Resultados

Cícero

2022-09-30

R Markdown

Variáveis testadas:

SalePrice x LotArea : Significativa

SalePrice x ExterQual : Siginificativa

SalePrice x ExterCond : significativa

SalePrice x OverallCond : Meio meh

SalePrice x Neighborhood : significativa para algumas vizinhaças

SalePrice x TotalBsmtSF : significativa

SalePrice x MiscVal : Poha nenhuma

SalePrice x MiscFeature : Poha nenhuma

```
dados <- read.csv('train.csv')
modeloLotArea <- lm(log(SalePrice) ~ LotArea,dados)
anova(modeloLotArea)
```

```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##             Df  Sum Sq Mean Sq F value    Pr(>F)
## LotArea      1  15.415 15.4146  103.38 < 2.2e-16 ***
## Residuals 1458 217.386  0.1491
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
modeloExterQual <- lm(log(SalePrice) ~ ExterQual,dados)
anova(modeloExterQual)
```

```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##             Df Sum Sq Mean Sq F value    Pr(>F)
## ExterQual    3 107.35  35.783   415.3 < 2.2e-16 ***
## Residuals 1456 125.45   0.086
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloExterCond <- lm(log(SalePrice) ~ ExterCond,dados)
anova(modeloExterCond)
```

```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##             Df  Sum Sq Mean Sq F value   Pr(>F)
## ExterCond    4  10.595 2.64886  17.345 6.54e-14 ***
## Residuals 1455 222.205 0.15272
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloOverallCond <- lm(log(SalePrice) ~ OverallCond,dados)
anova(modeloOverallCond)
```

```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##               Df  Sum Sq Mean Sq F value Pr(>F)
## OverallCond    1   0.316 0.31643  1.9845 0.1591
## Residuals   1458 232.484 0.15945
```

```r
modeloNeighborhood <- lm(log(SalePrice) ~ Neighborhood,dados)
anova(modeloNeighborhood)
```

```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##                Df  Sum Sq Mean Sq F value    Pr(>F)
## Neighborhood   24 132.884  5.5369   79.52 < 2.2e-16 ***
## Residuals    1435  99.916  0.0696
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloTotalBsmtSF <- lm(log(SalePrice) ~ TotalBsmtSF,dados)
anova(modeloTotalBsmtSF)
```

```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##               Df  Sum Sq Mean Sq F value    Pr(>F)
## TotalBsmtSF    1  87.232  87.232  873.71 < 2.2e-16 ***
## Residuals   1458 145.568   0.100
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
modeloMiscVal <- lm(log(SalePrice) ~ MiscVal,dados)
anova(modeloMiscVal)
```

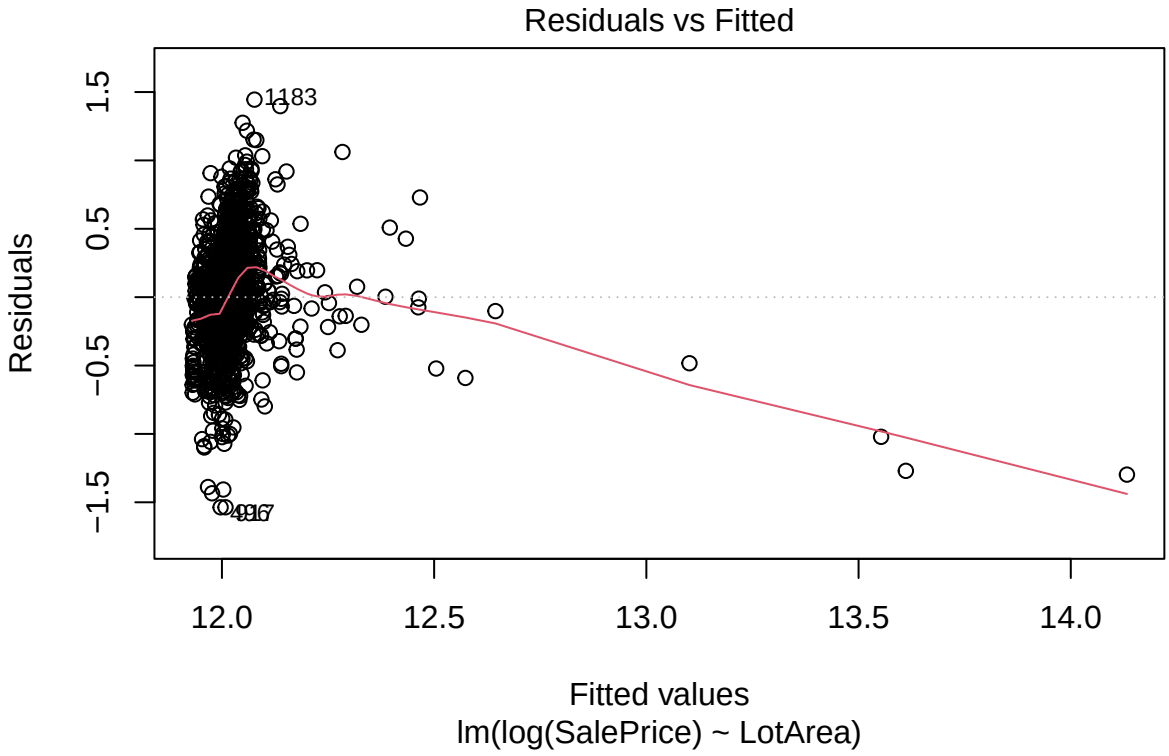
```
## Analysis of Variance Table
```

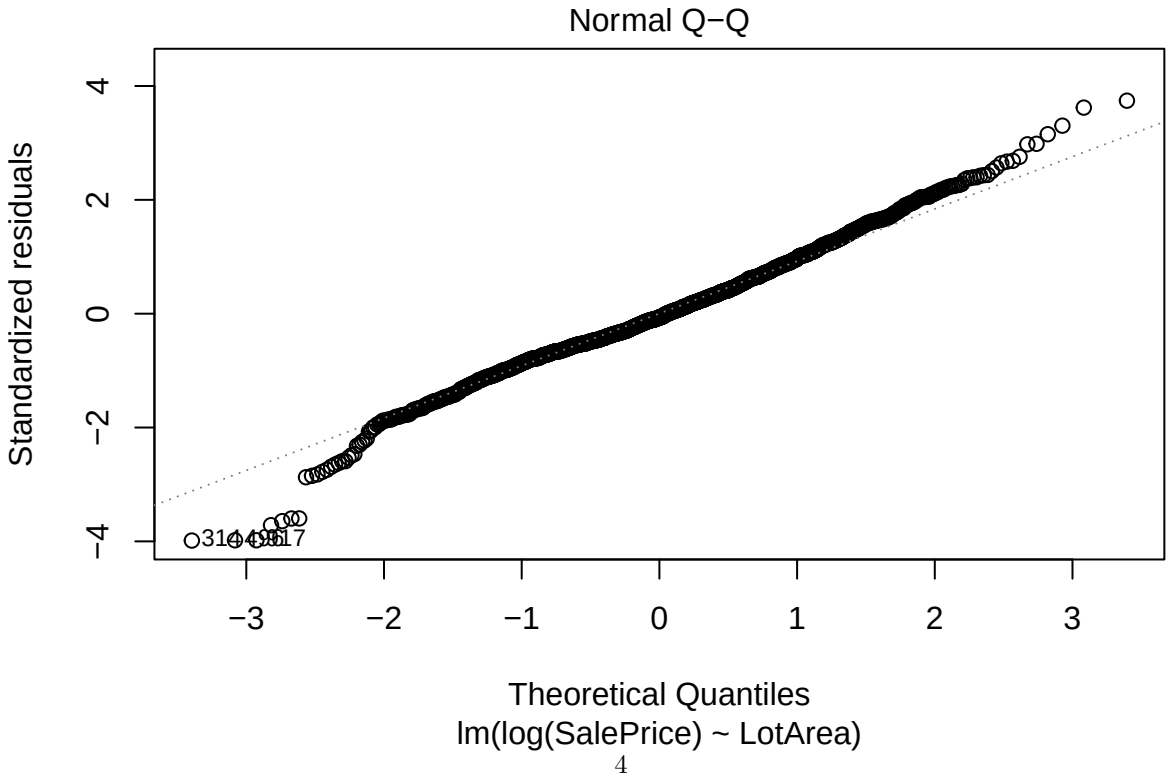
```
##
## Response: log(SalePrice)
##             Df  Sum Sq  Mean Sq F value Pr(>F)
## MiscVal      1   0.093 0.093314  0.5846 0.4446
## Residuals 1458 232.707 0.159607
```

