14338
## - 'AH:AFDP' 1  1.5935 515.28 -14336
## - AH       1  1.8854 515.57 -14332
## - 'AP:AH'  1  1.9630 515.65 -14331
## - 'AT:TEY' 1  1.9770 515.67 -14331

```

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## - AP          1  2.6600 516.35 -14323
## - 'TIT:TAT'  1  2.7760 516.47 -14322
## - 'AT:TIT'   1  3.0363 516.73 -14319
## - 'AP:TIT'   1  3.8113 517.50 -14310
## - 'AP:TEY'   1  3.8957 517.59 -14309
## - 'AP:TAT'   1  3.9323 517.62 -14309
## - 'AT:AP'    1  4.5181 518.21 -14302
## - TAT        1  7.6779 521.37 -14266
##
## Step: AIC=-14353.26
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##      'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##      'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##      'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:CDP' +
##      'TEY:CDP'
##
##             Df Sum of Sq   RSS   AIC
## - 'GTEP:CDP'  1  0.0846 513.83 -14354
## - 'AFDP:TEY'  1  0.1452 513.90 -14354
## <none>           513.75 -14353
## - 'AT:AFDP'   1  0.1810 513.93 -14353
## - 'TEY:CDP'   1  0.1968 513.95 -14353
## - 'AT:AH'     1  0.2451 514.00 -14352
## - 'AP:GTEP'   1  0.2655 514.02 -14352
## - AFDP        1  0.3489 514.10 -14351
## - CDP         1  0.4415 514.19 -14350
## - AT          1  0.4561 514.21 -14350
## - 'AFDP:TIT'  1  0.4795 514.23 -14350
## - 'GTEP:TAT'  1  0.4989 514.25 -14350
## - 'TAT:CDP'   1  0.5012 514.25 -14350
## - 'AFDP:GTEP' 1  0.5723 514.32 -14349
## - 'GTEP:TIT'  1  0.5897 514.34 -14348
## - 'GTEP:TEY'  1  0.7013 514.45 -14347
## - 'TIT:CDP'   1  0.7572 514.51 -14347
## - 'AH:GTEP'   1  0.8219 514.57 -14346
## - 'TIT:TEY'   1  0.8250 514.57 -14346
## - TEY         1  1.0680 514.82 -14343
## - GTEP        1  1.0834 514.83 -14343
## - 'AFDP:TAT'  1  1.2739 515.02 -14341
## - 'AT:GTEP'   1  1.4711 515.22 -14338
## - 'AH:AFDP'   1  1.5998 515.35 -14337
## - 'AFDP:CDP'  1  1.6743 515.42 -14336
## - 'AT:TAT'   1  1.7964 515.55 -14335
## - TIT         1  1.8538 515.60 -14334
## - AH          1  1.9145 515.66 -14333
## - 'AT:TEY'   1  1.9230 515.67 -14333
## - 'AP:AH'    1  1.9911 515.74 -14332
## - AP          1  2.7101 516.46 -14324
## - 'AT:TIT'   1  3.0674 516.82 -14320
## - 'TIT:TAT'  1  3.8222 517.57 -14312
## - 'AP:TIT'   1  4.0846 517.83 -14308
## - 'AP:TEY'   1  4.1556 517.91 -14308

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## - 'AP:TAT'      1    4.3865 518.14 -14305
## - 'AT:AP'       1    4.8036 518.55 -14300
## - TAT          1    7.6331 521.38 -14268
##
## Step: AIC=-14354.29
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##   'AH:AFDP' + 'AH:GTEP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##   'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##   'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'AFDP:TEY'  1    0.1437 513.98 -14355
## - 'TEY:CDP'   1    0.1462 513.98 -14355
## <none>          513.83 -14354
## - 'AT:AFDP'   1    0.1810 514.02 -14354
## - 'AP:GTEP'   1    0.2454 514.08 -14354
## - 'AT:AH'     1    0.2502 514.08 -14353
## - AFDP        1    0.3475 514.18 -14352
## - AT          1    0.3748 514.21 -14352
## - 'AFDP:TIT'  1    0.4144 514.25 -14352
## - 'TAT:CDP'   1    0.4419 514.28 -14351
## - 'GTEP:TAT'  1    0.4457 514.28 -14351
## - 'GTEP:TIT'  1    0.5150 514.35 -14350
## - 'AFDP:GTEP' 1    0.5296 514.36 -14350
## - CDP         1    0.6336 514.47 -14349
## - 'GTEP:TEY'  1    0.7054 514.54 -14348
## - 'TIT:CDP'   1    0.7965 514.63 -14347
## - 'AH:GTEP'   1    0.8376 514.67 -14347
## - TEY         1    0.9879 514.82 -14345
## - GTEP        1    1.0322 514.87 -14344
## - 'AFDP:TAT'  1    1.1897 515.02 -14343
## - 'AT:GTEP'   1    1.4369 515.27 -14340
## - 'TIT:TEY'   1    1.5153 515.35 -14339
## - 'AFDP:CDP'  1    1.5955 515.43 -14338
## - 'AH:AFDP'   1    1.6166 515.45 -14338
## - 'AT:TAT'    1    1.7133 515.55 -14337
## - TIT         1    1.7710 515.61 -14336
## - AH          1    1.8820 515.72 -14335
## - 'AP:AH'     1    1.9575 515.79 -14334
## - 'AT:TEY'    1    1.9679 515.80 -14334
## - AP          1    2.6804 516.51 -14326
## - 'AT:TIT'    1    3.1258 516.96 -14320
## - 'AP:TIT'    1    4.0105 517.84 -14310
## - 'AP:TEY'    1    4.0772 517.91 -14310
## - 'AP:TAT'    1    4.3026 518.14 -14307
## - 'AT:AP'     1    4.7280 518.56 -14302
## - 'TIT:TAT'   1    5.0810 518.92 -14298
## - TAT         1    7.7723 521.61 -14268
##
## Step: AIC=-14354.64
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +

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##      'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' +
##      'TIT:TEY' + 'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AT:AFDP'     1   0.0390 514.02 -14356
## - 'TEY:CDP'     1   0.0480 514.03 -14356
## <none>           513.98 -14355
## - 'AP:GTEP'     1   0.2177 514.20 -14354
## - AFDP          1   0.2435 514.22 -14354
## - 'TAT:CDP'     1   0.3029 514.28 -14353
## - AT            1   0.3438 514.32 -14353
## - 'AT:AH'       1   0.3633 514.34 -14352
## - 'GTEP:TAT'    1   0.4497 514.43 -14352
## - CDP           1   0.4900 514.47 -14351
## - 'AFDP:GTEP'   1   0.4918 514.47 -14351
## - 'GTEP:TIT'    1   0.5273 514.51 -14351
## - 'TIT:CDP'     1   0.6914 514.67 -14349
## - 'GTEP:TEY'    1   0.7111 514.69 -14348
## - 'AH:GTEP'     1   0.8531 514.83 -14347
## - GTEP          1   1.0396 515.02 -14345
## - TEY           1   1.1502 515.13 -14343
## - 'TIT:TEY'     1   1.3721 515.35 -14341
## - 'AFDP:CDP'   1   1.4532 515.43 -14340
## - 'AT:GTEP'     1   1.4643 515.44 -14340
## - 'AH:AFDP'     1   1.6403 515.62 -14338
## - 'AT:TAT'      1   1.7070 515.69 -14337
## - TIT           1   1.8708 515.85 -14335
## - 'AFDP:TIT'    1   1.8776 515.86 -14335
## - AH            1   1.9786 515.96 -14334
## - 'AP:AH'       1   2.0521 516.03 -14333
## - 'AFDP:TAT'    1   2.3757 516.35 -14329
## - AP            1   2.6092 516.59 -14327
## - 'AT:TEY'      1   2.8612 516.84 -14324
## - 'AT:TIT'      1   3.0820 517.06 -14321
## - 'AP:TIT'      1   3.9487 517.93 -14311
## - 'AP:TEY'      1   4.0143 517.99 -14311
## - 'AP:TAT'      1   4.2648 518.24 -14308
## - 'AT:AP'       1   4.5848 518.56 -14304
## - 'TIT:TAT'     1   4.9493 518.93 -14300
## - TAT           1   7.7093 521.69 -14269
##
## Step:  AIC=-14356.19
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##      'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##      'AH:GTEP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##      'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'TEY:CDP'     1   0.0530 514.07 -14358
## <none>           514.02 -14356

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```

## - 'AP:GTEP'    1  0.1892 514.21 -14356
## - AFDP        1  0.2047 514.22 -14356
## - 'AT:AH'      1  0.3333 514.35 -14354
## - 'TAT:CDP'    1  0.3469 514.36 -14354
## - AT          1  0.3810 514.40 -14354
## - 'AFDP:GTEP'  1  0.4599 514.48 -14353
## - CDP         1  0.4606 514.48 -14353
## - 'GTEP:TAT'   1  0.4956 514.51 -14352
## - 'GTEP:TIT'   1  0.5702 514.59 -14352
## - 'TIT:CDP'    1  0.6972 514.71 -14350
## - 'GTEP:TEY'   1  0.7511 514.77 -14350
## - 'AH:GTEP'    1  0.8363 514.85 -14349
## - GTEP        1  1.0351 515.05 -14346
## - TEY         1  1.1230 515.14 -14345
## - 'TIT:TEY'    1  1.3478 515.36 -14343
## - 'AFDP:CDP'   1  1.4472 515.46 -14342
## - 'AT:GTEP'    1  1.5192 515.54 -14341
## - 'AH:AFDP'    1  1.7587 515.78 -14338
## - TIT          1  1.8355 515.85 -14337
## - 'AFDP:TIT'   1  1.8602 515.88 -14337
## - AH          1  1.9493 515.97 -14336
## - 'AP:AH'      1  2.0226 516.04 -14335
## - 'AFDP:TAT'   1  2.3428 516.36 -14331
## - 'AT:TAT'     1  2.3466 516.36 -14331
## - AP          1  2.5704 516.59 -14329
## - 'AP:TIT'     1  3.9101 517.93 -14313
## - 'AP:TEY'     1  3.9805 518.00 -14313
## - 'AP:TAT'     1  4.2267 518.24 -14310
## - 'AT:AP'      1  4.5563 518.57 -14306
## - 'TIT:TAT'    1  4.9232 518.94 -14302
## - 'AT:TIT'     1  4.9802 519.00 -14301
## - 'AT:TEY'     1  5.5237 519.54 -14295
## - TAT          1  7.6864 521.70 -14270
##
## Step: AIC=-14357.58
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##   'AH:GTEP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##   'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:CDP'
##
##                               Df Sum of Sq    RSS     AIC
## <none>                      514.07 -14358
## - AFDP        1  0.1951 514.27 -14357
## - 'AT:AH'     1  0.3075 514.38 -14356
## - 'AP:GTEP'   1  0.3159 514.39 -14356
## - AT          1  0.3387 514.41 -14356
## - CDP         1  0.4096 514.48 -14355
## - 'AFDP:GTEP' 1  0.5704 514.64 -14353
## - 'AH:GTEP'   1  0.8041 514.87 -14350
## - 'GTEP:TAT'  1  0.8219 514.89 -14350
## - 'TAT:CDP'   1  0.8251 514.90 -14350
## - TEY         1  1.0700 515.14 -14347

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## - 'GTEP:TIT'    1    1.1276 515.20 -14347
## - 'TIT:CDP'    1    1.2975 515.37 -14345
## - GTEP          1    1.4312 515.50 -14343
## - 'AFDP:CDP'   1    1.5425 515.61 -14342
## - 'GTEP:TEY'   1    1.6082 515.68 -14341
## - 'TIT:TEY'    1    1.7311 515.80 -14340
## - 'AH:AFDP'    1    1.7379 515.81 -14340
## - TIT           1    1.7830 515.85 -14339
## - AH            1    1.9451 516.02 -14337
## - 'AP:AH'       1    2.0220 516.09 -14336
## - 'AFDP:TIT'   1    2.1021 516.17 -14336
## - 'AT:GTEP'    1    2.3393 516.41 -14333
## - AP            1    2.5217 516.59 -14331
## - 'AFDP:TAT'   1    2.6164 516.69 -14330
## - 'AT:TAT'     1    3.7306 517.80 -14317
## - 'AP:TIT'     1    3.9399 518.01 -14314
## - 'AP:TEY'     1    3.9524 518.02 -14314
## - 'AP:TAT'     1    4.3227 518.39 -14310
## - 'AT:AP'       1    4.5257 518.60 -14308
## - 'AT:TEY'     1    5.5319 519.60 -14296
## - 'TIT:TAT'    1    5.6793 519.75 -14295
## - 'AT:TIT'     1    6.1122 520.18 -14290
## - TAT           1    7.6506 521.72 -14272
## Start: AIC=-14519.29
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##      'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##      'AP:TAT' + 'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' +
##      'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##      'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##      'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq    RSS    AIC
## - 'AT:CDP'    1    0.0001 497.87 -14521
## - 'TAT:CDP'   1    0.0023 497.87 -14521
## - 'AFDP:TEY'  1    0.0131 497.88 -14521
## - 'AT:AFDP'   1    0.0168 497.89 -14521
## - AH          1    0.0291 497.90 -14521
## - 'TEY:CDP'   1    0.0657 497.94 -14520
## - 'TIT:TEY'   1    0.0824 497.95 -14520
## - 'GTEP:CDP'  1    0.0867 497.96 -14520
## - 'AH:CDP'    1    0.0941 497.96 -14520
## - 'AFDP:TIT'  1    0.1057 497.98 -14520
## - 'AT:TAT'    1    0.1152 497.98 -14520
## - 'AP:AFDP'   1    0.1193 497.99 -14520
## - 'AP:CDP'    1    0.1297 498.00 -14520
## <none>          497.87 -14519
## - 'TAT:TEY'   1    0.1960 498.07 -14519
## - 'AFDP:CDP'  1    0.1970 498.07 -14519
## - TEY          1    0.2220 498.09 -14519
## - 'AH:TAT'    1    0.2302 498.10 -14519
## - 'GTEP:TAT'  1    0.2397 498.11 -14518
## - 'TIT:CDP'   1    0.2657 498.14 -14518

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## - AT          1  0.2686 498.14 -14518
## - 'GTEP:TEY' 1  0.2705 498.14 -14518
## - 'AH:TEY'   1  0.2815 498.15 -14518
## - 'GTEP:TIT' 1  0.2902 498.16 -14518
## - 'AT:TIT'   1  0.3223 498.19 -14518
## - 'AH:TIT'   1  0.3906 498.26 -14517
## - 'AP:GTEP'  1  0.3909 498.26 -14517
## - 'AFDP:TAT' 1  0.3992 498.27 -14517
## - 'AFDP:GTEP' 1  0.4373 498.31 -14516
## - 'AH:AFDP'  1  0.5318 498.40 -14515
## - CDP        1  0.6138 498.48 -14514
## - TIT        1  0.6817 498.55 -14513
## - 'AT:GTEP'  1  0.6847 498.55 -14513
## - GTEP       1  0.7083 498.58 -14513
## - 'AT:AH'    1  0.7206 498.59 -14513
## - 'AH:GTEP'  1  0.7259 498.60 -14513
## - AFDP       1  0.7673 498.64 -14512
## - 'AT:TEY'   1  1.0359 498.91 -14509
## - AP         1  1.3334 499.20 -14506
## - 'AP:AH'   1  1.4122 499.28 -14505
## - 'AP:TAT'  1  1.4958 499.37 -14504
## - 'AP:TIT'  1  1.7899 499.66 -14500
## - 'AP:TEY'  1  2.6677 500.54 -14490
## - TAT        1  2.7177 500.59 -14489
## - 'TIT:TAT' 1  3.1182 500.99 -14484
## - 'AT:AP'   1  4.2535 502.12 -14471
##
## Step: AIC=-14521.29
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##   'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##   'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##                                     Df Sum of Sq    RSS     AIC
## - 'TAT:CDP'      1  0.0024 497.87 -14523
## - 'AFDP:TEY'     1  0.0132 497.88 -14523
## - 'AT:AFDP'      1  0.0170 497.89 -14523
## - AH            1  0.0291 497.90 -14523
## - 'GTEP:CDP'     1  0.0866 497.96 -14522
## - 'TEY:CDP'      1  0.1048 497.97 -14522
## - 'AP:AFDP'      1  0.1205 497.99 -14522
## - 'AH:CDP'       1  0.1232 497.99 -14522
## - 'TIT:TEY'      1  0.1323 498.00 -14522
## - 'AP:CDP'       1  0.1603 498.03 -14521
## <none>                  497.87 -14521
## - TEY           1  0.2327 498.10 -14520
## - 'GTEP:TAT'    1  0.2436 498.11 -14520
## - 'AFDP:TIT'    1  0.2479 498.12 -14520
## - 'AH:TAT'      1  0.2684 498.14 -14520
## - 'GTEP:TEY'    1  0.2763 498.15 -14520

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## - AT          1  0.2767 498.15 -14520
## - 'AH:TEY'   1  0.2820 498.15 -14520
## - 'TAT:TEY'  1  0.2903 498.16 -14520
## - 'TIT:CDP'  1  0.2908 498.16 -14520
## - 'GTEP:TIT' 1  0.2970 498.17 -14520
## - 'AP:GTEP'  1  0.3940 498.26 -14519
## - 'AH:TIT'   1  0.4371 498.31 -14518
## - 'AFDP:GTEP' 1  0.4432 498.31 -14518
## - 'AT:TAT'   1  0.4810 498.35 -14518
## - 'AFDP:CDP' 1  0.4875 498.36 -14518
## - 'AH:AFDP'  1  0.5337 498.40 -14517
## - CDP        1  0.6233 498.49 -14516
## - 'AT:GTEP'  1  0.6932 498.56 -14515
## - 'AT:AH'    1  0.7205 498.59 -14515
## - GTEP       1  0.7259 498.60 -14515
## - 'AH:GTEP'  1  0.7264 498.60 -14515
## - AFDP       1  0.7859 498.66 -14514
## - TIT        1  0.8108 498.68 -14514
## - 'AFDP:TAT' 1  0.9995 498.87 -14511
## - 'AT:TEY'   1  1.0399 498.91 -14511
## - 'AT:TIT'   1  1.1083 498.98 -14510
## - AP         1  1.3349 499.20 -14508
## - 'AP:AH'   1  1.4121 499.28 -14507
## - 'AP:TAT'  1  1.6917 499.56 -14503
## - 'AP:TIT'  1  1.9346 499.80 -14500
## - 'AP:TEY'  1  2.6678 500.54 -14492
## - TAT        1  3.0289 500.90 -14488
## - 'TIT:TAT' 1  3.3516 501.22 -14484
## - 'AT:AP'   1  4.2541 502.12 -14473
##
## Step: AIC=-14523.26
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##   'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##   'TAT:TEY' + 'TEY:CDP'
##
##               Df Sum of Sq   RSS   AIC
## - 'AFDP:TEY' 1  0.0235 497.90 -14525
## - 'AT:AFDP'  1  0.0256 497.90 -14525
## - AH        1  0.0274 497.90 -14525
## - 'GTEP:CDP' 1  0.0842 497.96 -14524
## - 'AP:AFDP'  1  0.1185 497.99 -14524
## - 'AH:CDP'  1  0.1214 497.99 -14524
## - 'TIT:TEY'  1  0.1484 498.02 -14524
## - 'AP:CDP'  1  0.1580 498.03 -14523
## <none>           497.87 -14523
## - 'TEY:CDP'  1  0.1765 498.05 -14523
## - 'AFDP:TIT' 1  0.2507 498.12 -14522
## - 'AH:TAT'   1  0.2667 498.14 -14522
## - 'AH:TEY'   1  0.2805 498.15 -14522

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## - TEY      1  0.2959 498.17 -14522
## - AT       1  0.3213 498.19 -14521
## - 'GTEP:TAT' 1  0.3487 498.22 -14521
## - 'TAT:TEY' 1  0.3742 498.25 -14521
## - 'AP:GTEP' 1  0.4162 498.29 -14520
## - 'AH:TIT' 1  0.4384 498.31 -14520
## - 'GTEP:TIT' 1  0.4659 498.34 -14520
## - 'AFDP:GTEP' 1  0.4838 498.36 -14520
## - 'AH:AFDP' 1  0.5440 498.42 -14519
## - 'GTEP:TEY' 1  0.5889 498.46 -14518
## - 'AFDP:CDP' 1  0.6017 498.47 -14518
## - CDP      1  0.6211 498.49 -14518
## - 'AT:TAT' 1  0.6866 498.56 -14517
## - 'AT:AH'   1  0.7220 498.59 -14517
## - 'AH:GTEP' 1  0.7286 498.60 -14517
## - 'TIT:CDP' 1  0.7513 498.62 -14516
## - AFDP     1  0.8024 498.67 -14516
## - TIT      1  0.8639 498.74 -14515
## - 'AT:GTEP' 1  1.0051 498.88 -14513
## - 'AFDP:TAT' 1  1.0180 498.89 -14513
## - 'AT:TEY'  1  1.0393 498.91 -14513
## - GTEP     1  1.0419 498.91 -14513
## - 'AT:TIT'  1  1.2206 499.09 -14511
## - AP       1  1.3923 499.26 -14509
## - 'AP:AH'   1  1.4100 499.28 -14509
## - 'AP:TAT'  1  1.7710 499.64 -14504
## - 'AP:TIT'  1  2.0272 499.90 -14501
## - 'AP:TEY'  1  2.8715 500.74 -14491
## - TAT      1  3.0266 500.90 -14490
## - 'TIT:TAT' 1  3.8913 501.76 -14479
## - 'AT:AP'   1  4.4321 502.30 -14473
##
## Step: AIC=-14524.98
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##   'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AT:AFDP' 1  0.0048 497.90 -14527
## - AH        1  0.0268 497.92 -14527
## - 'GTEP:CDP' 1  0.0786 497.97 -14526
## - 'AP:AFDP' 1  0.1275 498.02 -14526
## - 'AH:CDP' 1  0.1331 498.03 -14525
## - 'TIT:TEY' 1  0.1348 498.03 -14525
## - 'AP:CDP' 1  0.1466 498.04 -14525
## - 'TEY:CDP' 1  0.1537 498.05 -14525
## <none>           497.90 -14525
## - 'AH:TAT' 1  0.2686 498.16 -14524
## - 'AH:TEY' 1  0.2720 498.17 -14524

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## - 'TAT:TEY' 1 0.3507 498.25 -14523
## - AT 1 0.3581 498.25 -14523
## - 'AP:GTEP' 1 0.3927 498.29 -14522
## - TEY 1 0.3930 498.29 -14522
## - 'GTEP:TAT' 1 0.4116 498.31 -14522
## - 'AH:TIT' 1 0.4404 498.34 -14522
## - 'AFDP:GTEP' 1 0.4603 498.36 -14522
## - 'AH:AFDP' 1 0.5636 498.46 -14520
## - 'GTEP:TIT' 1 0.5703 498.47 -14520
## - 'AFDP:CDP' 1 0.5783 498.47 -14520
## - CDP 1 0.6196 498.52 -14520
## - 'AFDP:TIT' 1 0.6783 498.57 -14519
## - 'AH:GTEP' 1 0.7223 498.62 -14518
## - 'AT:TAT' 1 0.7486 498.64 -14518
## - 'AT:AH' 1 0.7526 498.65 -14518
## - 'GTEP:TEY' 1 0.8148 498.71 -14517
## - 'TIT:CDP' 1 0.8205 498.72 -14517
## - TIT 1 0.8876 498.78 -14516
## - AFDP 1 0.9720 498.87 -14516
## - GTEP 1 1.1764 499.07 -14513
## - 'AT:TEY' 1 1.1775 499.07 -14513
## - 'AT:GTEP' 1 1.2016 499.10 -14513
## - 'AT:TIT' 1 1.2188 499.11 -14512
## - AP 1 1.3809 499.28 -14511
## - 'AP:AH' 1 1.4078 499.30 -14510
## - 'AFDP:TAT' 1 1.5042 499.40 -14509
## - 'AP:TAT' 1 1.7604 499.66 -14506
## - 'AP:TIT' 1 2.0130 499.91 -14503
## - 'AP:TEY' 1 2.8979 500.79 -14493
## - TAT 1 3.0055 500.90 -14491
## - 'TIT:TAT' 1 4.2293 502.12 -14477
## - 'AT:AP' 1 4.4123 502.31 -14475
##
## Step: AIC=-14526.92
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##      'AT:AP' + 'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##      'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##      'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' +
##      'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - AH 1 0.0380 497.94 -14528
## - 'GTEP:CDP' 1 0.0791 497.98 -14528
## - 'TIT:TEY' 1 0.1342 498.03 -14527
## - 'AH:CDP' 1 0.1345 498.04 -14527
## - 'AP:CDP' 1 0.1455 498.05 -14527
## - 'TEY:CDP' 1 0.1503 498.05 -14527
## <none> 497.90 -14527
## - 'AP:AFDP' 1 0.2239 498.12 -14526
## - 'AH:TAT' 1 0.3324 498.23 -14525
## - 'TAT:TEY' 1 0.3464 498.25 -14525
## - 'AH:TEY' 1 0.3497 498.25 -14525

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## - 'AP:GTEP' 1 0.3890 498.29 -14524
## - TEY 1 0.3892 498.29 -14524
## - 'GTEP:TAT' 1 0.4073 498.31 -14524
## - AT 1 0.4402 498.34 -14524
## - 'AFDP:GTEP' 1 0.4841 498.38 -14523
## - 'AH:TIT' 1 0.5443 498.44 -14522
## - 'GTEP:TIT' 1 0.5658 498.47 -14522
## - 'AFDP:CDP' 1 0.5739 498.47 -14522
## - CDP 1 0.6154 498.52 -14522
## - 'AFDP:TIT' 1 0.6803 498.58 -14521
## - 'AH:GTEP' 1 0.7193 498.62 -14520
## - 'AT:AH' 1 0.7502 498.65 -14520
## - 'AH:AFDP' 1 0.7814 498.68 -14520
## - 'GTEP:TEY' 1 0.8101 498.71 -14519
## - 'TIT:CDP' 1 0.8247 498.73 -14519
## - TIT 1 0.9275 498.83 -14518
## - AFDP 1 1.1094 499.01 -14516
## - GTEP 1 1.1718 499.07 -14515
## - 'AT:GTEP' 1 1.2037 499.10 -14515
## - 'AP:AH' 1 1.4034 499.30 -14512
## - AP 1 1.4408 499.34 -14512
## - 'AFDP:TAT' 1 1.4996 499.40 -14511
## - 'AT:TAT' 1 1.5767 499.48 -14510
## - 'AP:TAT' 1 1.8618 499.76 -14507
## - 'AP:TIT' 1 2.1530 500.05 -14503
## - 'AP:TEY' 1 3.0738 500.97 -14493
## - TAT 1 3.2467 501.15 -14490
## - 'AT:TIT' 1 3.4949 501.40 -14488
## - 'AT:TEY' 1 3.8595 501.76 -14483
## - 'TIT:TAT' 1 4.2414 502.14 -14479
## - 'AT:AP' 1 4.4293 502.33 -14477
##
## Step: AIC=-14528.47
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##      'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' +
##      'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'GTEP:CDP' 1 0.0793 498.02 -14530
## - 'AH:CDP' 1 0.1305 498.07 -14529
## - 'TIT:TEY' 1 0.1330 498.07 -14529
## - 'AP:CDP' 1 0.1465 498.09 -14529
## - 'TEY:CDP' 1 0.1531 498.09 -14529
## <none>           497.94 -14528
## - 'AP:AFDP' 1 0.1997 498.14 -14528
## - 'AH:TAT' 1 0.2947 498.23 -14527
## - 'AH:TEY' 1 0.3522 498.29 -14526
## - 'TAT:TEY' 1 0.3644 498.30 -14526
## - TEY 1 0.3793 498.32 -14526
## - AT 1 0.4031 498.34 -14526

