

Random Forest

214 samples  
44 predictor

Pre-processing: centered, scaled  
Resampling: Cross-Validated (10 fold, repeated 100 times)

Summary of sample sizes: 82, 81, 78, 81, 82, 82, ...

Resampling results across tuning parameters:

| mtry | RMSE     | Rsquared  | RMSE SD  | Rsquared SD |
|------|----------|-----------|----------|-------------|
| 2    | 25.75347 | 0.2675784 | 4.050332 | 0.2165895   |
| 23   | 19.76495 | 0.5446747 | 4.225342 | 0.2137226   |
| 44   | 19.24635 | 0.5544388 | 4.625063 | 0.2079521   |

RMSE was used to select the optimal model using the smallest value.  
The final value used for the model was mtry = 44.  
Linear Regression

214 samples  
44 predictor

Pre-processing: centered, scaled  
Resampling: Cross-Validated (10 fold, repeated 100 times)

Summary of sample sizes: 82, 82, 81, 82, 81, 81, ...

Resampling results

| RMSE     | Rsquared  | RMSE SD  | Rsquared SD |
|----------|-----------|----------|-------------|
| 27.46083 | 0.3499281 | 7.457433 | 0.2180236   |

Call:

```
lm(formula = T13_Percentile ~ T4_Percentile + T3HKQ9 + T3HKQ11 +  
    T3HKQ14 + T3HKQ20 + T3HKQ27 + T3HKQ28 + T3HKQ30 + T3HKQ33 +  
    T3HKQ35 + T3HKQ36 + T3HKQ40 + T3HKQ41 + T3HKQ43, data =  
    HK_Percentile[complete.cases(HK_Percentile[,  
    c(179, 182, 3:45)]), c(179, 182, 3:45)])
```

Residuals:

| Min     | 1Q      | Median | 3Q    | Max    |
|---------|---------|--------|-------|--------|
| -32.391 | -10.240 | -0.074 | 9.617 | 40.162 |

Coefficients:

|               | Estimate  | Std. Error | t value | Pr(> t ) |     |
|---------------|-----------|------------|---------|----------|-----|
| (Intercept)   | 117.45967 | 29.43909   | 3.990   | 0.000152 | *** |
| T4_Percentile | 0.65027   | 0.05583    | 11.648  | < 2e-16  | *** |
| T3HKQ9        | 6.02515   | 2.97004    | 2.029   | 0.046045 | *   |
| T3HKQ11       | 3.55859   | 2.24534    | 1.585   | 0.117202 |     |
| T3HKQ14       | -6.93121  | 2.38427    | -2.907  | 0.004795 | **  |
| T3HKQ20       | 5.73322   | 2.97247    | 1.929   | 0.057543 | .   |
| T3HKQ27       | -3.28750  | 1.96336    | -1.674  | 0.098213 | .   |
| T3HKQ28       | -4.87558  | 1.53061    | -3.185  | 0.002107 | **  |
| T3HKQ30       | -11.24825 | 3.57563    | -3.146  | 0.002375 | **  |
| T3HKQ33       | 11.30749  | 4.34744    | 2.601   | 0.011193 | *   |
| T3HKQ35       | 12.18710  | 7.13117    | 1.709   | 0.091588 | .   |
| T3HKQ36       | -14.11591 | 4.34504    | -3.249  | 0.001736 | **  |
| T3HKQ40       | -15.23375 | 6.44407    | -2.364  | 0.020669 | *   |
| T3HKQ41       | 4.10609   | 2.20075    | 1.866   | 0.065984 | .   |
| T3HKQ43       | -3.27637  | 2.12660    | -1.541  | 0.127608 |     |

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Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 15.46 on 75 degrees of freedom  
Multiple R-squared: 0.7399, Adjusted R-squared: 0.6913  
F-statistic: 15.24 on 14 and 75 DF, p-value: < 2.2e-16