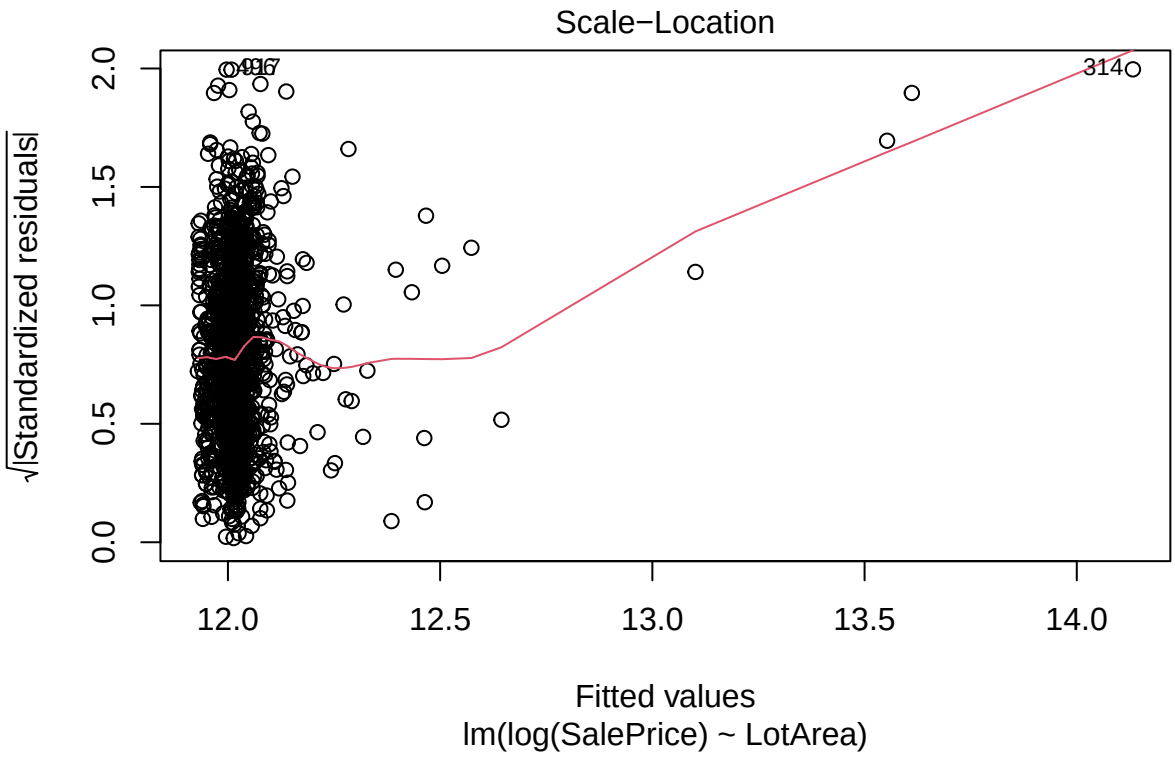
```
modeloMiscFeature <- lm(log(SalePrice) ~ MiscFeature,dados)
anova(modeloMiscFeature)
```