```

```

## - 'AP:GTEP'    1  0.4080 498.35 -14526
## - 'GTEP:TAT'   1  0.4264 498.36 -14525
## - 'AFDP:GTEP'  1  0.4699 498.41 -14525
## - 'AH:TIT'     1  0.5466 498.49 -14524
## - 'AFDP:CDP'   1  0.5732 498.51 -14524
## - 'GTEP:TIT'   1  0.6065 498.55 -14523
## - CDP          1  0.6195 498.56 -14523
## - 'AFDP:TIT'   1  0.6816 498.62 -14522
## - 'AH:GTEP'    1  0.7400 498.68 -14522
## - 'AT:AH'       1  0.7925 498.73 -14521
## - 'TIT:CDP'    1  0.8300 498.77 -14521
## - 'GTEP:TEY'   1  0.8715 498.81 -14520
## - 'AH:AFDP'    1  0.8797 498.82 -14520
## - TIT          1  0.9301 498.87 -14519
## - AFDP         1  1.0824 499.02 -14518
## - 'AT:GTEP'   1  1.2474 499.19 -14516
## - GTEP         1  1.3296 499.27 -14515
## - AP           1  1.4538 499.39 -14513
## - 'AFDP:TAT'  1  1.4701 499.41 -14513
## - 'AT:TAT'    1  1.5387 499.48 -14512
## - 'AP:TAT'    1  1.8579 499.80 -14508
## - 'AP:AH'     1  1.8716 499.81 -14508
## - 'AP:TIT'    1  2.1524 500.09 -14505
## - 'AP:TEY'    1  3.0553 500.99 -14494
## - TAT          1  3.2713 501.21 -14492
## - 'AT:TIT'    1  3.6354 501.57 -14488
## - 'AT:TEY'    1  4.0448 501.98 -14483
## - 'TIT:TAT'   1  4.3461 502.28 -14479
## - 'AT:AP'     1  4.4929 502.43 -14477
##
## Step: AIC=-14529.53
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##      'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' +
##      'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'TEY:CDP'  1  0.0766 498.09 -14531
## - 'AP:CDP'   1  0.1061 498.12 -14530
## <none>          498.02 -14530
## - 'AP:AFDP'  1  0.1930 498.21 -14529
## - 'AH:CDP'   1  0.2382 498.26 -14529
## - 'TAT:TEY'  1  0.2900 498.31 -14528
## - 'AH:TEY'   1  0.3262 498.34 -14528
## - TEY        1  0.3726 498.39 -14527
## - 'AP:GTEP'  1  0.3913 498.41 -14527
## - AT         1  0.3955 498.41 -14527
## - 'AH:TAT'   1  0.3996 498.42 -14527
## - 'AFDP:GTEP' 1  0.4523 498.47 -14526
## - 'GTEP:TAT' 1  0.5502 498.57 -14525
## - 'AFDP:CDP' 1  0.5569 498.57 -14525