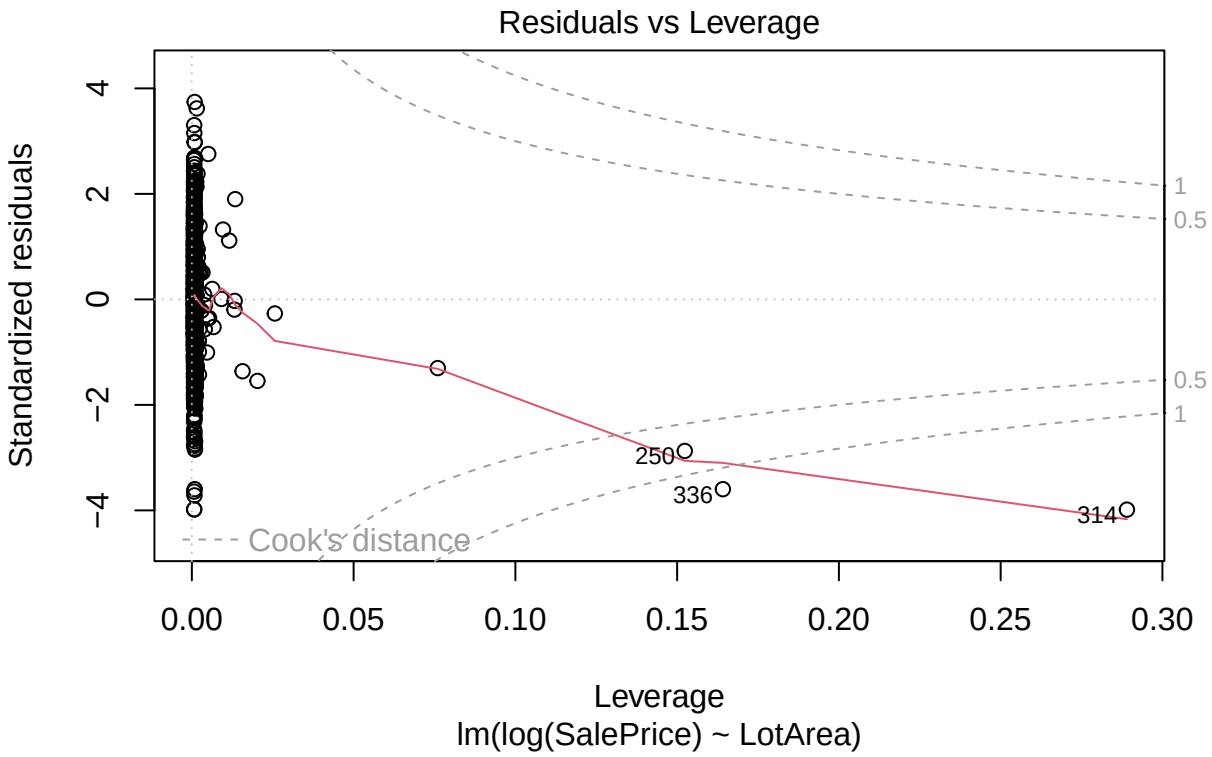
```
## Analysis of Variance Table
##
## Response: log(SalePrice)
##             Df Sum Sq Mean Sq F value  Pr(>F)
## MiscFeature  3 0.8981 0.29937   2.384 0.08031 .
## Residuals   50 6.2788 0.12558
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

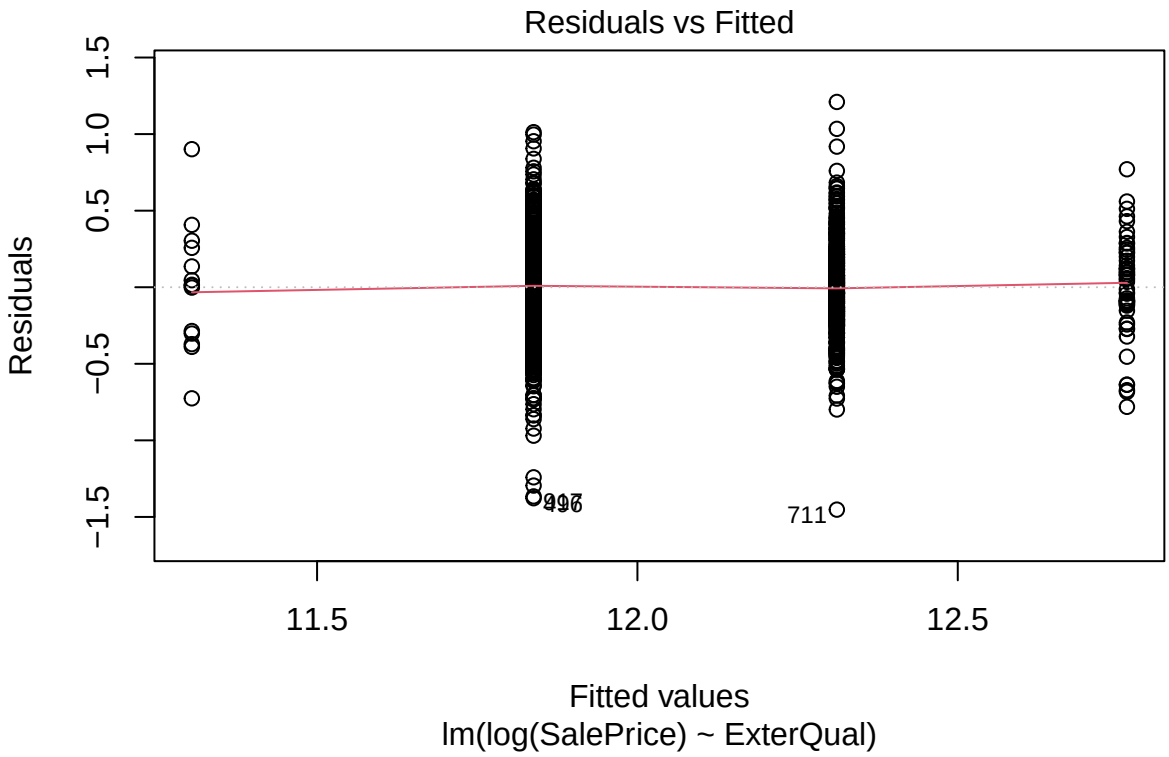
Lm Plots

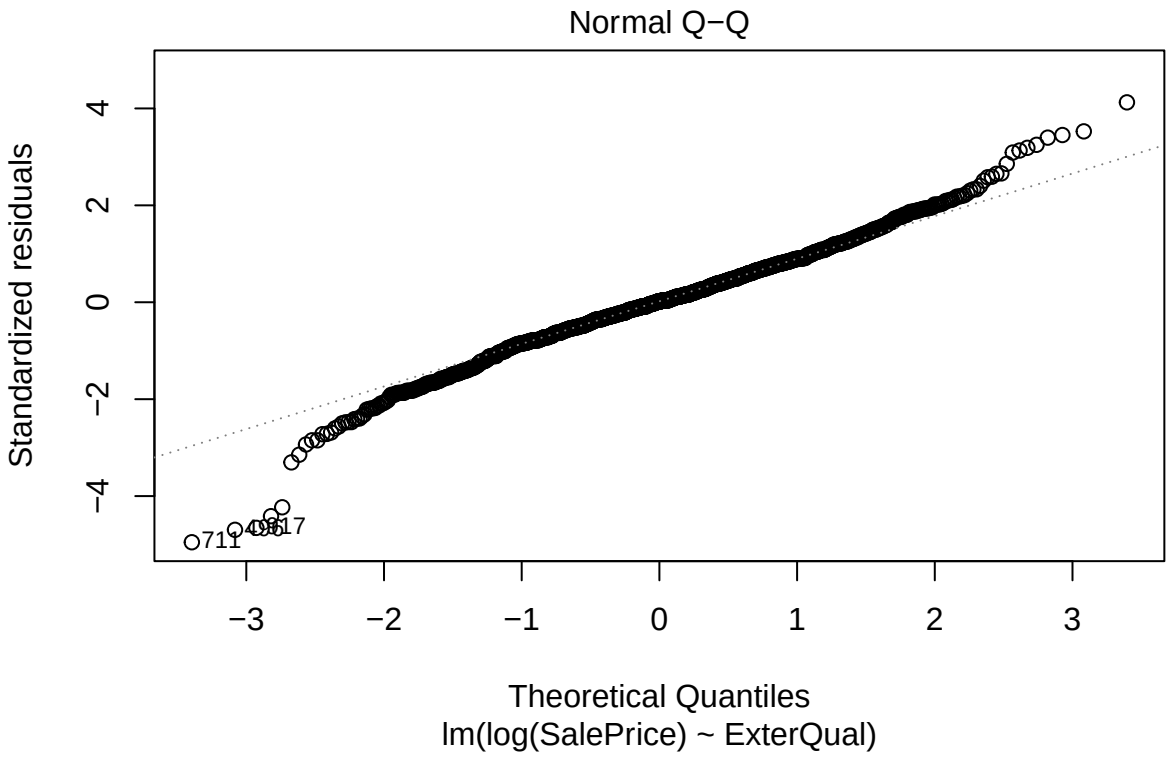

Residuals vs Fitted
Residuals
1.5
0.5
−0.5
−1.5
1183
12.0
12.5
13.0
13.5
14.0
Fitted values
lm(log(SalePrice) ~ LotArea)

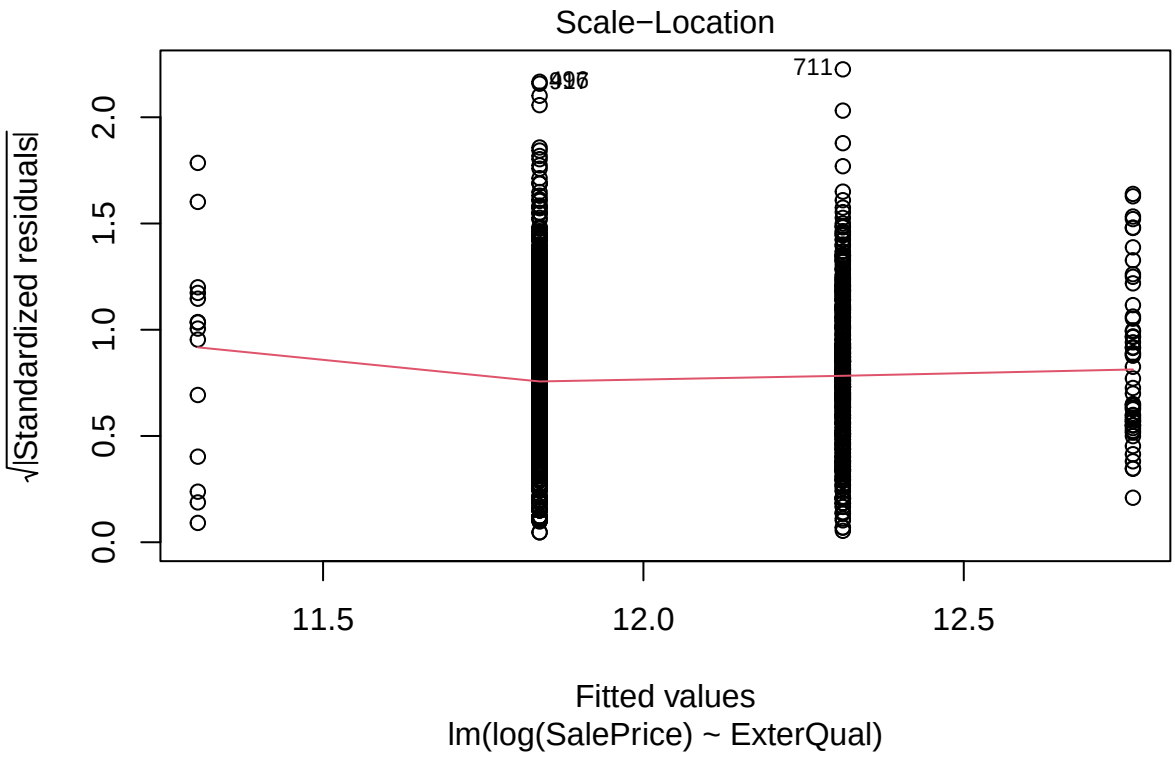

Normal Q−Q
Standardized residuals
4
2
0
−2
−4
−3
−2
−1
0
1
2
3
Theoretical Quantiles
lm(log(SalePrice) ~ LotArea)

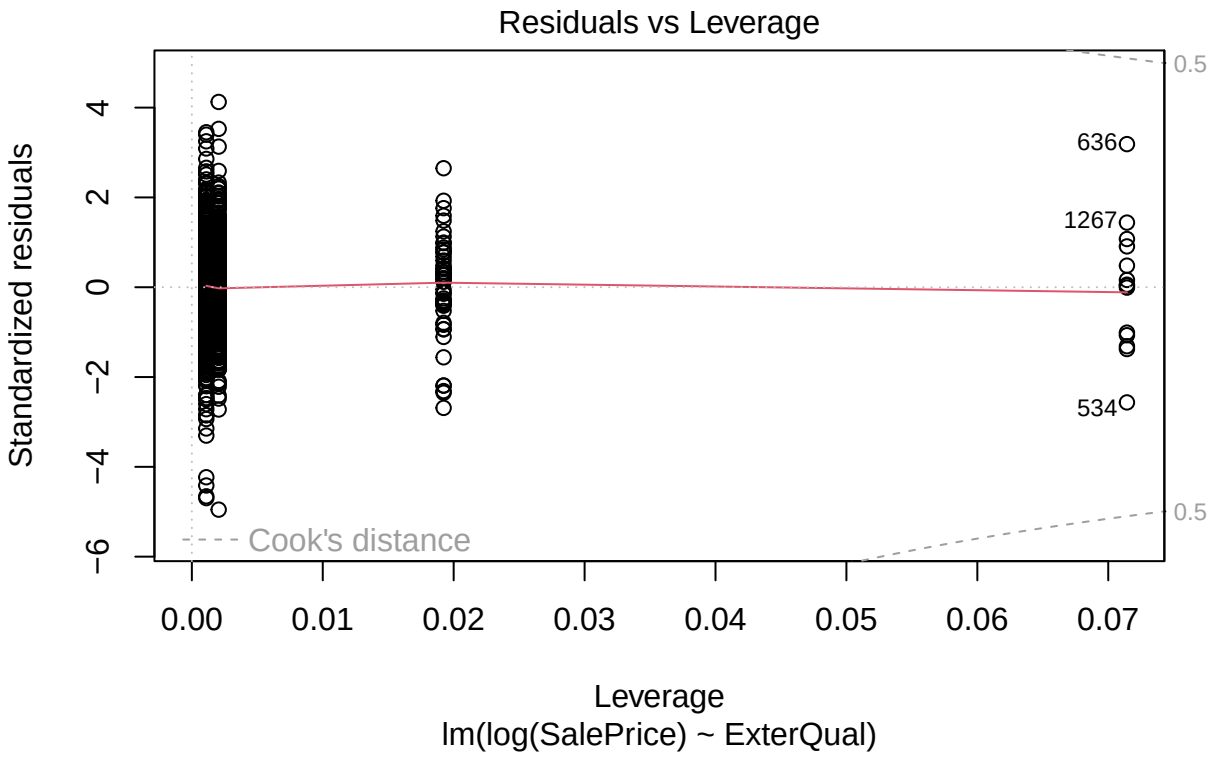

Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
314
12.0
12.5
13.0
13.5
14.0
Fitted values
lm(log(SalePrice) ~ LotArea)

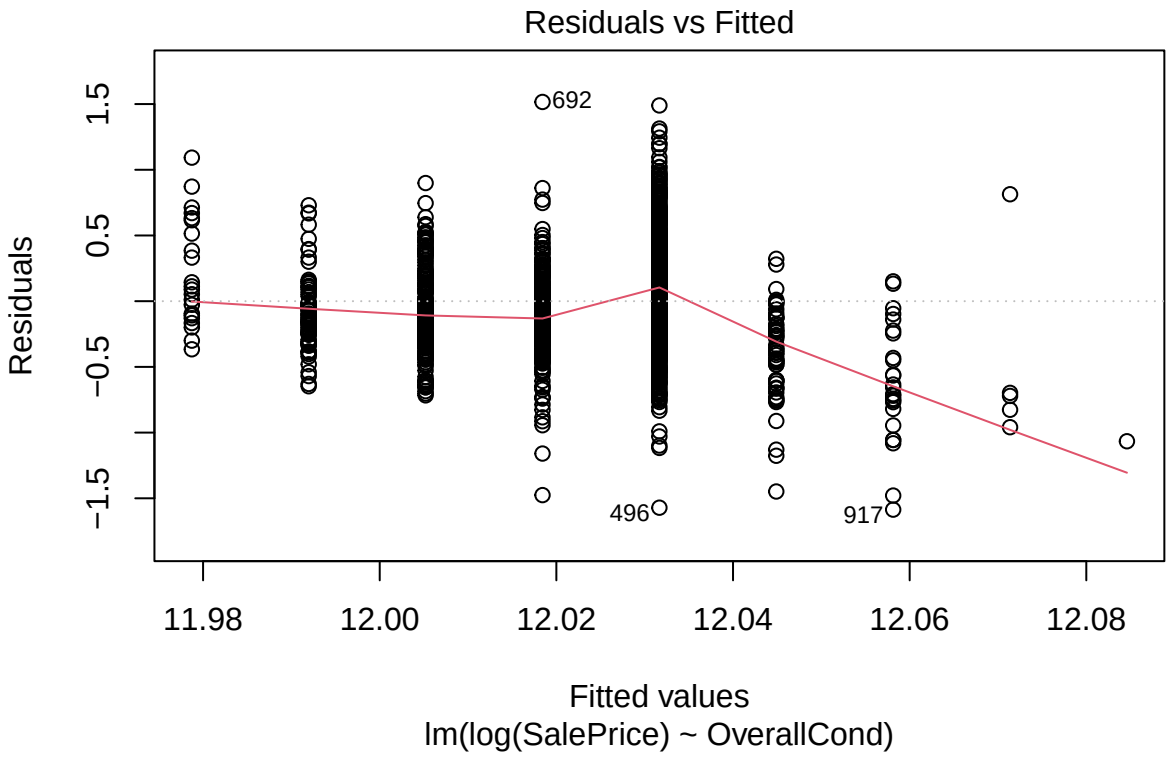

Residuals vs Leverage
Standardized residuals
4
2
0
−2
−4
0.00
0.05
0.10
0.15
0.20
0.25
0.30
Leverage
lm(log(SalePrice) ~ LotArea)
Cook's distance
1
0.5
0.5
1
250
336
314

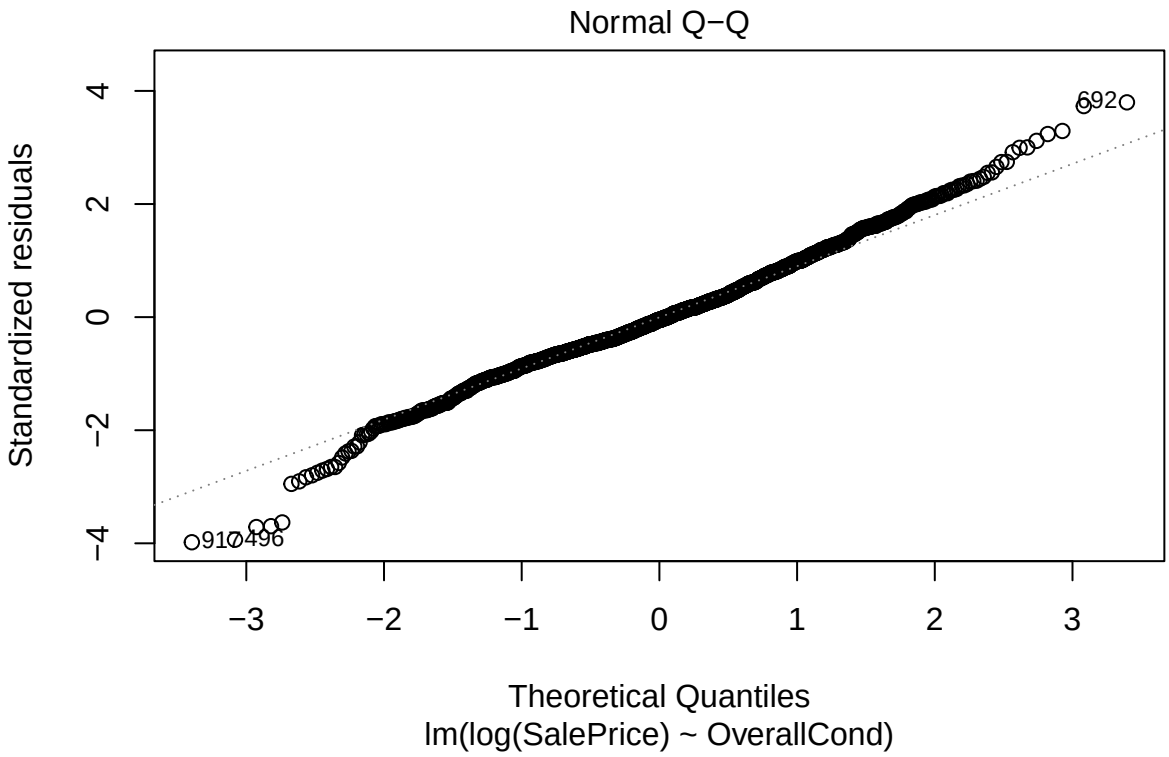

Residuals vs Fitted
Residuals
1.5
1.0
0.5
−0.5
−1.5
11.5
12.0
12.5
711
Fitted values
lm(log(SalePrice) ~ ExterQual)

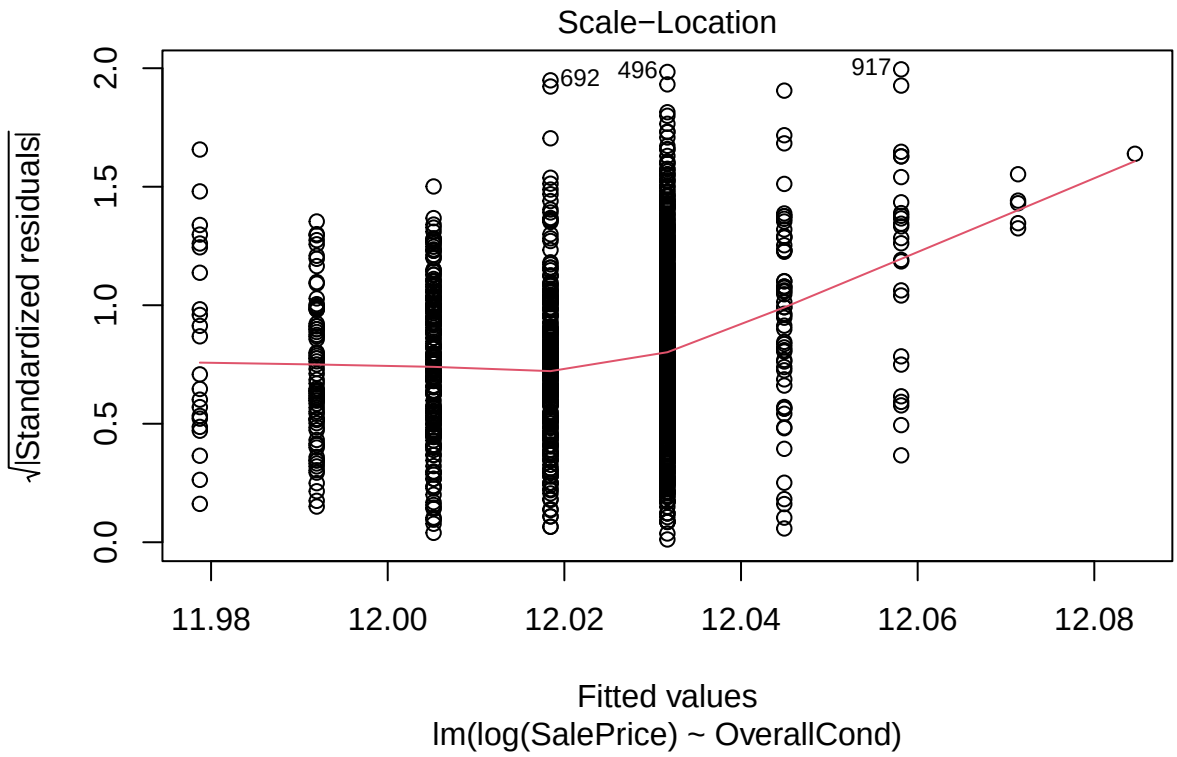

Normal Q−Q