```

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## - CDP      1  0.5612 498.58 -14525
## - 'TIT:TEY' 1  0.5981 498.62 -14524
## - 'AFDP:TIT' 1  0.6588 498.68 -14524
## - 'AH:TIT' 1  0.6796 498.70 -14524
## - 'GTEP:TIT' 1  0.6863 498.70 -14523
## - 'AH:GTEP' 1  0.7536 498.77 -14523
## - 'AT:AH' 1  0.7602 498.78 -14522
## - 'TIT:CDP' 1  0.8158 498.83 -14522
## - TIT      1  0.8688 498.89 -14521
## - 'GTEP:TEY' 1  0.8719 498.89 -14521
## - 'AH:AFDP' 1  0.8860 498.90 -14521
## - AFDP     1  1.0607 499.08 -14519
## - 'AT:GTEP' 1  1.2210 499.24 -14517
## - GTEP     1  1.2685 499.29 -14516
## - 'AFDP:TAT' 1  1.4319 499.45 -14515
## - AP       1  1.4335 499.45 -14515
## - 'AT:TAT' 1  1.5067 499.52 -14514
## - 'AP:TAT' 1  1.7786 499.80 -14510
## - 'AP:AH' 1  1.8456 499.86 -14510
## - 'AP:TIT' 1  2.0736 500.09 -14507
## - 'AP:TEY' 1  3.0359 501.05 -14496
## - TAT      1  3.1950 501.21 -14494
## - 'AT:TIT' 1  3.5994 501.62 -14489
## - 'AT:TEY' 1  4.0602 502.08 -14484
## - 'TIT:TAT' 1  4.3243 502.34 -14480
## - 'AT:AP' 1  4.4570 502.47 -14479
##
## Step: AIC=-14530.62
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##   'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##   'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##   'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##   'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' +
##   'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY'
##
##          Df Sum of Sq    RSS   AIC
## - 'AP:CDP' 1  0.0715 498.17 -14532
## <none>           498.09 -14531
## - 'AP:AFDP' 1  0.1898 498.28 -14530
## - 'AH:CDP' 1  0.2763 498.37 -14529
## - 'TAT:TEY' 1  0.3451 498.44 -14528
## - 'AH:TEY' 1  0.3518 498.45 -14528
## - 'AH:TAT' 1  0.4647 498.56 -14527
## - 'AFDP:GTEP' 1  0.4903 498.58 -14527
## - CDP      1  0.5100 498.60 -14527
## - 'AP:GTEP' 1  0.5125 498.61 -14526
## - 'GTEP:TAT' 1  0.5152 498.61 -14526
## - AT       1  0.5671 498.66 -14526
## - TEY      1  0.5771 498.67 -14526
## - 'GTEP:TIT' 1  0.7041 498.80 -14524
## - 'AH:GTEP' 1  0.7508 498.85 -14524
## - 'AH:TIT' 1  0.7652 498.86 -14524
## - 'AT:AH' 1  0.7774 498.87 -14523

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## - TIT      1  0.8556 498.95 -14522
## - 'AH:AFDP' 1  0.8825 498.98 -14522
## - 'GTEP:TEY' 1  0.9228 499.02 -14522
## - 'AFDP:CDP' 1  0.9270 499.02 -14522
## - 'TIT:CDP' 1  0.9692 499.06 -14521
## - AFDP     1  1.0105 499.10 -14521
## - 'TIT:TEY' 1  1.1050 499.20 -14520
## - 'AFDP:TIT' 1  1.1128 499.21 -14519
## - 'AT:GTEP' 1  1.1964 499.29 -14518
## - GTEP     1  1.2406 499.34 -14518
## - AP       1  1.3926 499.49 -14516
## - 'AT:TAT' 1  1.4600 499.55 -14515
## - 'AP:TAT' 1  1.7028 499.80 -14512
## - 'AP:AH'   1  1.8966 499.99 -14510
## - 'AP:TIT' 1  1.9975 500.09 -14509
## - 'AFDP:TAT' 1  2.0323 500.13 -14509
## - 'AP:TEY' 1  3.0650 501.16 -14496
## - TAT      1  3.1433 501.24 -14496
## - 'AT:TIT' 1  3.8091 501.90 -14488
## - 'AT:TEY' 1  4.0148 502.11 -14485
## - 'AT:AP'   1  4.4945 502.59 -14480
## - 'TIT:TAT' 1  4.5406 502.64 -14479
##
## Step: AIC=-14531.78
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##           'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##           'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##           'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##           'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' + 'TIT:TEY' +
##           'TIT:CDP' + 'TAT:TEY'
##
##          Df Sum of Sq    RSS    AIC
## <none>                      498.17 -14532
## - 'AP:AFDP' 1  0.1792 498.35 -14532
## - 'AH:CDP' 1  0.2711 498.44 -14531
## - 'TAT:TEY' 1  0.3374 498.50 -14530
## - 'AH:TEY' 1  0.3519 498.52 -14530
## - 'AH:TAT' 1  0.4601 498.63 -14528
## - 'AFDP:GTEP' 1  0.4843 498.65 -14528
## - 'AP:GTEP' 1  0.5105 498.68 -14528
## - 'GTEP:TAT' 1  0.5127 498.68 -14528
## - AT      1  0.5946 498.76 -14527
## - TEY     1  0.6267 498.79 -14526
## - 'GTEP:TIT' 1  0.7020 498.87 -14526
## - 'AH:GTEP' 1  0.7503 498.92 -14525
## - 'AH:TIT' 1  0.7598 498.93 -14525
## - 'AT:AH' 1  0.7748 498.94 -14525
## - CDP     1  0.8416 499.01 -14524
## - 'AH:AFDP' 1  0.8710 499.04 -14524
## - TIT     1  0.8895 499.06 -14523
## - 'GTEP:TEY' 1  0.9177 499.08 -14523
## - 'AFDP:CDP' 1  0.9458 499.11 -14523
## - 'TIT:CDP' 1  0.9562 499.12 -14522

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## - AFDP      1  1.0001 499.17 -14522
## - 'TIT:TEY' 1  1.0877 499.25 -14521
## - 'AFDP:TIT' 1  1.1272 499.29 -14520
## - 'AT:GTEP'  1  1.1906 499.36 -14520
## - GTEP      1  1.2386 499.40 -14519
## - AP        1  1.4124 499.58 -14517
## - 'AT:TAT'  1  1.4537 499.62 -14517
## - 'AP:AH'   1  1.8982 500.06 -14511
## - 'AFDP:TAT' 1  2.0568 500.22 -14509
## - 'AP:TIT'  1  2.4713 500.64 -14504
## - 'AP:TAT'  1  2.7843 500.95 -14501
## - 'AP:TEY'  1  3.1898 501.36 -14496
## - 'AT:TIT'  1  3.7819 501.95 -14489
## - 'AT:TEY'  1  3.9893 502.16 -14487
## - 'TIT:TAT' 1  4.4936 502.66 -14481
## - 'AT:AP'   1  4.5946 502.76 -14480
## - TAT       1  5.4756 503.64 -14469
## Start: AIC=-14601.37
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' +
##   'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##   'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AP:CDP'  1  0.0013 491.00 -14603
## - 'TAT:TEY' 1  0.0058 491.00 -14603
## - AH        1  0.0132 491.01 -14603
## - 'AT:CDP'  1  0.0266 491.03 -14603
## - CDP       1  0.0706 491.07 -14602
## - 'AH:CDP'  1  0.1002 491.10 -14602
## - 'TIT:TEY' 1  0.1011 491.10 -14602
## - 'AFDP:TIT' 1  0.1030 491.10 -14602
## - 'GTEP:CDP' 1  0.1070 491.11 -14602
## - 'AFDP:TEY' 1  0.1115 491.11 -14602
## - 'AT:AFDP'  1  0.1146 491.11 -14602
## - 'AP:AFDP'  1  0.1318 491.13 -14602
## - 'TEY:CDP'  1  0.1620 491.16 -14601
## <none>           491.00 -14601
## - 'AT:TAT'  1  0.1683 491.17 -14601
## - 'AH:TAT'  1  0.2323 491.23 -14601
## - 'GTEP:TAT' 1  0.2728 491.27 -14600
## - 'AFDP:CDP' 1  0.2802 491.28 -14600
## - 'GTEP:TIT' 1  0.2889 491.29 -14600
## - 'TAT:CDP'  1  0.2932 491.29 -14600
## - 'AH:TEY'  1  0.2954 491.29 -14600
## - 'AT:TIT'  1  0.2976 491.30 -14600
## - 'GTEP:TEY' 1  0.3071 491.31 -14600
## - 'AH:TIT'  1  0.3606 491.36 -14599
## - 'AFDP:TAT' 1  0.3832 491.38 -14599
## - 'TIT:CDP'  1  0.4450 491.44 -14598

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## - 'AP:GTEP'      1  0.5059 491.51 -14597
## - GTEP          1  0.6025 491.60 -14596
## - 'AH:GTEP'     1  0.6802 491.68 -14595
## - 'AH:AFDP'     1  0.7070 491.71 -14595
## - AFDP          1  0.7288 491.73 -14595
## - 'AT:GTEP'     1  0.9136 491.91 -14592
## - 'AT:AH'        1  0.9803 491.98 -14592
## - 'AFDP:GTEP'   1  0.9831 491.98 -14592
## - AT            1  1.0115 492.01 -14591
## - TIT           1  1.0747 492.07 -14590
## - TEY           1  1.2462 492.25 -14588
## - 'AT:TEY'       1  1.2638 492.26 -14588
## - 'AP:AH'        1  1.3770 492.38 -14587
## - 'AP:TAT'       1  1.5147 492.51 -14585
## - 'TIT:TAT'     1  2.0231 493.02 -14579
## - TAT           1  2.2057 493.20 -14577
## - 'AP:TIT'       1  2.2556 493.25 -14576
## - AP             1  2.9856 493.98 -14568
## - 'AP:TEY'       1  4.6231 495.62 -14548
## - 'AT:AP'        1  7.1978 498.20 -14517
##
## Step:  AIC=-14603.36
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##   'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##   'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'TAT:TEY'   1  0.0057 491.01 -14605
## - AH          1  0.0133 491.01 -14605
## - 'AT:CDP'    1  0.0370 491.04 -14605
## - 'TIT:TEY'   1  0.1002 491.10 -14604
## - 'AFDP:TIT'  1  0.1029 491.10 -14604
## - 'GTEP:CDP'  1  0.1077 491.11 -14604
## - 'AFDP:TEY'  1  0.1123 491.11 -14604
## - 'AT:AFDP'   1  0.1154 491.12 -14604
## - 'AH:CDP'   1  0.1158 491.12 -14604
## - 'AP:AFDP'   1  0.1309 491.13 -14604
## - CDP         1  0.1408 491.14 -14604
## - 'TEY:CDP'   1  0.1654 491.17 -14603
## <none>          491.00 -14603
## - 'AT:TAT'    1  0.1781 491.18 -14603
## - 'AH:TAT'    1  0.2515 491.25 -14602
## - 'GTEP:TAT'  1  0.2720 491.27 -14602
## - 'AFDP:CDP'  1  0.2864 491.29 -14602
## - 'GTEP:TIT'  1  0.2876 491.29 -14602
## - 'AH:TEY'    1  0.2951 491.30 -14602
## - 'TAT:CDP'   1  0.3025 491.30 -14602
## - 'GTEP:TEY'  1  0.3110 491.31 -14602
## - 'AT:TIT'    1  0.3259 491.33 -14601

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```

## - 'AH:TIT'      1  0.3821 491.38 -14601
## - 'AFDP:TAT'    1  0.3948 491.40 -14601
## - 'TIT:CDP'     1  0.4501 491.45 -14600
## - 'AP:GTEP'     1  0.5046 491.51 -14599
## - GTEP          1  0.6054 491.61 -14598
## - 'AH:GTEP'     1  0.6810 491.68 -14597
## - 'AH:AFDP'     1  0.7077 491.71 -14597
## - AFDP          1  0.7290 491.73 -14597
## - 'AT:GTEP'     1  0.9162 491.92 -14594
## - 'AT:AH'        1  0.9803 491.98 -14594
## - 'AFDP:GTEP'   1  0.9858 491.99 -14594
## - AT             1  1.0257 492.03 -14593
## - 'AT:TEY'       1  1.2633 492.26 -14590
## - TEY            1  1.2678 492.27 -14590
## - 'AP:AH'        1  1.3763 492.38 -14589
## - TIT            1  1.6296 492.63 -14586
## - 'TIT:TAT'     1  2.0244 493.02 -14581
## - AP              1  2.9860 493.99 -14570
## - 'AP:TAT'       1  3.3486 494.35 -14565
## - 'AP:TIT'       1  3.6245 494.62 -14562
## - 'AP:TEY'       1  4.6657 495.67 -14550
## - TAT            1  5.1915 496.19 -14543
## - 'AT:AP'        1  7.2383 498.24 -14519
##
## Step: AIC=-14605.29
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##   'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##   'TAT:CDP' + 'TEY:CDP'
##
##                                     Df Sum of Sq    RSS    AIC
## - AH           1  0.0131 491.02 -14607
## - 'AT:CDP'     1  0.0348 491.04 -14607
## - 'GTEP:CDP'   1  0.1094 491.12 -14606
## - 'AFDP:TEY'   1  0.1102 491.12 -14606
## - 'AH:CDP'     1  0.1105 491.12 -14606
## - 'AT:AFDP'    1  0.1115 491.12 -14606
## - 'AP:AFDP'    1  0.1352 491.14 -14606
## - CDP          1  0.1528 491.16 -14606
## <none>          491.01 -14605
## - 'TEY:CDP'    1  0.1957 491.20 -14605
## - 'AFDP:TIT'   1  0.1970 491.20 -14605
## - 'AH:TAT'     1  0.2458 491.25 -14604
## - 'GTEP:TAT'   1  0.2692 491.28 -14604
## - 'GTEP:TIT'   1  0.2821 491.29 -14604
## - 'AH:TEY'     1  0.2915 491.30 -14604
## - 'GTEP:TEY'   1  0.3280 491.33 -14603
## - 'TIT:TEY'    1  0.3376 491.34 -14603
## - 'AH:TIT'     1  0.3766 491.38 -14603
## - 'TAT:CDP'    1  0.4034 491.41 -14602

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## - 'AT:TAT'      1  0.4167 491.42 -14602
## - 'TIT:CDP'     1  0.4449 491.45 -14602
## - 'AT:TIT'      1  0.5015 491.51 -14601
## - 'AP:GTEP'     1  0.5020 491.51 -14601
## - 'AFDP:CDP'    1  0.6095 491.62 -14600
## - GTEP          1  0.6174 491.62 -14600
## - 'AH:GTEP'     1  0.6865 491.69 -14599
## - 'AH:AFDP'     1  0.7033 491.71 -14599
## - 'AFDP:TAT'    1  0.7185 491.72 -14599
## - AFDP          1  0.7234 491.73 -14599
## - 'AT:GTEP'     1  0.9552 491.96 -14596
## - 'AT:AH'        1  0.9747 491.98 -14596
## - 'AFDP:GTEP'   1  1.0059 492.01 -14595
## - 'AT:TEY'       1  1.2608 492.27 -14592
## - 'AP:AH'        1  1.3732 492.38 -14591
## - AT             1  1.4246 492.43 -14590
## - TEY            1  1.8392 492.85 -14585
## - TIT            1  1.8829 492.89 -14585
## - AP             1  2.9813 493.99 -14572
## - 'TIT:TAT'     1  3.2521 494.26 -14568
## - 'AP:TAT'       1  3.4508 494.46 -14566
## - 'AP:TIT'       1  3.6725 494.68 -14563
## - 'AP:TEY'       1  4.7645 495.77 -14550
## - TAT            1  5.2095 496.22 -14545
## - 'AT:AP'        1  7.4057 498.41 -14519
##
## Step: AIC=-14607.13
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##           'AP:TEY' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##           'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##           'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##           'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:CDP' +
##           'TEY:CDP'
##
##               Df Sum of Sq    RSS    AIC
## - 'AT:CDP'      1  0.0343 491.05 -14609
## - 'AH:CDP'      1  0.1061 491.13 -14608
## - 'GTEP:CDP'    1  0.1085 491.13 -14608
## - 'AFDP:TEY'    1  0.1165 491.14 -14608
## - 'AP:AFDP'     1  0.1221 491.14 -14608
## - 'AT:AFDP'     1  0.1425 491.16 -14607
## - CDP           1  0.1627 491.18 -14607
## <none>          491.02 -14607
## - 'AFDP:TIT'    1  0.1939 491.21 -14607
## - 'TEY:CDP'     1  0.2117 491.23 -14607
## - 'AH:TAT'      1  0.2420 491.26 -14606
## - 'GTEP:TAT'    1  0.2969 491.32 -14606
## - 'GTEP:TIT'    1  0.3205 491.34 -14605
## - 'TIT:TEY'      1  0.3433 491.36 -14605
## - 'GTEP:TEY'    1  0.3737 491.39 -14605
## - 'AH:TEY'       1  0.3960 491.42 -14604
## - 'TAT:CDP'     1  0.4379 491.46 -14604