Standardized residuals
4
2
0
−2
−4
−3
−2
−1
0
1
2
3
Theoretical Quantiles
lm(log(SalePrice) ~ ExterQual)

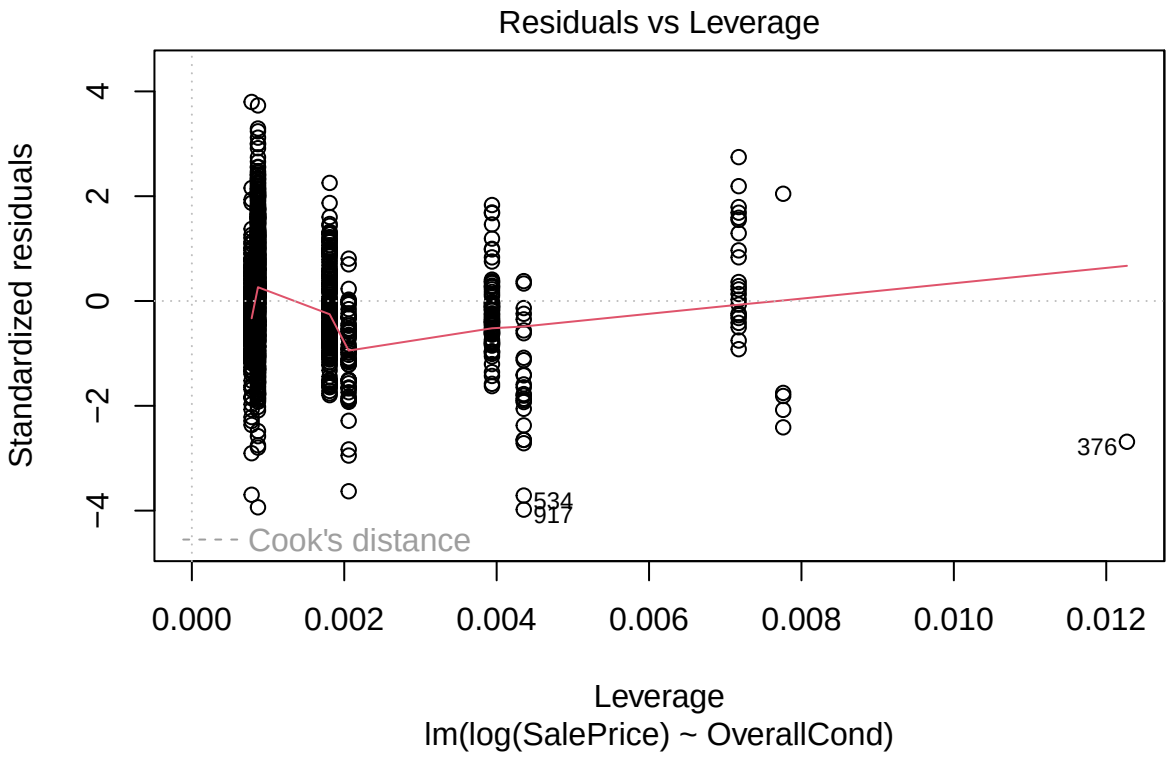

Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
11.5
12.0
12.5
711
Fitted values
lm(log(SalePrice) ~ ExterQual)

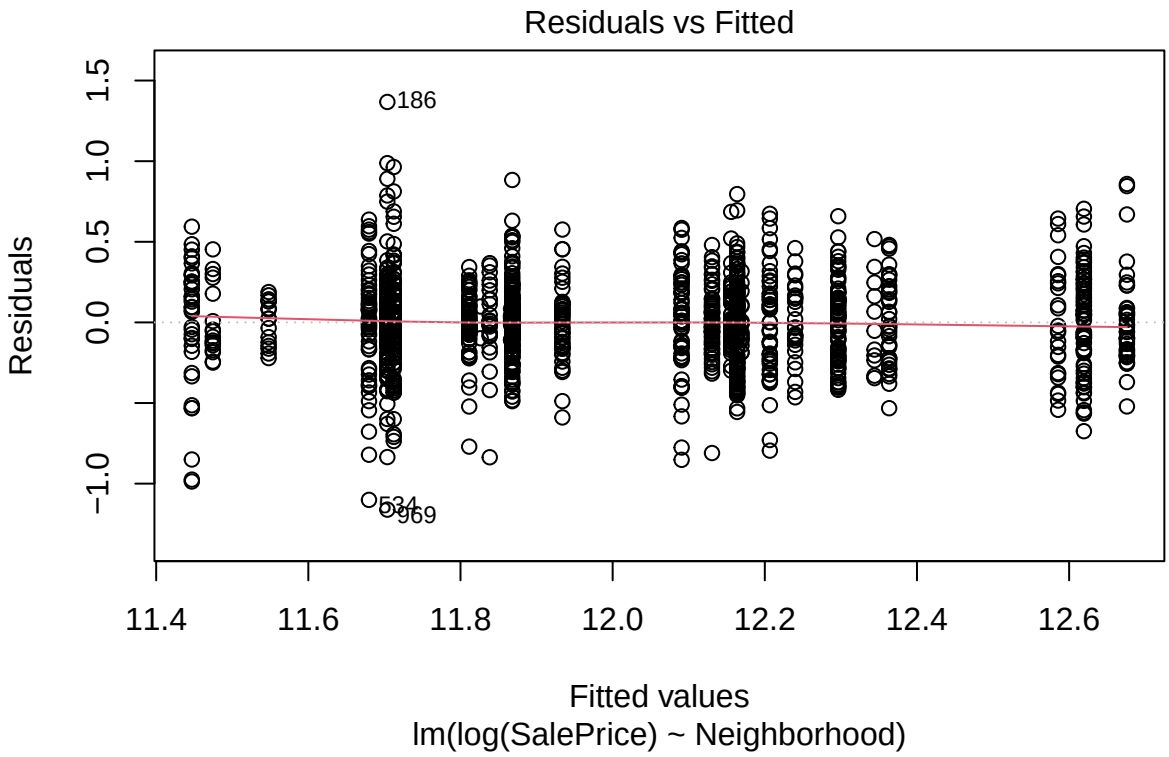

Residuals vs Leverage
Standardized residuals
Leverage
lm(log(SalePrice) ~ ExterQual)
Cook's distance
0.5
0.5
636
1267
534
−6
−4
−2
0
2
4
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07

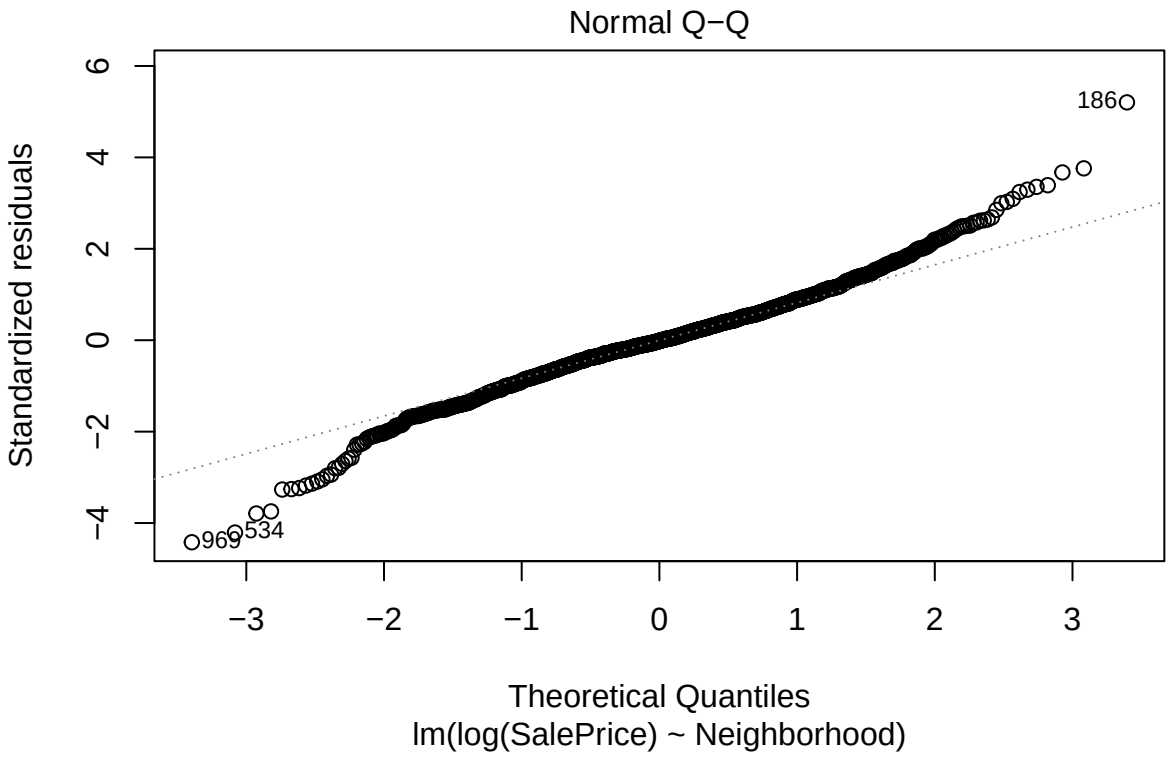

Residuals vs Fitted
Residuals
1.5
0.5
−0.5
−1.5
692
496
917
11.98
12.00
12.02
12.04
12.06
12.08
Fitted values
lm(log(SalePrice) ~ OverallCond)

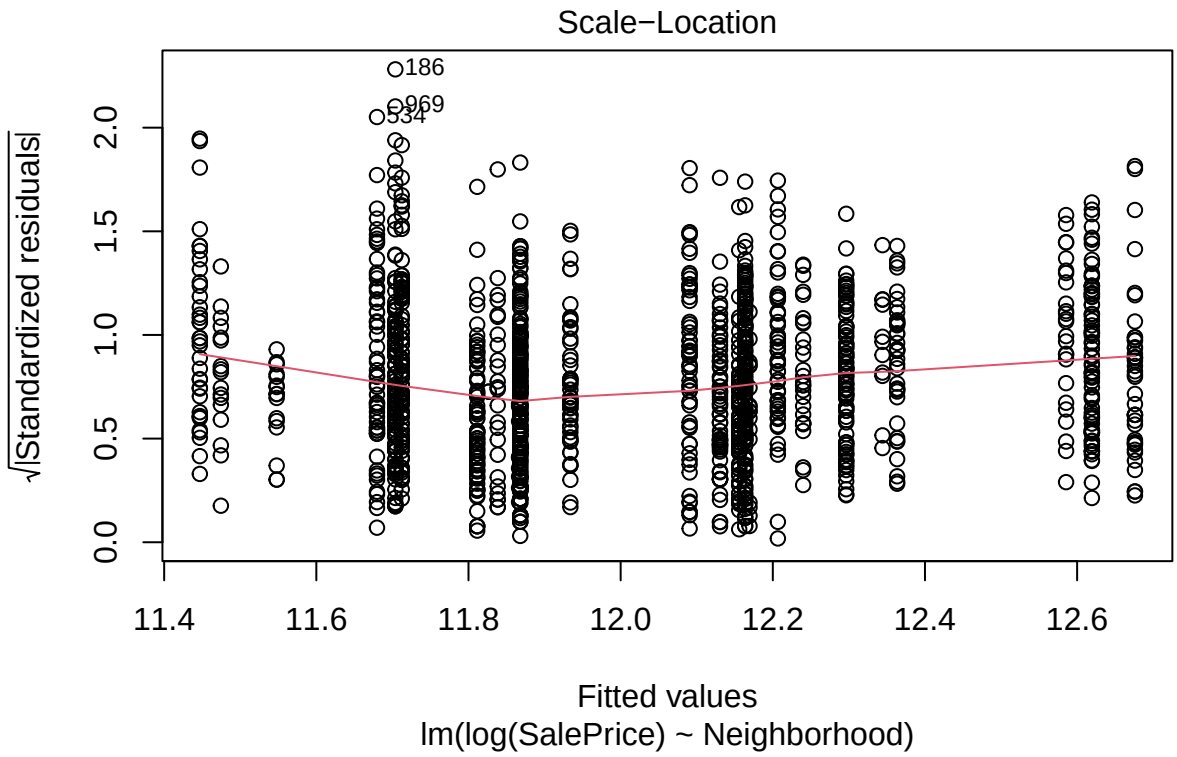

Normal Q−Q
Standardized residuals
Theoretical Quantiles
lm(log(SalePrice) ~ OverallCond)
692
917
496
−4
−2
0
2
4
−3
−2
−1
0
1
2
3

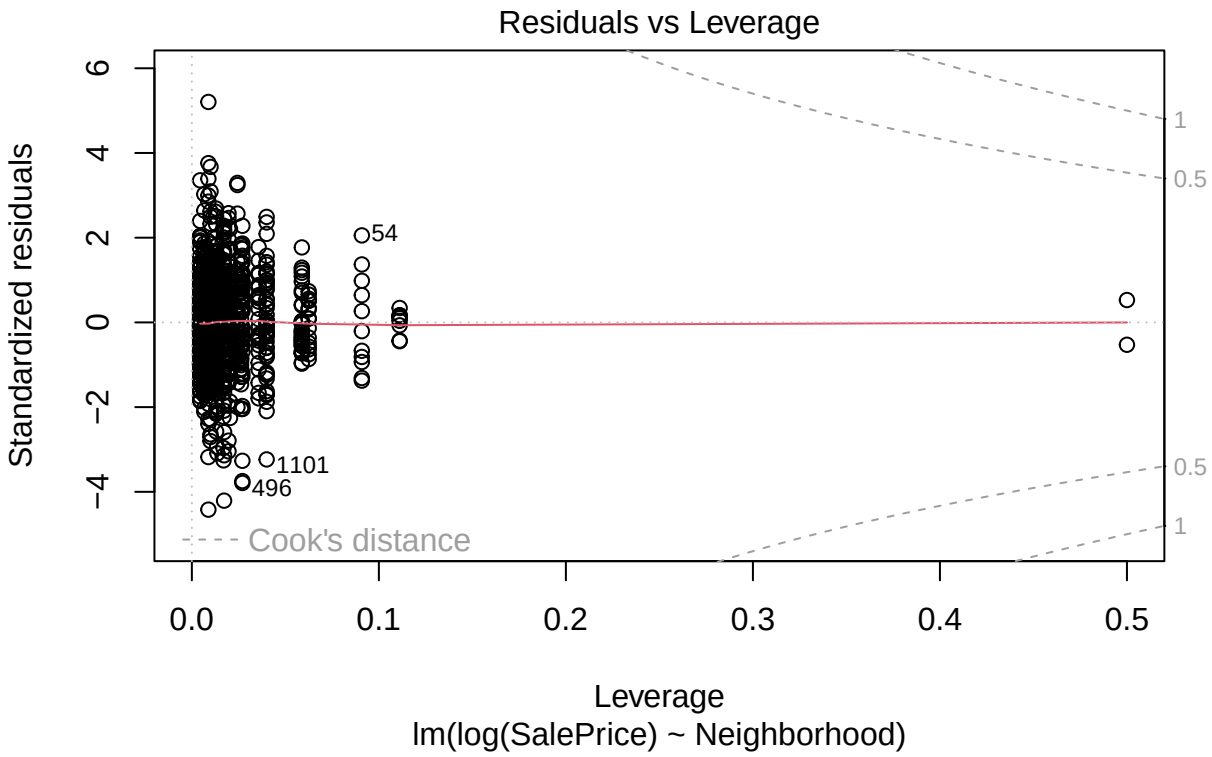

Scale−Location
692
496
917
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
11.98
12.00
12.02
12.04
12.06
12.08
Fitted values
lm(log(SalePrice) ~ OverallCond)

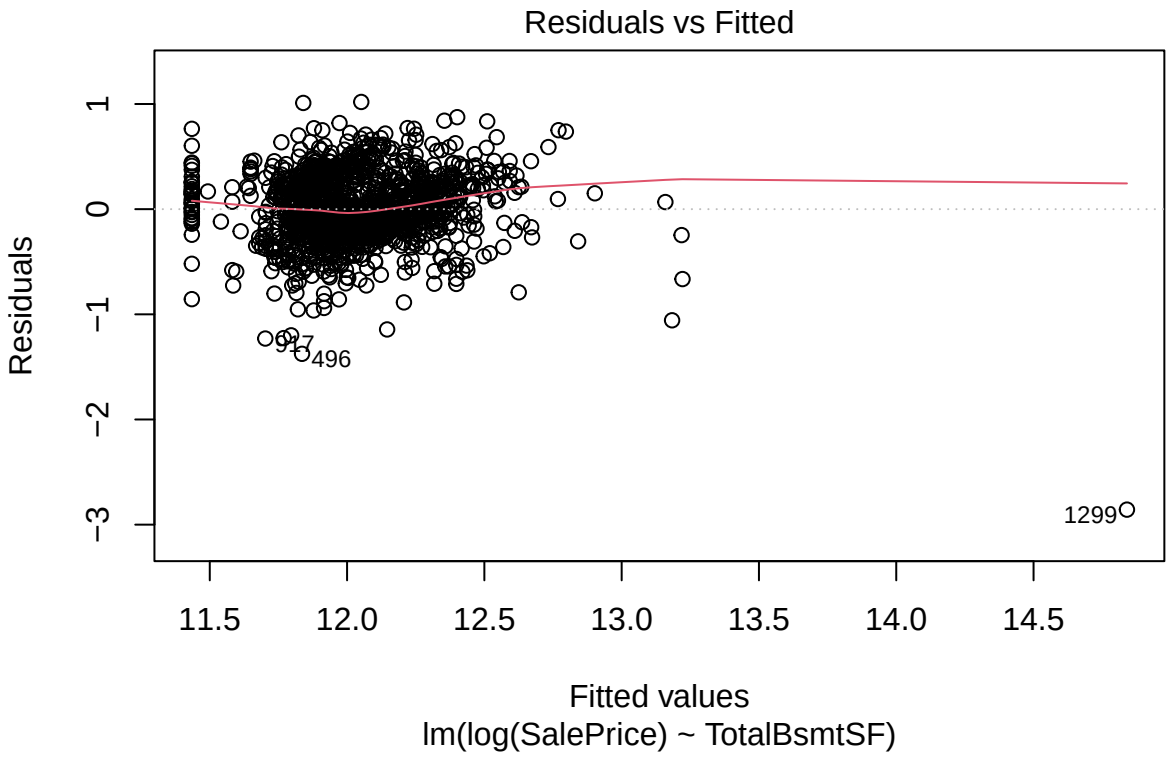

Residuals vs Leverage
Standardized residuals
4
2
0
−2
−4
376
534
917
Cook's distance
0.000
0.002
0.004
0.006
0.008
0.010
0.012
Leverage