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## - 'AH:TIT'      1  0.4471 491.47 -14604
## - 'AT:TAT'      1  0.4531 491.47 -14604
## - 'TIT:CDP'     1  0.4818 491.50 -14603
## - 'AP:GTEP'     1  0.5062 491.53 -14603
## - 'AT:TIT'      1  0.5822 491.60 -14602
## - 'AFDP:CDP'    1  0.6243 491.64 -14602
## - 'AH:GTEP'     1  0.7020 491.72 -14601
## - 'AFDP:TAT'    1  0.7096 491.73 -14601
## - AFDP          1  0.7183 491.74 -14600
## - GTEP          1  0.7310 491.75 -14600
## - 'AH:AFDP'     1  0.8779 491.90 -14599
## - 'AFDP:GTEP'   1  0.9933 492.01 -14597
## - 'AT:GTEP'     1  1.0152 492.03 -14597
## - 'AT:AH'        1  1.1638 492.18 -14595
## - 'AT:TEY'       1  1.4959 492.52 -14591
## - AT             1  1.5571 492.58 -14590
## - 'AP:AH'        1  1.6813 492.70 -14589
## - TEY            1  1.8681 492.89 -14587
## - TIT            1  1.9700 492.99 -14586
## - AP             1  3.0756 494.09 -14572
## - 'TIT:TAT'     1  3.2988 494.32 -14570
## - 'AP:TAT'       1  3.6020 494.62 -14566
## - 'AP:tit'       1  3.8149 494.83 -14563
## - 'AP:TEY'       1  4.8507 495.87 -14551
## - TAT            1  5.5067 496.53 -14543
## - 'AT:AP'        1  7.6045 498.62 -14518
##
## Step: AIC=-14608.72
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##   'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##   'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##   'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' +
##   'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'AH:CDP'      1  0.0734 491.13 -14610
## - 'AFDP:TEY'    1  0.0976 491.15 -14610
## - 'AP:AFDP'     1  0.1219 491.18 -14609
## - 'AT:AFDP'     1  0.1229 491.18 -14609
## - 'GTEP:CDP'    1  0.1551 491.21 -14609
## - CDP           1  0.1582 491.21 -14609
## <none>          491.05 -14609
## - 'TEY:CDP'     1  0.1781 491.23 -14609
## - 'AH:TAT'      1  0.2077 491.26 -14608
## - 'GTEP:TAT'    1  0.2888 491.34 -14607
## - 'GTEP:TIT'    1  0.2998 491.35 -14607
## - 'GTEP:TEY'    1  0.3394 491.39 -14607
## - 'AH:TEY'       1  0.4008 491.45 -14606
## - 'TAT:CDP'     1  0.4136 491.47 -14606
## - 'AH:TIT'       1  0.4161 491.47 -14606
## - 'TIT:TEY'      1  0.4294 491.48 -14606
## - 'TIT:CDP'      1  0.4495 491.50 -14605

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## - 'AFDP:TIT' 1 0.4538 491.51 -14605
## - 'AP:GTEP' 1 0.5355 491.59 -14604
## - AFDP 1 0.6852 491.74 -14602
## - 'AH:GTEP' 1 0.6959 491.75 -14602
## - GTEP 1 0.7001 491.75 -14602
## - 'AH:AFDP' 1 0.8635 491.92 -14600
## - 'AT:GTEP' 1 0.9876 492.04 -14599
## - 'AFDP:GTEP' 1 1.0067 492.06 -14599
## - 'AT:AH' 1 1.1613 492.21 -14597
## - 'AFDP:CDP' 1 1.2350 492.29 -14596
## - 'AFDP:TAT' 1 1.4441 492.50 -14593
## - 'AT:TAT' 1 1.4786 492.53 -14593
## - 'AT:TEY' 1 1.5065 492.56 -14593
## - AT 1 1.5323 492.59 -14592
## - 'AP:AH' 1 1.6749 492.73 -14591
## - TEY 1 1.8340 492.89 -14589
## - 'AT:TIT' 1 1.9380 492.99 -14588
## - TIT 1 1.9548 493.01 -14587
## - AP 1 3.0491 494.10 -14574
## - 'AP:TAT' 1 3.5699 494.62 -14568
## - 'TIT:TAT' 1 3.5746 494.63 -14568
## - 'AP:TIT' 1 3.7833 494.84 -14565
## - 'AP:TEY' 1 4.8209 495.87 -14553
## - TAT 1 5.6338 496.69 -14543
## - 'AT:AP' 1 7.5727 498.63 -14520
##
## Step: AIC=-14609.84
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##      'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' +
##      'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' +
##      'TIT:TEY' + 'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq    RSS     AIC
## - 'AFDP:TEY' 1  0.1201 491.25 -14610
## - 'AP:AFDP' 1  0.1223 491.25 -14610
## - 'AH:TAT' 1  0.1442 491.27 -14610
## - 'AT:AFDP' 1  0.1446 491.27 -14610
## <none>                491.13 -14610
## - CDP 1  0.1873 491.31 -14610
## - 'GTEP:CDP' 1  0.2366 491.36 -14609
## - 'TEY:CDP' 1  0.2562 491.38 -14609
## - 'GTEP:TEY' 1  0.3909 491.52 -14607
## - 'GTEP:TAT' 1  0.3969 491.52 -14607
## - 'TIT:TEY' 1  0.3984 491.53 -14607
## - 'AH:TIT' 1  0.4018 491.53 -14607
## - 'GTEP:TIT' 1  0.4025 491.53 -14607
## - 'AFDP:TIT' 1  0.4295 491.56 -14607
## - 'AH:TEY' 1  0.4551 491.58 -14606
## - 'TAT:CDP' 1  0.5183 491.65 -14606
## - 'AP:GTEP' 1  0.5201 491.65 -14606
## - 'TIT:CDP' 1  0.5377 491.66 -14605

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## - 'AH:GTEP'      1  0.6969 491.82 -14604
## - AFDP          1  0.7445 491.87 -14603
## - GTEP          1  0.7870 491.91 -14602
## - 'AH:AFDP'     1  0.8517 491.98 -14602
## - 'AFDP:GTEP'   1  1.0048 492.13 -14600
## - 'AT:GTEP'     1  1.0723 492.20 -14599
## - 'AT:AH'        1  1.2363 492.36 -14597
## - 'AFDP:CDP'    1  1.2787 492.41 -14596
## - 'AFDP:TAT'    1  1.4250 492.55 -14595
## - 'AT:TEY'       1  1.4835 492.61 -14594
## - AT             1  1.6008 492.73 -14593
## - 'AT:TAT'       1  1.6041 492.73 -14593
## - 'AP:AH'        1  1.6959 492.82 -14592
## - TEY            1  1.8584 492.99 -14590
## - TIT            1  1.9848 493.11 -14588
## - 'AT:TIT'       1  2.0052 493.13 -14588
## - AP              1  3.0597 494.19 -14575
## - 'TIT:TAT'     1  3.5289 494.66 -14570
## - 'AP:TAT'       1  3.6045 494.73 -14569
## - 'AP:TIT'       1  3.8093 494.94 -14566
## - 'AP:TEY'       1  4.8376 495.96 -14554
## - TAT            1  5.6704 496.80 -14544
## - 'AT:AP'        1  7.6534 498.78 -14520
##
## Step: AIC=-14610.39
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##           'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##           'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' + 'GTEP:TIT' +
##           'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##           'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##               Df Sum of Sq   RSS   AIC
## - 'AT:AFDP'      1  0.0310 491.28 -14612
## - CDP            1  0.0938 491.34 -14611
## - 'AH:TAT'       1  0.1397 491.39 -14611
## - 'TEY:CDP'      1  0.1481 491.40 -14611
## - 'AP:AFDP'      1  0.1512 491.40 -14611
## <none>           491.25 -14610
## - 'GTEP:CDP'     1  0.2372 491.48 -14610
## - 'TIT:TEY'      1  0.3160 491.56 -14609
## - 'GTEP:TEY'     1  0.3927 491.64 -14608
## - 'GTEP:TAT'     1  0.3951 491.64 -14608
## - 'TAT:CDP'      1  0.3983 491.65 -14608
## - 'AH:TIT'       1  0.4019 491.65 -14608
## - 'GTEP:TIT'     1  0.4066 491.65 -14608
## - 'TIT:CDP'      1  0.4309 491.68 -14607
## - 'AH:TEY'       1  0.4610 491.71 -14607
## - 'AP:GTEP'      1  0.4858 491.73 -14607
## - AFDP           1  0.6685 491.92 -14604
## - 'AH:GTEP'      1  0.6877 491.93 -14604
## - GTEP           1  0.7878 492.03 -14603
## - 'AH:AFDP'      1  0.8930 492.14 -14602

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## - 'AFDP:GTEP' 1 0.9830 492.23 -14601
## - 'AT:GTEP' 1 1.0993 492.35 -14599
## - 'AFDP:CDP' 1 1.1593 492.41 -14598
## - 'AT:AH' 1 1.4117 492.66 -14595
## - 'AT:TAT' 1 1.5754 492.82 -14594
## - AT 1 1.5903 492.84 -14593
## - 'AFDP:TIT' 1 1.7350 492.98 -14592
## - 'AP:AH' 1 1.7453 492.99 -14591
## - 'AT:TEY' 1 1.9079 493.15 -14590
## - 'AT:TIT' 1 1.9425 493.19 -14589
## - TIT 1 2.0172 493.26 -14588
## - TEY 1 2.0193 493.27 -14588
## - 'AFDP:TAT' 1 2.6659 493.91 -14580
## - AP 1 2.9685 494.22 -14577
## - 'TIT:TAT' 1 3.4108 494.66 -14572
## - 'AP:TAT' 1 3.5289 494.78 -14570
## - 'AP:TIT' 1 3.7203 494.97 -14568
## - 'AP:TEY' 1 4.7526 496.00 -14556
## - TAT 1 5.5766 496.82 -14546
## - 'AT:AP' 1 7.5394 498.79 -14522
##
## Step: AIC=-14612.02
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' + 'GTEP:TIT' +
##      'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS     AIC
## - CDP 1 0.0801 491.36 -14613
## - 'TEY:CDP' 1 0.1421 491.42 -14612
## <none> 491.28 -14612
## - 'AH:TAT' 1 0.2182 491.50 -14611
## - 'GTEP:CDP' 1 0.2473 491.53 -14611
## - 'AP:AFDP' 1 0.2992 491.58 -14610
## - 'TIT:TEY' 1 0.3067 491.58 -14610
## - 'GTEP:TEY' 1 0.3884 491.67 -14609
## - 'GTEP:TAT' 1 0.3897 491.67 -14609
## - 'TAT:CDP' 1 0.3913 491.67 -14609
## - 'GTEP:TIT' 1 0.4041 491.68 -14609
## - 'TIT:CDP' 1 0.4091 491.69 -14609
## - 'AP:GTEP' 1 0.4796 491.76 -14608
## - 'AH:TIT' 1 0.5233 491.80 -14608
## - 'AH:TEY' 1 0.5538 491.83 -14607
## - 'AH:GTEP' 1 0.6870 491.96 -14606
## - AFDP 1 0.7658 492.04 -14605
## - GTEP 1 0.7880 492.07 -14605
## - 'AH:AFDP' 1 1.0166 492.29 -14602
## - 'AFDP:GTEP' 1 1.0432 492.32 -14602
## - 'AT:GTEP' 1 1.1142 492.39 -14601
## - 'AFDP:CDP' 1 1.1370 492.42 -14600
## - 'AT:AH' 1 1.3840 492.66 -14597

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## - 'AFDP:TIT'    1   1.7394 493.02 -14593
## - 'AP:AH'       1   1.8049 493.08 -14592
## - AT            1   1.8291 493.11 -14592
## - TEY           1   1.9984 493.28 -14590
## - TIT            1   2.0719 493.35 -14589
## - 'AFDP:TAT'    1   2.6351 493.91 -14582
## - 'AT:TAT'      1   2.6964 493.97 -14582
## - AP             1   2.9959 494.27 -14578
## - 'TIT:TAT'     1   3.3931 494.67 -14573
## - 'AP:TAT'      1   3.8130 495.09 -14568
## - 'AP:TIT'      1   3.9420 495.22 -14567
## - 'AT:TIT'      1   4.1506 495.43 -14564
## - 'AP:TEY'       1   4.9041 496.18 -14555
## - 'AT:TEY'       1   5.1740 496.45 -14552
## - TAT            1   6.2124 497.49 -14540
## - 'AT:AP'        1   7.5150 498.79 -14524
##
## Step: AIC=-14613.06
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' + 'GTEP:TIT' +
##      'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'TEY:CDP'    1   0.1152 491.47 -14614
## <none>           491.36 -14613
## - 'AH:TAT'     1   0.2310 491.59 -14612
## - 'TIT:TEY'     1   0.2773 491.64 -14612
## - 'AP:AFDP'     1   0.2934 491.65 -14612
## - 'GTEP:TEY'    1   0.3167 491.67 -14611
## - 'GTEP:TIT'    1   0.3335 491.69 -14611
## - 'GTEP:TAT'    1   0.3447 491.70 -14611
## - 'TIT:CDP'     1   0.3703 491.73 -14611
## - 'TAT:CDP'     1   0.3810 491.74 -14610
## - 'GTEP:CDP'    1   0.4117 491.77 -14610
## - 'AH:TIT'      1   0.5433 491.90 -14608
## - 'AH:TEY'      1   0.5764 491.93 -14608
## - 'AP:GTEP'      1   0.6645 492.02 -14607
## - 'AH:GTEP'      1   0.6852 492.04 -14607
## - AFDP           1   0.7267 492.08 -14606
## - GTEP           1   0.7408 492.10 -14606
## - 'AH:AFDP'      1   1.0357 492.39 -14603
## - 'AFDP:GTEP'    1   1.0523 492.41 -14602
## - 'AFDP:CDP'     1   1.1187 492.48 -14602
## - 'AT:GTEP'      1   1.1418 492.50 -14601
## - 'AT:AH'         1   1.3975 492.76 -14598
## - 'AFDP:TIT'     1   1.7693 493.13 -14594
## - 'AP:AH'         1   1.8364 493.19 -14593
## - TIT            1   2.1903 493.55 -14589
## - AT             1   2.4443 493.80 -14586
## - 'AT:TAT'       1   2.6181 493.98 -14584

```

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## - 'AFDP:TAT' 1 2.8662 494.22 -14581
## - AP 1 2.9168 494.27 -14580
## - TEY 1 2.9491 494.31 -14580
## - 'TIT:TAT' 1 3.7314 495.09 -14570
## - 'AP:TAT' 1 3.8241 495.18 -14569
## - 'AP:TIT' 1 3.8949 495.25 -14568
## - 'AP:TEY' 1 4.9100 496.27 -14556
## - 'AT:TIT' 1 4.9657 496.32 -14556
## - 'AT:TEY' 1 5.1009 496.46 -14554
## - TAT 1 6.1440 497.50 -14542
## - 'AT:AP' 1 7.5063 498.86 -14526
##
## Step: AIC=-14613.67
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' + 'GTEP:TIT' +
##      'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:CDP'
##
##                                     Df Sum of Sq    RSS     AIC
## <none>                            491.47 -14614
## - 'AH:TAT' 1 0.2769 491.75 -14612
## - 'GTEP:TAT' 1 0.2821 491.76 -14612
## - 'GTEP:CDP' 1 0.3075 491.78 -14612
## - 'AP:AFDP' 1 0.3121 491.79 -14612
## - 'GTEP:TIT' 1 0.3165 491.79 -14612
## - 'GTEP:TEY' 1 0.3586 491.83 -14611
## - 'TAT:CDP' 1 0.5547 492.03 -14609
## - 'TIT:CDP' 1 0.5941 492.07 -14608
## - 'AH:TIT' 1 0.6115 492.08 -14608
## - 'AH:TEY' 1 0.6426 492.12 -14608
## - 'AH:GTEP' 1 0.6836 492.16 -14608
## - AFDP 1 0.7360 492.21 -14607
## - GTEP 1 0.7946 492.27 -14606
## - 'AP:GTEP' 1 0.9761 492.45 -14604
## - 'AH:AFDP' 1 0.9903 492.46 -14604
## - 'AFDP:CDP' 1 1.1831 492.66 -14602
## - 'AFDP:GTEP' 1 1.2792 492.75 -14600
## - 'AT:AH' 1 1.4271 492.90 -14598
## - 'AT:GTEP' 1 1.4620 492.94 -14598
## - 'AP:AH' 1 1.9188 493.39 -14593
## - 'AFDP:TIT' 1 2.0020 493.48 -14592
## - TIT 1 2.0758 493.55 -14591
## - AT 1 2.3787 493.85 -14587
## - 'TIT:TEY' 1 2.4429 493.92 -14586
## - AP 1 2.8082 494.28 -14582
## - TEY 1 2.9872 494.46 -14580
## - 'AFDP:TAT' 1 3.1883 494.66 -14578
## - 'AT:TAT' 1 3.7820 495.26 -14570
## - 'AP:TAT' 1 3.7824 495.26 -14570
## - 'AP:TIT' 1 3.8101 495.28 -14570
## - 'AP:TEY' 1 4.8133 496.29 -14558