lm(log(SalePrice) ~ OverallCond)

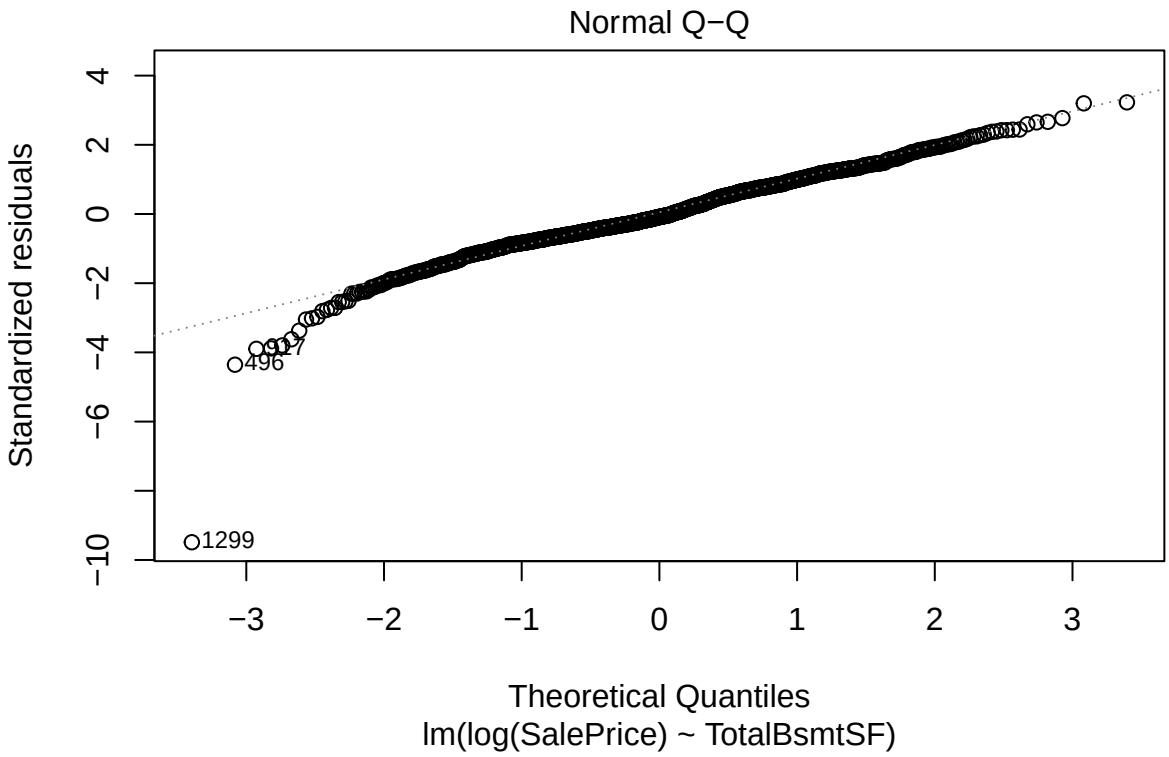

Residuals vs Fitted
Residuals
1.5
1.0
0.5
0.0
−1.0
186
534
969
11.4
11.6
11.8
12.0
12.2
12.4
12.6
Fitted values
lm(log(SalePrice) ~ Neighborhood)

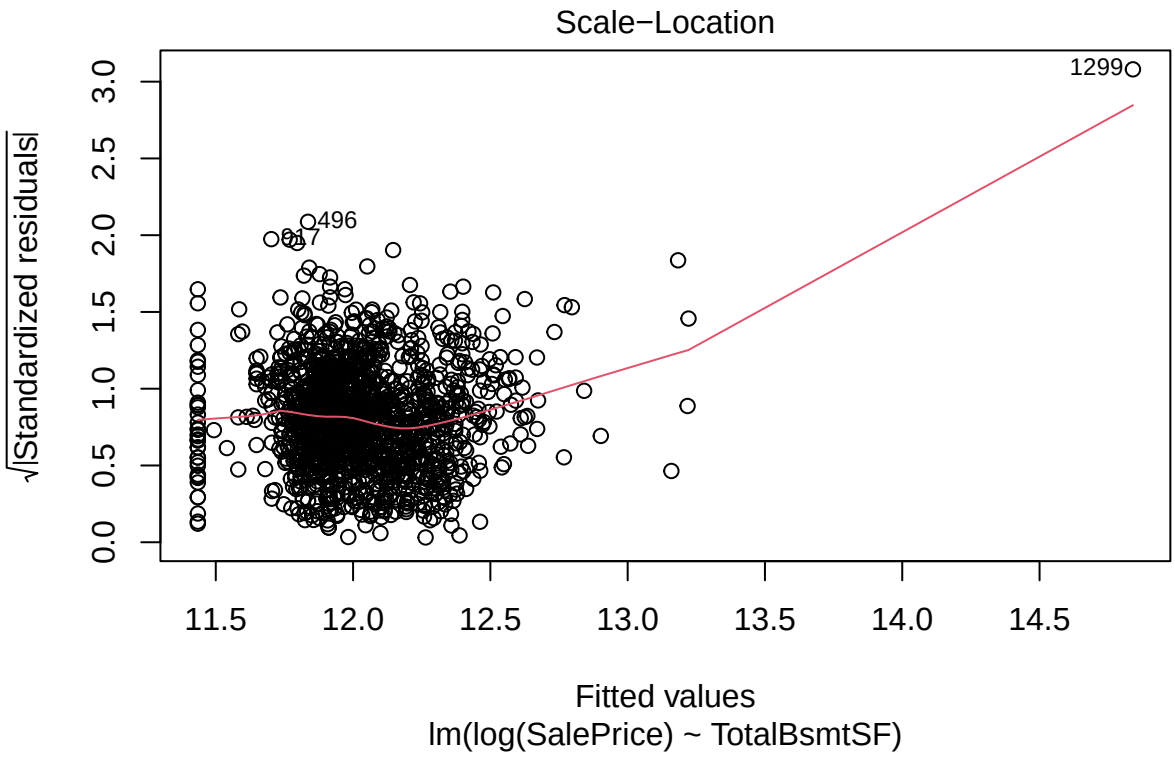

Normal Q−Q
Standardized residuals
6
4
2
0
−2
−4
186
969
534
−3
−2
−1
0
1
2
3
Theoretical Quantiles
lm(log(SalePrice) ~ Neighborhood)

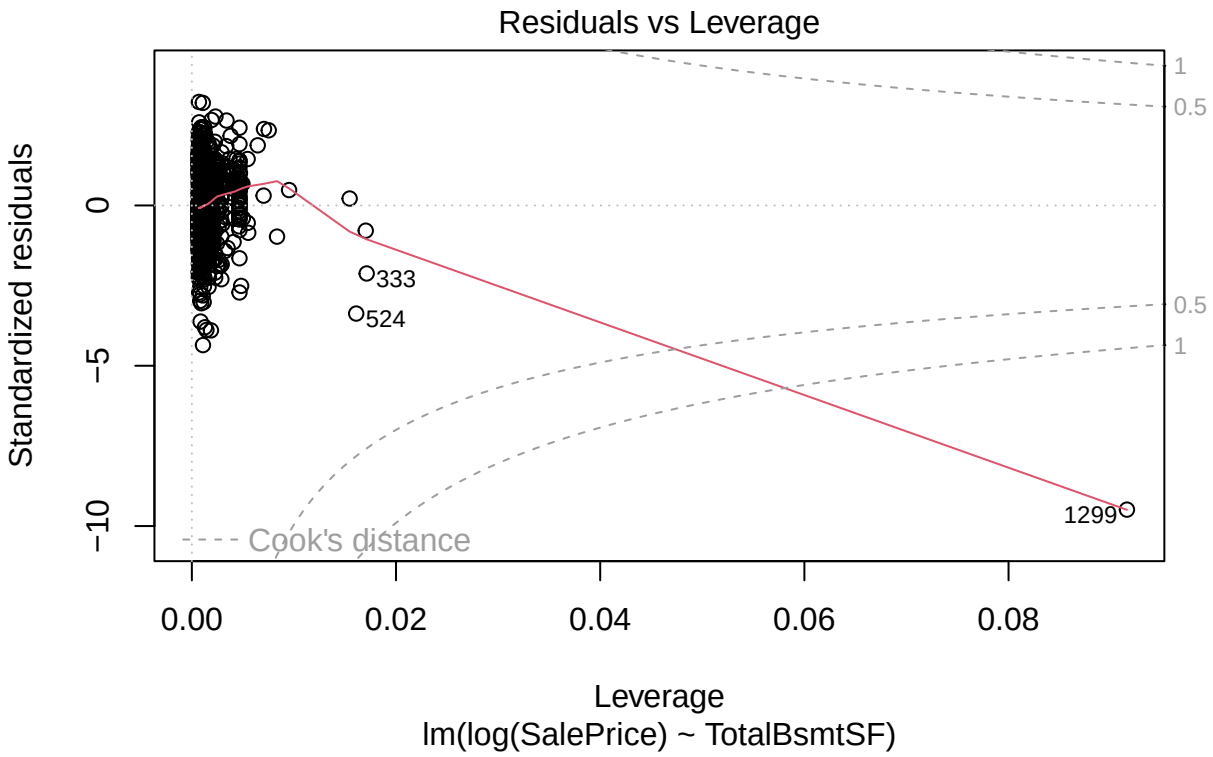

Scale−Location
186
969
534
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
11.4
11.6
11.8
12.0
12.2
12.4
12.6
Fitted values
lm(log(SalePrice) ~ Neighborhood)


Residuals vs Leverage
Standardized residuals
6
4
2
0
−2
−4
54
1101
496
Cook's distance
1
0.5
0.5
1
0.0
0.1
0.2
0.3
0.4
0.5
Leverage
lm(log(SalePrice) ~ Neighborhood)


Residuals vs Fitted
Residuals
1
0
−1
−2
−3
917
496
1299
11.5
12.0
12.5
13.0
13.5
14.0
14.5
Fitted values
lm(log(SalePrice) ~ TotalBsmtSF)


Normal Q−Q
Standardized residuals
4
2
0
−2
−4
−6
−10
496
1299
−3
−2
−1
0
1
2
3
Theoretical Quantiles
lm(log(SalePrice) ~ TotalBsmtSF)


Scale−Location
√|Standardized residuals|
0.0
0.5
1.0
1.5
2.0
2.5
3.0
1299
496
11.5
12.0
12.5
13.0
13.5
14.0
14.5
Fitted values
lm(log(SalePrice) ~ TotalBsmtSF)



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.