```

```

## - 'AT:TEY'      1    5.1355 496.61 -14554
## - 'AT:TIT'      1    5.5697 497.04 -14549
## - 'TIT:TAT'     1    5.8034 497.28 -14546
## - TAT           1    6.1117 497.59 -14543
## - 'AT:AP'        1    7.4098 498.88 -14527
## Start: AIC=-14647.87
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' +
##   'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##   'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq   RSS   AIC
## - 'AP:AFDP'     1    0.0035 487.44 -14650
## - 'AT:CDP'      1    0.0041 487.44 -14650
## - 'GTEP:TEY'    1    0.0063 487.44 -14650
## - 'TAT:CDP'     1    0.0133 487.45 -14650
## - AH            1    0.0154 487.45 -14650
## - 'GTEP:TIT'    1    0.0190 487.46 -14650
## - GTEP          1    0.0200 487.46 -14650
## - 'AFDP:TIT'    1    0.0266 487.46 -14650
## - 'TEY:CDP'     1    0.0447 487.48 -14649
## - 'GTEP:TAT'    1    0.0461 487.48 -14649
## - 'GTEP:CDP'    1    0.0708 487.51 -14649
## - 'TIT:TEY'     1    0.0767 487.51 -14649
## - 'AP:CDP'      1    0.0855 487.52 -14649
## - 'AH:CDP'      1    0.0937 487.53 -14649
## - 'AT:TAT'      1    0.0963 487.53 -14649
## - 'AH:GTEP'     1    0.0963 487.53 -14649
## - 'AH:TEY'      1    0.1086 487.55 -14649
## - 'AFDP:TEY'    1    0.1153 487.55 -14648
## - 'AH:TAT'      1    0.1253 487.56 -14648
## - 'AFDP:CDP'    1    0.1634 487.60 -14648
## <none>          487.44 -14648
## - 'AT:AFDP'     1    0.1768 487.61 -14648
## - 'TIT:CDP'     1    0.1862 487.62 -14648
## - 'AH:TIT'      1    0.2022 487.64 -14647
## - AT            1    0.2054 487.64 -14647
## - 'AFDP:TAT'    1    0.2344 487.67 -14647
## - 'AT:GTEP'     1    0.2771 487.72 -14646
## - 'AP:GTEP'     1    0.2857 487.72 -14646
## - 'TAT:TEY'     1    0.2869 487.72 -14646
## - 'AT:AH'        1    0.2999 487.74 -14646
## - 'AT:TIT'       1    0.3605 487.80 -14646
## - TEY           1    0.4284 487.87 -14645
## - 'AH:AFDP'     1    0.4342 487.87 -14645
## - CDP           1    0.4928 487.93 -14644
## - AFDP          1    0.6101 488.05 -14642
## - 'AFDP:GTEP'   1    0.6203 488.06 -14642
## - 'AP:AH'        1    0.6530 488.09 -14642
## - TIT           1    1.2155 488.65 -14635

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## - 'AT:TEY'      1  1.4689 488.91 -14632
## - 'AP:TAT'      1  2.0290 489.47 -14625
## - AP            1  2.6204 490.06 -14618
## - 'AP:TIT'      1  2.6685 490.11 -14618
## - 'TIT:TAT'     1  3.2458 490.68 -14611
## - TAT           1  3.4161 490.85 -14609
## - 'AP:TEY'      1  4.1591 491.60 -14600
## - 'AT:AP'        1  5.0875 492.53 -14588
##
## Step: AIC=-14649.82
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##   'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##   'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##   'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##   'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##   'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AT:CDP'      1  0.0046 487.45 -14652
## - 'GTEP:TEY'    1  0.0075 487.45 -14652
## - 'TAT:CDP'     1  0.0112 487.45 -14652
## - AH            1  0.0124 487.45 -14652
## - 'GTEP:TIT'    1  0.0217 487.46 -14652
## - GTEP          1  0.0222 487.46 -14652
## - 'AFDP:TIT'    1  0.0244 487.47 -14652
## - 'TEY:CDP'     1  0.0498 487.49 -14651
## - 'GTEP:TAT'    1  0.0508 487.49 -14651
## - 'GTEP:CDP'    1  0.0693 487.51 -14651
## - 'TIT:TEY'     1  0.0764 487.52 -14651
## - 'AP:CDP'      1  0.0838 487.53 -14651
## - 'AH:CDP'      1  0.0945 487.54 -14651
## - 'AH:GTEP'     1  0.0996 487.54 -14651
## - 'AT:TAT'      1  0.1006 487.54 -14651
## - 'AH:TEY'      1  0.1056 487.55 -14650
## - 'AFDP:TEY'    1  0.1230 487.56 -14650
## - 'AH:TAT'      1  0.1239 487.57 -14650
## <none>          487.44 -14650
## - 'AFDP:CDP'    1  0.1658 487.61 -14650
## - 'AH:TIT'      1  0.1994 487.64 -14649
## - 'TIT:CDP'     1  0.2106 487.65 -14649
## - AT            1  0.2155 487.66 -14649
## - 'AFDP:TAT'    1  0.2312 487.67 -14649
## - 'AT:AFDP'     1  0.2475 487.69 -14649
## - 'AT:GTEP'     1  0.2761 487.72 -14648
## - 'AP:GTEP'     1  0.2834 487.72 -14648
## - 'TAT:TEY'     1  0.2921 487.73 -14648
## - 'AT:AH'        1  0.2983 487.74 -14648
## - 'AT:TIT'      1  0.3881 487.83 -14647
## - 'AH:AFDP'     1  0.4532 487.89 -14646
## - TEY           1  0.4543 487.90 -14646
## - CDP           1  0.4971 487.94 -14646
## - 'AFDP:GTEP'   1  0.7136 488.16 -14643

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## - 'AP:AH'      1  0.7608 488.20 -14643
## - AFDP        1  0.8601 488.30 -14641
## - TIT         1  1.3844 488.83 -14635
## - 'AT:TEY'    1  1.8641 489.31 -14629
## - 'AP:TAT'    1  2.3425 489.78 -14624
## - AP          1  3.1480 490.59 -14614
## - 'AP:TIT'    1  3.1606 490.60 -14614
## - 'TIT:TAT'   1  3.2943 490.74 -14612
## - TAT         1  3.8974 491.34 -14605
## - 'AP:TEY'    1  4.8184 492.26 -14594
## - 'AT:AP'     1  5.2801 492.72 -14588
##
## Step: AIC=-14651.77
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##   'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##   'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##   'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##   'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'GTEP:TEY' 1  0.0059 487.45 -14654
## - AH          1  0.0121 487.46 -14654
## - 'TAT:CDP'   1  0.0123 487.46 -14654
## - 'GTEP:TIT'  1  0.0192 487.47 -14654
## - GTEP        1  0.0195 487.47 -14654
## - 'GTEP:TAT' 1  0.0477 487.49 -14653
## - 'TEY:CDP'   1  0.0536 487.50 -14653
## - 'GTEP:CDP'  1  0.0691 487.52 -14653
## - 'AFDP:TIT'  1  0.0943 487.54 -14653
## - 'AH:GTEP'   1  0.0999 487.55 -14653
## - 'AH:CDP'   1  0.1008 487.55 -14652
## - 'AH:TEY'   1  0.1051 487.55 -14652
## - 'AFDP:TEY'  1  0.1184 487.56 -14652
## - 'AP:CDP'   1  0.1188 487.56 -14652
## - 'AH:TAT'   1  0.1269 487.57 -14652
## - 'TIT:TEY'   1  0.1487 487.59 -14652
## <none>           487.45 -14652
## - 'AH:TIT'   1  0.2054 487.65 -14651
## - 'TIT:CDP'  1  0.2116 487.66 -14651
## - AT          1  0.2249 487.67 -14651
## - 'AT:AFDP'  1  0.2439 487.69 -14651
## - 'AT:GTEP'  1  0.2716 487.72 -14650
## - 'AP:GTEP'  1  0.2898 487.74 -14650
## - 'AT:AH'    1  0.2956 487.74 -14650
## - 'TAT:TEY'  1  0.3677 487.81 -14649
## - 'AH:AFDP'  1  0.4495 487.90 -14648
## - TEY         1  0.4883 487.93 -14648
## - CDP         1  0.5124 487.96 -14648
## - 'AFDP:CDP' 1  0.5152 487.96 -14648
## - 'AT:TAT'   1  0.5963 488.04 -14646
## - 'AFDP:TAT' 1  0.6899 488.14 -14645

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## - 'AFDP:GTEP' 1 0.7290 488.18 -14645
## - 'AP:AH' 1 0.7604 488.21 -14645
## - AFDP 1 0.8872 488.33 -14643
## - TIT 1 1.7388 489.18 -14633
## - 'AT:TIT' 1 1.8397 489.29 -14632
## - 'AT:TEY' 1 1.8596 489.31 -14631
## - 'AP:TAT' 1 2.7661 490.21 -14620
## - AP 1 3.1437 490.59 -14616
## - 'TIT:TAT' 1 3.4340 490.88 -14612
## - 'AP:TIT' 1 3.5217 490.97 -14611
## - TAT 1 4.5138 491.96 -14599
## - 'AP:TEY' 1 4.8199 492.27 -14596
## - 'AT:AP' 1 5.2755 492.72 -14590
##
## Step: AIC=-14653.7
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##   'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##   'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##   'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:CDP' +
##   'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' +
##   'TEY:CDP'
##
##          Df Sum of Sq    RSS     AIC
## - AH 1 0.0159 487.47 -14656
## - 'GTEP:TIT' 1 0.0167 487.47 -14656
## - GTEP 1 0.0192 487.47 -14656
## - 'GTEP:TAT' 1 0.0500 487.50 -14655
## - 'TEY:CDP' 1 0.0520 487.50 -14655
## - 'TAT:CDP' 1 0.0523 487.50 -14655
## - 'GTEP:CDP' 1 0.0758 487.53 -14655
## - 'AFDP:TIT' 1 0.0890 487.54 -14655
## - 'AH:GTEP' 1 0.0981 487.55 -14654
## - 'AH:CDP' 1 0.1058 487.56 -14654
## - 'AFDP:TEY' 1 0.1167 487.57 -14654
## - 'AP:CDP' 1 0.1186 487.57 -14654
## - 'AH:TEY' 1 0.1271 487.58 -14654
## - 'TIT:TEY' 1 0.1432 487.60 -14654
## - 'AH:TAT' 1 0.1496 487.60 -14654
## <none> 487.45 -14654
## - AT 1 0.2193 487.67 -14653
## - 'AH:TIT' 1 0.2410 487.69 -14653
## - 'AT:AFDP' 1 0.2413 487.69 -14653
## - 'AT:AH' 1 0.3212 487.77 -14652
## - 'TIT:CDP' 1 0.3770 487.83 -14651
## - 'AP:GTEP' 1 0.4227 487.87 -14651
## - 'TAT:TEY' 1 0.4316 487.88 -14650
## - 'AH:AFDP' 1 0.4437 487.90 -14650
## - TEY 1 0.4847 487.94 -14650
## - CDP 1 0.5111 487.96 -14650
## - 'AFDP:CDP' 1 0.5403 487.99 -14649
## - 'AFDP:TAT' 1 0.6927 488.14 -14647
## - 'AT:TAT' 1 0.7359 488.19 -14647

```

```

## - 'AP:AH'      1  0.7789 488.23 -14646
## - 'AFDP:GTEP' 1  0.7972 488.25 -14646
## - AFDP        1  0.8850 488.34 -14645
## - 'AT:GTEP'   1  1.0070 488.46 -14644
## - TIT         1  1.7670 489.22 -14634
## - 'AT:TEY'    1  1.8543 489.31 -14633
## - 'AT:TIT'    1  2.2010 489.65 -14629
## - 'AP:TAT'    1  2.8418 490.29 -14621
## - AP          1  3.2221 490.67 -14617
## - 'TIT:TAT'   1  3.5622 491.01 -14613
## - 'AP:TIT'    1  3.6472 491.10 -14612
## - TAT         1  4.5281 491.98 -14601
## - 'AP:TEY'    1  5.0060 492.46 -14595
## - 'AT:AP'     1  5.4175 492.87 -14590
##
## Step: AIC=-14655.5
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AP:CDP' +
##           'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##           'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##           'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:CDP' + 'TIT:TAT' +
##           'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'GTEP:TIT'  1  0.0174 487.49 -14657
## - GTEP        1  0.0280 487.50 -14657
## - 'GTEP:TAT'  1  0.0498 487.52 -14657
## - 'TEY:CDP'   1  0.0498 487.52 -14657
## - 'TAT:CDP'   1  0.0544 487.52 -14657
## - 'GTEP:CDP'  1  0.0768 487.54 -14657
## - 'AFDP:TIT'  1  0.0883 487.56 -14656
## - 'AH:GTEP'   1  0.1041 487.57 -14656
## - 'AH:CDP'   1  0.1042 487.57 -14656
## - 'AFDP:TEY'  1  0.1177 487.59 -14656
## - 'AP:CDP'   1  0.1189 487.59 -14656
## - 'AH:TEY'   1  0.1309 487.60 -14656
## - 'AH:TAT'   1  0.1339 487.60 -14656
## - 'TIT:TEY'   1  0.1412 487.61 -14656
## <none>            487.47 -14656
## - AT          1  0.2035 487.67 -14655
## - 'AH:TIT'   1  0.2542 487.72 -14654
## - 'AT:AFDP'  1  0.2587 487.73 -14654
## - 'AT:AH'    1  0.3360 487.80 -14653
## - 'TIT:CDP'  1  0.3670 487.83 -14653
## - 'TAT:TEY'  1  0.4347 487.90 -14652
## - 'AP:GTEP'  1  0.4617 487.93 -14652
## - TEY         1  0.4834 487.95 -14652
## - CDP         1  0.5063 487.97 -14651
## - 'AFDP:CDP' 1  0.5363 488.00 -14651
## - 'AH:AFDP'  1  0.5477 488.02 -14651
## - 'AFDP:TAT' 1  0.6836 488.15 -14649
## - 'AT:TAT'   1  0.7415 488.21 -14648
## - 'AFDP:GTEP' 1  0.7989 488.27 -14648

```

```

## - AFDP      1  0.8705 488.34 -14647
## - 'AP:AH'   1  0.9390 488.41 -14646
## - 'AT:GTEP' 1  1.0018 488.47 -14645
## - TIT       1  1.7604 489.23 -14636
## - 'AT:TEY'  1  1.9975 489.47 -14633
## - 'AT:TIT'  1  2.3341 489.80 -14629
## - 'AP:TAT'  1  2.8272 490.30 -14623
## - AP        1  3.2116 490.68 -14619
## - 'TIT:TAT' 1  3.5800 491.05 -14614
## - 'AP:TIT'  1  3.6319 491.10 -14614
## - TAT       1  4.5200 491.99 -14603
## - 'AP:TEY'  1  4.9901 492.46 -14597
## - 'AT:AP'   1  5.4820 492.95 -14591
##
## Step: AIC=-14657.29
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AP:CDP' +
##           'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##           'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##           'AFDP:CDP' + 'GTEP:TAT' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##           'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - GTEP      1  0.0216 487.51 -14659
## - 'TEY:CDP' 1  0.0324 487.52 -14659
## - 'TAT:CDP' 1  0.0523 487.54 -14659
## - 'AFDP:TIT' 1  0.0877 487.57 -14658
## - 'AP:CDP'  1  0.1031 487.59 -14658
## - 'AH:GTEP' 1  0.1059 487.59 -14658
## - 'AFDP:TEY' 1  0.1194 487.60 -14658
## - 'AH:TEY'  1  0.1252 487.61 -14658
## - 'AH:CDP'  1  0.1539 487.64 -14657
## <none>            487.49 -14657
## - 'AH:TAT'  1  0.1722 487.66 -14657
## - 'GTEP:TAT' 1  0.2031 487.69 -14657
## - AT        1  0.2111 487.70 -14657
## - 'AT:AFDP' 1  0.2607 487.75 -14656
## - 'AH:TIT'  1  0.3071 487.79 -14656
## - 'AT:AH'   1  0.3265 487.81 -14655
## - 'GTEP:CDP' 1  0.3341 487.82 -14655
## - 'TIT:CDP'  1  0.3581 487.84 -14655
## - 'TIT:TEY'  1  0.4469 487.93 -14654
## - 'AP:GTEP'  1  0.4672 487.95 -14654
## - CDP       1  0.4900 487.98 -14653
## - TEY       1  0.4941 487.98 -14653
## - 'TAT:TEY' 1  0.4982 487.98 -14653
## - 'AFDP:CDP' 1  0.5277 488.01 -14653
## - 'AH:AFDP'  1  0.5416 488.03 -14653
## - 'AFDP:TAT' 1  0.6820 488.17 -14651
## - 'AT:TAT'  1  0.7501 488.24 -14650
## - AFDP      1  0.8687 488.35 -14649
## - 'AFDP:GTEP' 1  0.8790 488.36 -14649
## - 'AP:AH'   1  0.9399 488.43 -14648

```

```

## - 'AT:GTEP' 1 1.0105 488.50 -14647
## - TIT 1 1.7498 489.24 -14638
## - 'AT:TEY' 1 1.9906 489.48 -14635
## - 'AT:TIT' 1 2.3257 489.81 -14631
## - 'AP:TAT' 1 2.8850 490.37 -14624
## - AP 1 3.1967 490.68 -14621
## - 'TIT:TAT' 1 3.5649 491.05 -14616
## - 'AP:tit' 1 3.6903 491.18 -14615
## - TAT 1 4.6478 492.13 -14603
## - 'AP:TEY' 1 4.9898 492.48 -14599
## - 'AT:AP' 1 5.4741 492.96 -14593
##
## Step: AIC=-14659.03
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:GTEP' + 'AP:tit' + 'AP:TAT' + 'AP:TEY' + 'AP:CDP' +
##   'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##   'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##   'AFDP:CDP' + 'GTEP:TAT' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##                                     Df Sum of Sq    RSS    AIC
## - 'TEY:CDP' 1 0.0334 487.54 -14661
## - 'TAT:CDP' 1 0.0461 487.55 -14660
## - 'AH:GTEP' 1 0.0874 487.59 -14660
## - 'AFDP:TIT' 1 0.0878 487.59 -14660
## - 'AP:CDP' 1 0.1025 487.61 -14660
## - 'AH:TEY' 1 0.1075 487.61 -14660
## - 'AFDP:TEY' 1 0.1174 487.62 -14660
## - 'AH:TAT' 1 0.1570 487.66 -14659
## - 'AH:CDP' 1 0.1573 487.66 -14659
## <none>                      487.51 -14659
## - AT 1 0.1897 487.70 -14659
## - 'AT:AFDP' 1 0.2584 487.77 -14658
## - 'AH:TIT' 1 0.2878 487.79 -14658
## - 'AT:AH' 1 0.3073 487.81 -14657
## - 'GTEP:CDP' 1 0.3216 487.83 -14657
## - 'TIT:CDP' 1 0.3665 487.87 -14657
## - 'TIT:TEY' 1 0.4494 487.96 -14656
## - TEY 1 0.4739 487.98 -14655
## - CDP 1 0.4837 487.99 -14655
## - 'TAT:TEY' 1 0.5253 488.03 -14655
## - 'AFDP:CDP' 1 0.5378 488.04 -14654
## - 'AH:AFDP' 1 0.5605 488.07 -14654
## - 'AFDP:TAT' 1 0.6764 488.18 -14653
## - 'GTEP:TAT' 1 0.7013 488.21 -14652
## - 'AT:TAT' 1 0.7400 488.25 -14652
## - 'AP:GTEP' 1 0.7403 488.25 -14652
## - AFDP 1 0.8594 488.37 -14651
## - 'AFDP:GTEP' 1 0.8599 488.37 -14651
## - 'AP:AH' 1 0.9234 488.43 -14650
## - 'AT:GTEP' 1 1.0059 488.51 -14649
## - TIT 1 1.7470 489.25 -14640
## - 'AT:TEY' 1 2.0162 489.52 -14637

```

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## - 'AT:TIT'      1    2.3517 489.86 -14633
## - 'AP:TAT'      1    2.8643 490.37 -14626
## - AP            1    3.4459 490.95 -14619
## - 'AP:TIT'      1    3.7049 491.21 -14616
## - 'TIT:TAT'     1    3.7897 491.30 -14615
## - TAT           1    4.6400 492.15 -14605
## - 'AP:TEY'      1    5.2556 492.76 -14598
## - 'AT:AP'        1    5.9358 493.44 -14590
##
## Step: AIC=-14660.63
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AP:CDP' +
##   'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##   'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##   'AFDP:CDP' + 'GTEP:TAT' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'AP:CDP'      1    0.0853 487.63 -14662
## - 'AH:GTEP'     1    0.0864 487.63 -14662
## - 'TAT:CDP'     1    0.0874 487.63 -14662
## - 'AFDP:TEY'    1    0.0885 487.63 -14662
## - 'AH:TEY'      1    0.1006 487.64 -14661
## <none>          487.54 -14661
## - 'AH:TAT'      1    0.1709 487.71 -14661
## - 'AH:CDP'      1    0.1851 487.73 -14660
## - AT            1    0.1996 487.74 -14660
## - 'AT:AFDP'     1    0.2444 487.78 -14660
## - 'GTEP:CDP'    1    0.3014 487.84 -14659
## - 'AH:TIT'      1    0.3055 487.85 -14659
## - 'AT:AH'        1    0.3095 487.85 -14659
## - CDP           1    0.4562 488.00 -14657
## - 'TIT:CDP'     1    0.4616 488.00 -14657
## - 'TAT:TEY'     1    0.5091 488.05 -14656
## - TEY           1    0.5396 488.08 -14656
## - 'AH:AFDP'     1    0.5708 488.11 -14656
## - 'TIT:TEY'     1    0.6320 488.17 -14655
## - 'AFDP:CDP'    1    0.6715 488.21 -14654
## - 'GTEP:TAT'    1    0.6751 488.22 -14654
## - 'AFDP:TIT'    1    0.7000 488.24 -14654
## - 'AP:GTEP'     1    0.7114 488.25 -14654
## - 'AT:TAT'      1    0.7227 488.26 -14654
## - 'AFDP:GTEP'   1    0.8304 488.37 -14653
## - 'AP:AH'        1    0.9167 488.46 -14652
## - 'AT:GTEP'     1    1.0088 488.55 -14650
## - AFDP          1    1.0449 488.59 -14650
## - TIT           1    1.7400 489.28 -14642
## - 'AFDP:TAT'    1    2.1716 489.71 -14636
## - 'AT:TEY'      1    2.2125 489.75 -14636
## - 'AT:TIT'      1    2.3190 489.86 -14635
## - 'AP:TAT'      1    2.8352 490.38 -14628
## - AP            1    3.4140 490.95 -14621
## - 'AP:TIT'      1    3.6815 491.22 -14618

```

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## - 'TIT:TAT' 1 3.7828 491.32 -14617
## - TAT 1 4.6173 492.16 -14607
## - 'AP:TEY' 1 5.2476 492.79 -14599
## - 'AT:AP' 1 5.9085 493.45 -14592
##
## Step: AIC=-14661.59
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##   'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TAT' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##   'TAT:CDP'
##
##          Df Sum of Sq    RSS    AIC
## - 'TAT:CDP' 1  0.0580 487.68 -14663
## - 'AH:GTEP' 1  0.0893 487.71 -14662
## - 'AH:TEY' 1  0.1009 487.73 -14662
## - 'AFDP:TEY' 1  0.1054 487.73 -14662
## <none>           487.63 -14662
## - 'AH:TAT' 1  0.1682 487.79 -14662
## - 'AH:CDP' 1  0.1800 487.81 -14661
## - 'AT:AFDP' 1  0.2527 487.88 -14660
## - AT 1  0.2593 487.88 -14660
## - 'GTEP:CDP' 1  0.2779 487.90 -14660
## - 'AH:TIT' 1  0.3016 487.93 -14660
## - 'AT:AH' 1  0.3054 487.93 -14660
## - 'TAT:TEY' 1  0.4476 488.07 -14658
## - 'TIT:CDP' 1  0.4746 488.10 -14658
## - CDP 1  0.5578 488.18 -14657
## - 'AH:AFDP' 1  0.5638 488.19 -14657
## - 'TIT:TEY' 1  0.6374 488.26 -14656
## - TEY 1  0.6450 488.27 -14656
## - 'AFDP:TIT' 1  0.6800 488.31 -14655
## - 'GTEP:TAT' 1  0.6866 488.31 -14655
## - 'AP:GTEP' 1  0.7129 488.34 -14655
## - 'AFDP:CDP' 1  0.7179 488.34 -14655
## - 'AT:TAT' 1  0.7346 488.36 -14655
## - 'AFDP:GTEP' 1  0.7919 488.42 -14654
## - 'AP:AH' 1  0.9124 488.54 -14652
## - 'AT:GTEP' 1  0.9834 488.61 -14652
## - AFDP 1  1.0736 488.70 -14651
## - TIT 1  2.0382 489.66 -14639
## - 'AFDP:TAT' 1  2.1485 489.77 -14638
## - 'AT:TEY' 1  2.1576 489.78 -14638
## - 'AT:TIT' 1  2.2626 489.89 -14636
## - AP 1  3.4159 491.04 -14622
## - 'TIT:TAT' 1  3.6981 491.32 -14619
## - 'AP:TIT' 1  5.3357 492.96 -14599
## - 'AP:TEY' 1  5.4565 493.08 -14598
## - 'AP:TAT' 1  5.6776 493.30 -14595
## - 'AT:AP' 1  6.1492 493.77 -14590
## - TAT 1  10.1945 497.82 -14541
##

```

```

## Step: AIC=-14662.89
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##   'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TAT' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY'
##
##              Df Sum of Sq    RSS    AIC
## - 'AH:GTEP'     1  0.0975 487.78 -14664
## - 'AH:TEY'      1  0.1118 487.80 -14664
## <none>          487.68 -14663
## - 'AH:TAT'      1  0.1892 487.87 -14663
## - 'AH:CDP'      1  0.1896 487.87 -14663
## - 'GTEP:CDP'    1  0.2318 487.92 -14662
## - 'AFDP:TEY'    1  0.2517 487.94 -14662
## - 'AT:AH'        1  0.3068 487.99 -14661
## - 'AH:TIT'       1  0.3274 488.01 -14661
## - 'AT:AFDP'      1  0.3511 488.03 -14661
## - 'AH:AFDP'      1  0.5585 488.24 -14658
## - 'CDP'          1  0.5751 488.26 -14658
## - 'AFDP:TIT'     1  0.6225 488.31 -14657
## - 'AT'            1  0.6255 488.31 -14657
## - 'TIT:CDP'      1  0.6489 488.33 -14657
## - 'AFDP:GTEP'    1  0.7342 488.42 -14656
## - 'AP:GTEP'      1  0.7788 488.46 -14656
## - 'TIT:TEY'       1  0.7978 488.48 -14655
## - 'GTEP:TAT'     1  0.8023 488.49 -14655
## - 'AT:TAT'        1  0.8612 488.54 -14654
## - 'AP:AH'          1  0.9159 488.60 -14654
## - 'AT:GTEP'        1  0.9300 488.61 -14654
## - 'AFDP:CDP'      1  0.9604 488.64 -14653
## - 'TEY'            1  1.1938 488.88 -14650
## - 'AFDP'           1  1.2313 488.91 -14650
## - 'TAT:TEY'        1  1.3635 489.05 -14648
## - 'AFDP:TAT'      1  2.1045 489.79 -14640
## - 'AT:TEY'          1  2.1167 489.80 -14639
## - 'AT:TIT'          1  2.2081 489.89 -14638
## - 'TIT'             1  2.3820 490.07 -14636
## - 'AP'              1  3.4218 491.11 -14624
## - 'TIT:TAT'         1  4.7195 492.40 -14608
## - 'AP:TIT'          1  5.5262 493.21 -14598
## - 'AP:TEY'          1  5.6821 493.37 -14596
## - 'AP:TAT'          1  6.0431 493.73 -14592
## - 'AT:AP'            1  6.6441 494.33 -14585
## - 'TAT'              1 10.3321 498.02 -14541
##
## Step: AIC=-14663.71
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##   'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##   'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##   'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TAT' +
##   'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY'

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##                                     Df Sum of Sq   RSS   AIC
## - 'AH:TEY'          1  0.1041 487.89 -14664
## - 'AH:TAT'          1  0.1555 487.94 -14664
## <none>                  487.78 -14664
## - 'AH:CDP'          1  0.1895 487.97 -14663
## - 'AFDP:TEY'         1  0.2589 488.04 -14663
## - 'GTEP:CDP'         1  0.2643 488.05 -14662
## - 'AH:TIT'          1  0.2816 488.06 -14662
## - 'AT:AH'            1  0.2854 488.07 -14662
## - 'AT:AFDP'          1  0.3623 488.14 -14661
## - CDP                 1  0.5697 488.35 -14659
## - 'AH:AFDP'          1  0.6109 488.39 -14658
## - AT                  1  0.6251 488.41 -14658
## - 'AFDP:TIT'          1  0.6291 488.41 -14658
## - 'TIT:CDP'          1  0.6422 488.42 -14658
## - 'GTEP:TAT'          1  0.7279 488.51 -14657
## - 'AP:GTEP'           1  0.7408 488.52 -14657
## - 'AFDP:GTEP'         1  0.7852 488.57 -14656
## - 'TIT:TEY'           1  0.8066 488.59 -14656
## - 'AP:AH'             1  0.8379 488.62 -14656
## - 'AFDP:CDP'          1  0.9618 488.74 -14654
## - 'AT:TAT'            1  0.9770 488.76 -14654
## - AFDP                1  1.2143 489.00 -14651
## - TEY                 1  1.2247 489.01 -14651
## - 'TAT:TEY'           1  1.3119 489.09 -14650
## - 'AT:GTEP'           1  1.6565 489.44 -14646
## - 'AFDP:TAT'          1  2.1047 489.89 -14640
## - 'AT:TEY'             1  2.1771 489.96 -14639
## - TIT                 1  2.4335 490.21 -14636
## - 'AT:TIT'             1  2.4422 490.22 -14636
## - AP                  1  3.4885 491.27 -14624
## - 'TIT:TAT'            1  4.7104 492.49 -14609
## - 'AP:TIT'             1  5.5906 493.37 -14598
## - 'AP:TEY'             1  5.7371 493.52 -14597
## - 'AP:TAT'             1  6.0817 493.86 -14592
## - 'AT:AP'              1  6.7960 494.58 -14584
## - TAT                 1 10.4122 498.19 -14541
##
## Step:  AIC=-14664.45
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##           'AH:TIT' + 'AH:TAT' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##           'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TAT' + 'GTEP:CDP' +
##           'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY'
##
##                                     Df Sum of Sq   RSS   AIC
## - 'AH:TAT'          1  0.0715 487.96 -14666
## <none>                  487.89 -14664
## - 'AH:TIT'          1  0.1778 488.06 -14664
## - 'AT:AH'            1  0.1860 488.07 -14664
## - 'GTEP:CDP'          1  0.2405 488.13 -14664
## - 'AH:CDP'            1  0.2411 488.13 -14664

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## - 'AFDP:TEY'    1  0.2826 488.17 -14663
## - 'AT:AFDP'    1  0.5391 488.42 -14660
## - CDP          1  0.5500 488.44 -14660
## - 'AFDP:TIT'   1  0.5603 488.45 -14660
## - 'TIT:CDP'    1  0.6270 488.51 -14659
## - 'AFDP:GTEP'  1  0.7466 488.63 -14657
## - AT           1  0.7543 488.64 -14657
## - 'TIT:TEY'    1  0.7655 488.65 -14657
## - 'AP:GTEP'    1  0.7710 488.66 -14657
## - 'GTEP:TAT'   1  0.7750 488.66 -14657
## - 'AH:AFDP'    1  0.8378 488.72 -14656
## - 'AFDP:CDP'   1  0.9529 488.84 -14655
## - 'AP:AH'      1  1.0613 488.95 -14654
## - 'AT:TAT'     1  1.2574 489.14 -14651
## - 'TAT:TEY'    1  1.2710 489.16 -14651
## - TEY          1  1.3807 489.27 -14650
## - AFDP         1  1.5147 489.40 -14648
## - 'AT:GTEP'    1  1.5757 489.46 -14647
## - 'AFDP:TAT'   1  2.0972 489.98 -14641
## - TIT          1  2.6078 490.49 -14635
## - 'AT:TEY'     1  2.6664 490.55 -14634
## - 'AT:TIT'     1  2.7771 490.66 -14633
## - AP           1  3.5008 491.39 -14624
## - 'TIT:TAT'    1  4.6267 492.51 -14611
## - 'AP:TIT'     1  5.7557 493.64 -14597
## - 'AP:TEY'     1  5.9404 493.83 -14595
## - 'AP:TAT'     1  6.3364 494.22 -14590
## - 'AT:AP'      1  7.1936 495.08 -14580
## - TAT          1  10.7573 498.64 -14538
##
## Step:  AIC=-14665.58
## .outcome ~ AT + AP + AFDP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AP:AH' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' + 'AH:AFDP' +
##           'AH:TIT' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##           'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TAT' + 'GTEP:CDP' + 'TIT:TAT' +
##           'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY'
##
##                               Df Sum of Sq    RSS    AIC
## <none>                      487.96 -14666
## - 'AT:AH'        1  0.2357 488.19 -14665
## - 'GTEP:CDP'    1  0.2487 488.21 -14665
## - 'AFDP:TEY'    1  0.2865 488.24 -14664
## - 'AFDP:TIT'    1  0.5428 488.50 -14661
## - 'AT:AFDP'     1  0.6096 488.57 -14660
## - CDP          1  0.6129 488.57 -14660
## - 'TIT:CDP'    1  0.6579 488.61 -14660
## - AT           1  0.7416 488.70 -14659
## - 'AFDP:GTEP'  1  0.7593 488.72 -14658
## - 'AP:GTEP'    1  0.7941 488.75 -14658
## - 'GTEP:TAT'   1  0.7962 488.75 -14658
## - 'TIT:TEY'    1  0.8017 488.76 -14658
## - 'AFDP:CDP'   1  0.9393 488.90 -14656
## - 'AH:AFDP'    1  0.9635 488.92 -14656

```

```

## - 'AP:AH'      1  1.0487 489.01 -14655
## - 'AH:CDP'     1  1.0612 489.02 -14655
## - 'AH:TIT'     1  1.1103 489.07 -14654
## - 'TAT:TEY'    1  1.2461 489.20 -14652
## - TEY          1  1.3558 489.31 -14651
## - 'AT:TAT'     1  1.3874 489.34 -14651
## - 'AT:GTEP'    1  1.5513 489.51 -14649
## - AFDP         1  1.5775 489.53 -14648
## - 'AFDP:TAT'   1  2.1042 490.06 -14642
## - TIT          1  2.6063 490.56 -14636
## - 'AT:TEY'     1  2.8405 490.80 -14633
## - 'AT:TIT'     1  2.9835 490.94 -14632
## - AP           1  3.4646 491.42 -14626
## - 'TIT:TAT'   1  4.6838 492.64 -14611
## - 'AP:TIT'     1  5.7239 493.68 -14599
## - 'AP:TEY'     1  5.9098 493.87 -14596
## - 'AP:TAT'     1  6.3174 494.27 -14592
## - 'AT:AP'      1  7.1848 495.14 -14581
## - TAT          1  10.9205 498.88 -14537
## Start: AIC=-18186.66
## .outcome ~ AT + AP + AH + AFDP + GTEP + TIT + TAT + TEY + CDP +
##   'AT:AP' + 'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' +
##   'AT:TEY' + 'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' +
##   'AP:TAT' + 'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' +
##   'AH:TIT' + 'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' +
##   'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' +
##   'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' +
##   'TIT:CDP' + 'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - AH          1  0.0004 621.19 -18189
## - 'AT:CDP'    1  0.0100 621.19 -18189
## - 'TAT:CDP'   1  0.0215 621.21 -18188
## - 'AP:CDP'    1  0.0275 621.21 -18188
## - 'AH:CDP'    1  0.0795 621.26 -18188
## - 'AP:AFDP'   1  0.0799 621.26 -18188
## - 'GTEP:CDP'  1  0.0972 621.28 -18188
## - 'AFDP:TIT'  1  0.0980 621.28 -18188
## - 'AFDP:TEY'  1  0.0998 621.28 -18188
## - 'TEY:CDP'   1  0.1111 621.30 -18187
## - 'AT:AFDP'   1  0.1184 621.30 -18187
## - 'TIT:TEY'   1  0.1295 621.31 -18187
## - 'AH:TAT'    1  0.1338 621.32 -18187
## - 'TAT:TEY'   1  0.1365 621.32 -18187
## - 'AH:TEY'    1  0.1606 621.35 -18187
## - 'AT:TAT'    1  0.1616 621.35 -18187
## <none>          621.18 -18187
## - 'GTEP:TAT'  1  0.2263 621.41 -18186
## - 'AH:TIT'    1  0.2364 621.42 -18186
## - 'GTEP:TEY'  1  0.2473 621.43 -18186
## - 'GTEP:TIT'  1  0.2476 621.43 -18186
## - 'AFDP:CDP'  1  0.2848 621.47 -18185
## - CDP          1  0.3713 621.56 -18184
## - 'TIT:CDP'   1  0.3972 621.58 -18184

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## - 'AFDP:TAT'    1  0.4184 621.60 -18184
## - 'AT:TIT'      1  0.4276 621.61 -18184
## - AT            1  0.4655 621.65 -18183
## - 'AH:GTEP'     1  0.4880 621.67 -18183
## - 'AP:GTEP'     1  0.4975 621.68 -18183
## - GTEP          1  0.5662 621.75 -18182
## - 'AT:AH'        1  0.6359 621.82 -18181
## - TEY           1  0.6689 621.85 -18181
## - 'AH:AFDP'     1  0.7510 621.94 -18180
## - AFDP          1  0.8133 622.00 -18179
## - 'AFDP:GTEP'   1  0.8607 622.05 -18178
## - 'AT:GTEP'     1  0.9350 622.12 -18178
## - TIT           1  1.0885 622.27 -18176
## - 'AT:TEY'       1  1.5675 622.75 -18170
## - 'AP:AH'        1  1.6365 622.82 -18169
## - 'AP:TAT'       1  1.7687 622.95 -18168
## - 'AP:TIT'       1  2.5056 623.69 -18159
## - AP             1  2.9082 624.09 -18154
## - TAT           1  3.0165 624.20 -18153
## - 'TIT:TAT'     1  3.2306 624.42 -18150
## - 'AP:TEY'       1  4.5933 625.78 -18134
## - 'AT:AP'        1  6.5855 627.77 -18111
##
## Step: AIC=-18188.66
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##           'AT:CDP' + 'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' +
##           'AP:TEY' + 'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' +
##           'AH:TAT' + 'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' +
##           'AFDP:TAT' + 'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' +
##           'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' +
##           'TAT:TEY' + 'TAT:CDP' + 'TEY:CDP'
##
##               Df Sum of Sq   RSS   AIC
## - 'AT:CDP'      1  0.0100 621.20 -18191
## - 'TAT:CDP'     1  0.0212 621.21 -18190
## - 'AP:CDP'      1  0.0275 621.21 -18190
## - 'AH:CDP'      1  0.0800 621.27 -18190
## - 'AP:AFDP'     1  0.0925 621.28 -18190
## - 'GTEP:CDP'    1  0.0975 621.28 -18190
## - 'AFDP:TIT'    1  0.0983 621.28 -18190
## - 'AFDP:TEY'    1  0.0994 621.28 -18190
## - 'TEY:CDP'     1  0.1108 621.30 -18189
## - 'AT:AFDP'     1  0.1224 621.31 -18189
## - 'TIT:TEY'     1  0.1292 621.31 -18189
## - 'TAT:TEY'     1  0.1366 621.32 -18189
## - 'AH:TAT'      1  0.1609 621.35 -18189
## - 'AT:TAT'      1  0.1616 621.35 -18189
## <none>           621.19 -18189
## - 'GTEP:TAT'   1  0.2288 621.41 -18188
## - 'GTEP:TIT'   1  0.2531 621.44 -18188
## - 'GTEP:TEY'   1  0.2540 621.44 -18188
## - 'AFDP:CDP'   1  0.2845 621.47 -18187
## - 'AH:TEY'     1  0.3101 621.50 -18187

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## - 'AH:TIT'      1  0.3474 621.53 -18187
## - CDP          1  0.3709 621.56 -18186
## - 'TIT:CDP'    1  0.4022 621.59 -18186
## - 'AFDP:TAT'   1  0.4204 621.61 -18186
## - 'AT:TIT'     1  0.4387 621.62 -18185
## - 'AH:GTEP'    1  0.4885 621.67 -18185
## - 'AP:GTEP'    1  0.4971 621.68 -18185
## - AT           1  0.5312 621.72 -18184
## - GTEP         1  0.6041 621.79 -18184
## - TEY          1  0.6696 621.85 -18183
## - 'AH:AFDP'   1  0.8384 622.02 -18181
## - 'AT:AH'      1  0.8647 622.05 -18180
## - AFDP         1  0.8780 622.06 -18180
## - 'AFDP:GTEP' 1  0.8850 622.07 -18180
## - 'AT:GTEP'   1  0.9490 622.13 -18179
## - TIT          1  1.0981 622.28 -18178
## - 'AT:TEY'    1  1.7173 622.90 -18170
## - 'AP:TAT'    1  1.7829 622.97 -18170
## - 'AP:AH'      1  1.8529 623.04 -18169
## - 'AP:TIT'    1  2.5318 623.72 -18161
## - AP           1  2.9421 624.13 -18156
## - TAT          1  3.0521 624.24 -18155
## - 'TIT:TAT'   1  3.2333 624.42 -18152
## - 'AP:TEY'    1  4.6234 625.81 -18136
## - 'AT:AP'     1  6.8927 628.08 -18109
##
## Step: AIC=-18190.54
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##       'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##       'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TAT' + 'AP:TEY' +
##       'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##       'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##       'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##       'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##       'TAT:CDP' + 'TEY:CDP'
##
##             Df Sum of Sq   RSS   AIC
## - 'TAT:CDP'   1  0.0190 621.21 -18192
## - 'AP:CDP'    1  0.0509 621.25 -18192
## - 'AH:CDP'    1  0.0729 621.27 -18192
## - 'AFDP:TEY'  1  0.0913 621.29 -18192
## - 'GTEP:CDP'  1  0.0970 621.29 -18191
## - 'AP:AFDP'   1  0.0973 621.29 -18191
## - 'AT:AFDP'   1  0.1131 621.31 -18191
## - 'TEY:CDP'   1  0.1210 621.32 -18191
## - 'TAT:TEY'   1  0.1450 621.34 -18191
## - 'AH:TAT'    1  0.1582 621.35 -18191
## <none>                   621.20 -18191
## - 'GTEP:TAT'  1  0.2201 621.42 -18190
## - 'GTEP:TIT'  1  0.2435 621.44 -18190
## - 'GTEP:TEY'  1  0.2443 621.44 -18190
## - 'TIT:TEY'   1  0.2622 621.46 -18189
## - 'AH:TEY'    1  0.3106 621.51 -18189
## - 'AFDP:TIT'  1  0.3338 621.53 -18189

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## - 'AH:TIT'      1  0.3642 621.56 -18188
## - CDP          1  0.3896 621.58 -18188
## - 'TIT:CDP'    1  0.4026 621.60 -18188
## - 'AH:GTEP'    1  0.4896 621.68 -18187
## - 'AP:GTEP'    1  0.5088 621.70 -18187
## - AT           1  0.5615 621.76 -18186
## - GTEP         1  0.5954 621.79 -18186
## - TEY          1  0.7214 621.92 -18184
## - 'AH:AFDP'   1  0.8294 622.02 -18183
## - 'AT:AH'      1  0.8582 622.05 -18182
## - AFDP         1  0.8725 622.07 -18182
## - 'AFDP:CDP'  1  0.8935 622.09 -18182
## - 'AFDP:GTEP' 1  0.9148 622.11 -18182
## - 'AT:GTEP'   1  0.9394 622.13 -18181
## - 'AT:TAT'    1  0.9723 622.17 -18181
## - 'AFDP:TAT'  1  1.2765 622.47 -18177
## - TIT          1  1.3757 622.57 -18176
## - 'AT:TEY'    1  1.7073 622.90 -18172
## - 'AP:AH'     1  1.8482 623.04 -18171
## - 'AT:TIT'    1  2.0508 623.25 -18168
## - 'AP:TAT'    1  2.0892 623.28 -18168
## - 'AP:TIT'    1  2.7967 623.99 -18159
## - AP           1  2.9321 624.13 -18158
## - 'TIT:TAT'  1  3.3555 624.55 -18153
## - TAT          1  3.5004 624.70 -18151
## - 'AP:TEY'   1  4.6190 625.81 -18138
## - 'AT:AP'    1  6.8889 628.08 -18111
##
## Step: AIC=-18192.32
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##          'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##          'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##          'AP:CDP' + 'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' +
##          'AH:TEY' + 'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' +
##          'AFDP:TEY' + 'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' +
##          'GTEP:CDP' + 'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' +
##          'TEY:CDP'
##
##                               Df Sum of Sq    RSS    AIC
## - 'AP:CDP'      1  0.0577 621.27 -18194
## - 'AFDP:TEY'    1  0.0723 621.29 -18194
## - 'AH:CDP'      1  0.0778 621.29 -18193
## - 'AT:AFDP'    1  0.0946 621.31 -18193
## - 'TEY:CDP'     1  0.1057 621.32 -18193
## - 'GTEP:CDP'    1  0.1128 621.33 -18193
## - 'AP:AFDP'     1  0.1142 621.33 -18193
## <none>                  621.21 -18192
## - 'AH:TAT'     1  0.1706 621.38 -18192
## - 'GTEP:TAT'   1  0.2093 621.42 -18192
## - 'TIT:TEY'    1  0.2436 621.46 -18191
## - 'GTEP:TIT'   1  0.2466 621.46 -18191
## - 'GTEP:TEY'   1  0.2995 621.51 -18191
## - 'TAT:TEY'    1  0.3040 621.52 -18191
## - 'AH:TEY'     1  0.3238 621.54 -18191

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## - 'AH:TIT'      1  0.3852 621.60 -18190
## - 'AFDP:TIT'    1  0.3914 621.61 -18190
## - CDP          1  0.4086 621.62 -18190
## - 'AH:GTEP'     1  0.4843 621.70 -18189
## - AT           1  0.5682 621.78 -18188
## - 'TIT:CDP'     1  0.6296 621.84 -18187
## - 'AP:GTEP'     1  0.6364 621.85 -18187
## - GTEP         1  0.6659 621.88 -18186
## - TEY          1  0.7522 621.97 -18185
## - 'AH:AFDP'     1  0.8215 622.04 -18185
## - AFDP         1  0.8536 622.07 -18184
## - 'AT:AH'       1  0.8811 622.10 -18184
## - 'AFDP:CDP'    1  0.9284 622.14 -18183
## - 'AT:GTEP'     1  1.1037 622.32 -18181
## - 'AT:TAT'      1  1.1090 622.32 -18181
## - 'AFDP:GTEP'   1  1.1266 622.34 -18181
## - TIT          1  1.3657 622.58 -18178
## - 'AFDP:TAT'    1  1.3727 622.59 -18178
## - 'AT:TEY'      1  1.8022 623.02 -18173
## - 'AP:AH'       1  1.8879 623.10 -18172
## - 'AT:TIT'      1  2.0702 623.28 -18170
## - 'AP:TAT'      1  2.0827 623.30 -18170
## - 'AP:TIT'      1  2.8030 624.02 -18161
## - AP            1  2.9323 624.15 -18160
## - TAT          1  3.5233 624.74 -18153
## - 'TIT:TAT'     1  4.2820 625.50 -18144
## - 'AP:TEY'      1  4.7645 625.98 -18138
## - 'AT:AP'       1  7.1019 628.32 -18110
##
## Step: AIC=-18193.63
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##      'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:TEY' +
##      'AFDP:CDP' + 'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' +
##      'TIT:TAT' + 'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'AFDP:TEY'  1  0.0603 621.33 -18195
## - 'TEY:CDP'   1  0.0664 621.34 -18195
## - 'GTEP:CDP'  1  0.0809 621.35 -18195
## - 'AT:AFDP'   1  0.0823 621.35 -18195
## - 'AH:CDP'   1  0.0939 621.37 -18195
## - 'AP:AFDP'   1  0.1095 621.38 -18194
## <none>          621.27 -18194
## - 'GTEP:TAT'  1  0.1683 621.44 -18194
## - 'AH:TAT'    1  0.1894 621.46 -18193
## - 'GTEP:TIT'  1  0.2049 621.48 -18193
## - 'TAT:TEY'   1  0.2504 621.52 -18193
## - 'GTEP:TEY'  1  0.2791 621.55 -18192
## - 'TIT:TEY'   1  0.3125 621.58 -18192
## - 'AH:TEY'    1  0.3198 621.59 -18192
## - 'AH:TIT'    1  0.4122 621.68 -18191

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## - 'AFDP:TIT'    1  0.4495 621.72 -18190
## - 'AH:GTEP'    1  0.4872 621.76 -18190
## - CDP          1  0.5518 621.82 -18189
## - 'TIT:CDP'    1  0.5779 621.85 -18189
## - AT           1  0.6257 621.90 -18188
## - GTEP         1  0.6357 621.91 -18188
## - 'AP:GTEP'    1  0.6429 621.91 -18188
## - 'AH:AFDP'    1  0.8134 622.09 -18186
## - AFDP         1  0.8173 622.09 -18186
## - TEY          1  0.8592 622.13 -18185
## - 'AT:AH'      1  0.8747 622.15 -18185
## - 'AFDP:CDP'   1  0.9828 622.25 -18184
## - 'AT:GTEP'    1  1.0699 622.34 -18183
## - 'AT:TAT'     1  1.0962 622.37 -18183
## - 'AFDP:GTEP'  1  1.1127 622.38 -18182
## - 'AFDP:TAT'   1  1.4777 622.75 -18178
## - TIT          1  1.5738 622.85 -18177
## - 'AT:TEY'     1  1.7983 623.07 -18174
## - 'AP:AH'      1  1.8886 623.16 -18173
## - 'AT:TIT'     1  2.0250 623.30 -18172
## - AP           1  2.9191 624.19 -18161
## - 'AP:TAT'     1  3.6854 624.96 -18152
## - 'AP:TIT'     1  3.8200 625.09 -18150
## - 'TIT:TAT'    1  4.2312 625.50 -18146
## - 'AP:TEY'     1  4.8865 626.16 -18138
## - TAT          1  6.4749 627.75 -18119
## - 'AT:AP'      1  7.1792 628.45 -18111
##
## Step: AIC=-18194.91
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##       'AT:AH' + 'AT:AFDP' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' +
##       'AP:AH' + 'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##       'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##       'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##       'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' +
##       'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##              Df Sum of Sq   RSS   AIC
## - 'AT:AFDP'  1  0.0242 621.36 -18197
## - 'TEY:CDP'  1  0.0386 621.37 -18197
## - 'GTEP:CDP' 1  0.0753 621.41 -18196
## - 'AH:CDP'   1  0.1057 621.44 -18196
## - 'AP:AFDP'  1  0.1219 621.45 -18196
## - <none>        621.33 -18195
## - 'AH:TAT'   1  0.1903 621.52 -18195
## - 'TAT:TEY'   1  0.2074 621.54 -18194
## - 'GTEP:TAT' 1  0.2398 621.57 -18194
## - 'TIT:TEY'   1  0.2763 621.61 -18194
## - 'AH:TEY'   1  0.3045 621.64 -18193
## - 'GTEP:TIT' 1  0.3109 621.64 -18193
## - 'AH:TIT'   1  0.4144 621.75 -18192
## - 'GTEP:TEY' 1  0.4773 621.81 -18191
## - 'AH:GTEP'  1  0.4837 621.82 -18191
## - CDP          1  0.5043 621.84 -18191

```

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## - 'TIT:CDP' 1 0.5334 621.87 -18191
## - 'AP:GTEP' 1 0.5855 621.92 -18190
## - AT 1 0.6990 622.03 -18189
## - GTEP 1 0.7881 622.12 -18188
## - 'AH:AFDP' 1 0.8544 622.19 -18187
## - AFDP 1 0.8868 622.22 -18186
## - 'AFDP:CDP' 1 0.9234 622.26 -18186
## - 'AT:AH' 1 0.9426 622.27 -18186
## - 'AFDP:GTEP' 1 1.0535 622.39 -18184
## - TEY 1 1.1084 622.44 -18184
## - 'AT:TAT' 1 1.2293 622.56 -18182
## - 'AFDP:TIT' 1 1.2736 622.61 -18182
## - 'AT:GTEP' 1 1.3575 622.69 -18181
## - TIT 1 1.7080 623.04 -18177
## - 'AP:AH' 1 1.8821 623.21 -18175
## - 'AT:TIT' 1 2.0361 623.37 -18173
## - 'AT:TEY' 1 2.1109 623.44 -18172
## - 'AFDP:TAT' 1 2.2563 623.59 -18170
## - AP 1 2.8869 624.22 -18163
## - 'AP:TAT' 1 3.7764 625.11 -18152
## - 'AP:TIT' 1 3.8502 625.18 -18151
## - 'TIT:TAT' 1 4.4258 625.76 -18145
## - 'AP:TEY' 1 4.9144 626.25 -18139
## - TAT 1 6.4234 627.76 -18121
## - 'AT:AP' 1 7.1239 628.46 -18113
##
## Step: AIC=-18196.63
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##      'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' +
##      'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY' + 'TEY:CDP'
##
##          Df Sum of Sq    RSS     AIC
## - 'TEY:CDP' 1  0.0346 621.39 -18198
## - 'GTEP:CDP' 1  0.0769 621.43 -18198
## - 'AH:CDP' 1  0.1076 621.46 -18197
## <none>           621.36 -18197
## - 'TAT:TEY' 1  0.2000 621.56 -18196
## - 'GTEP:TAT' 1  0.2331 621.59 -18196
## - 'AH:TAT' 1  0.2407 621.60 -18196
## - 'AP:AFDP' 1  0.2417 621.60 -18196
## - 'TIT:TEY' 1  0.2733 621.63 -18195
## - 'GTEP:TIT' 1  0.3061 621.66 -18195
## - 'AH:TEY' 1  0.3659 621.72 -18194
## - 'GTEP:TEY' 1  0.4731 621.83 -18193
## - CDP 1  0.4814 621.84 -18193
## - 'AH:GTEP' 1  0.4826 621.84 -18193
## - 'AH:TIT' 1  0.4884 621.84 -18193
## - 'TIT:CDP' 1  0.5103 621.87 -18193
## - 'AP:GTEP' 1  0.5794 621.94 -18192
## - GTEP 1  0.7890 622.15 -18189

```

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## - AT          1  0.8280 622.18 -18189
## - 'AFDP:CDP' 1  0.9084 622.26 -18188
## - 'AT:AH'    1  0.9205 622.28 -18188
## - AFDP       1  0.9926 622.35 -18187
## - 'AH:AFDP'  1  1.0019 622.36 -18187
## - TEY        1  1.0844 622.44 -18186
## - 'AFDP:GTEP' 1  1.1162 622.47 -18185
## - 'AFDP:TIT'  1  1.2814 622.64 -18183
## - 'AT:GTEP'  1  1.3763 622.73 -18182
## - TIT        1  1.7538 623.11 -18178
## - 'AP:AH'    1  1.9334 623.29 -18176
## - 'AFDP:TAT' 1  2.2329 623.59 -18172
## - 'AT:TAT'   1  2.3397 623.70 -18171
## - AP         1  2.9369 624.29 -18164
## - 'AP:TIT'   1  4.1406 625.50 -18150
## - 'AP:TAT'   1  4.1638 625.52 -18149
## - 'TIT:TAT'  1  4.4016 625.76 -18147
## - 'AT:TIT'   1  4.9436 626.30 -18140
## - 'AP:TEY'   1  5.1077 626.46 -18138
## - 'AT:TEY'   1  5.9038 627.26 -18129
## - 'AT:AP'    1  7.1036 628.46 -18115
## - TAT        1  7.2788 628.64 -18113
##
## Step: AIC=-18198.21
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##           'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##           'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##           'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##           'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##           'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'GTEP:CDP' + 'TIT:TAT' +
##           'TIT:TEY' + 'TIT:CDP' + 'TAT:TEY'
##
##              Df Sum of Sq   RSS   AIC
## - 'GTEP:CDP'  1  0.0430 621.43 -18200
## - 'AH:CDP'    1  0.1624 621.55 -18198
## <none>          621.39 -18198
## - 'AP:AFDP'   1  0.2411 621.63 -18197
## - 'GTEP:TAT'  1  0.2721 621.66 -18197
## - 'AH:TAT'   1  0.3121 621.70 -18197
## - 'AH:TEY'   1  0.3640 621.76 -18196
## - 'TAT:TEY'  1  0.3961 621.79 -18196
## - 'GTEP:TIT'  1  0.4103 621.80 -18195
## - 'GTEP:TEY'  1  0.4584 621.85 -18195
## - CDP        1  0.4788 621.87 -18195
## - 'AH:GTEP'  1  0.4869 621.88 -18194
## - 'TIT:CDP'  1  0.5311 621.92 -18194
## - 'AH:TIT'   1  0.5900 621.98 -18193
## - 'AP:GTEP'  1  0.6433 622.03 -18193
## - GTEP       1  0.7842 622.18 -18191
## - 'TIT:TEY'  1  0.8006 622.19 -18191
## - 'AT:AH'    1  0.9117 622.30 -18189
## - AT         1  0.9307 622.32 -18189
## - AFDP      1  0.9664 622.36 -18189
## - 'AH:AFDP' 1  1.0040 622.40 -18188

```

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## - 'AFDP:CDP' 1 1.1112 622.50 -18187
## - 'AFDP:GTEP' 1 1.1384 622.53 -18187
## - TEY 1 1.2306 622.62 -18186
## - 'AT:GTEP' 1 1.4023 622.79 -18184
## - 'AFDP:TIT' 1 1.5602 622.95 -18182
## - TIT 1 1.8019 623.19 -18179
## - 'AP:AH' 1 1.9417 623.33 -18177
## - 'AT:TAT' 1 2.3064 623.70 -18173
## - 'AFDP:TAT' 1 2.5416 623.93 -18170
## - AP 1 2.9022 624.29 -18166
## - 'AP:TIT' 1 4.1070 625.50 -18152
## - 'AP:TAT' 1 4.1365 625.53 -18151
## - 'TIT:TAT' 1 4.5343 625.93 -18147
## - 'AP:TEY' 1 5.0804 626.47 -18140
## - 'AT:TIT' 1 5.2356 626.63 -18138
## - 'AT:TEY' 1 5.8821 627.27 -18131
## - 'AT:AP' 1 7.0758 628.47 -18117
## - TAT 1 7.2515 628.64 -18115
##
## Step: AIC=-18199.7
## .outcome ~ AT + AP + AFDP + GTEP + TIT + TAT + TEY + CDP + 'AT:AP' +
##      'AT:AH' + 'AT:GTEP' + 'AT:TIT' + 'AT:TAT' + 'AT:TEY' + 'AP:AH' +
##      'AP:AFDP' + 'AP:GTEP' + 'AP:TIT' + 'AP:TAT' + 'AP:TEY' +
##      'AH:AFDP' + 'AH:GTEP' + 'AH:TIT' + 'AH:TAT' + 'AH:TEY' +
##      'AH:CDP' + 'AFDP:GTEP' + 'AFDP:TIT' + 'AFDP:TAT' + 'AFDP:CDP' +
##      'GTEP:TIT' + 'GTEP:TAT' + 'GTEP:TEY' + 'TIT:TAT' + 'TIT:TEY' +
##      'TIT:CDP' + 'TAT:TEY'
##
##                                     Df Sum of Sq    RSS     AIC
## <none>                          621.43 -18200
## - 'AH:CDP' 1 0.2085 621.64 -18199
## - 'AP:AFDP' 1 0.2375 621.67 -18199
## - 'GTEP:TAT' 1 0.2774 621.71 -18198
## - 'AH:TEY' 1 0.3429 621.78 -18198
## - 'AH:TAT' 1 0.3447 621.78 -18198
## - 'GTEP:TIT' 1 0.3806 621.81 -18197
## - 'TAT:TEY' 1 0.3888 621.82 -18197
## - 'AH:GTEP' 1 0.4968 621.93 -18196
## - 'AP:GTEP' 1 0.6040 622.04 -18195
## - 'AH:TIT' 1 0.6297 622.06 -18194
## - 'GTEP:TEY' 1 0.7206 622.15 -18193
## - CDP 1 0.7937 622.23 -18192
## - GTEP 1 0.8857 622.32 -18191
## - AT 1 0.8877 622.32 -18191
## - 'AT:AH' 1 0.8886 622.32 -18191
## - 'TIT:CDP' 1 0.9164 622.35 -18191
## - AFDP 1 0.9797 622.41 -18190
## - 'AH:AFDP' 1 1.0093 622.44 -18190
## - 'AFDP:CDP' 1 1.0853 622.52 -18189
## - 'AFDP:GTEP' 1 1.1087 622.54 -18189
## - TEY 1 1.1924 622.63 -18188
## - 'TIT:TEY' 1 1.2662 622.70 -18187
## - 'AFDP:TIT' 1 1.5684 623.00 -18183
## - 'AT:GTEP' 1 1.6403 623.07 -18182

```

```
## - TIT          1    1.7673 623.20 -18181
## - 'AP:AH'      1    1.9159 623.35 -18179
## - 'AT:TAT'     1    2.3168 623.75 -18174
## - 'AFDP:TAT'   1    2.5854 624.02 -18171
## - AP           1    2.9363 624.37 -18167
## - 'AP:TIT'     1    4.1129 625.55 -18153
## - 'AP:TAT'     1    4.1246 625.56 -18153
## - 'TIT:TAT'    1    4.9850 626.42 -18143
## - 'AP:TEY'     1    5.0608 626.49 -18142
## - 'AT:TIT'     1    5.8078 627.24 -18133
## - 'AT:TEY'     1    5.9370 627.37 -18132
## - 'AT:AP'       1    7.0451 628.48 -18119
## - TAT          1    7.3394 628.77 -18115
```