Multiple Comparison Procedures To A Control

For AN(C)OVA Models

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Contents

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Basic Information

Automatic statistics for the file:

File
recovery.csv

Your selection for the encoding: UTF-8
Your selection for the decimal character: .
Observations (rows with at least one non-missing value): 41
Variables (columns with at least one non-missing value): 2
Variables considered continuous: 1

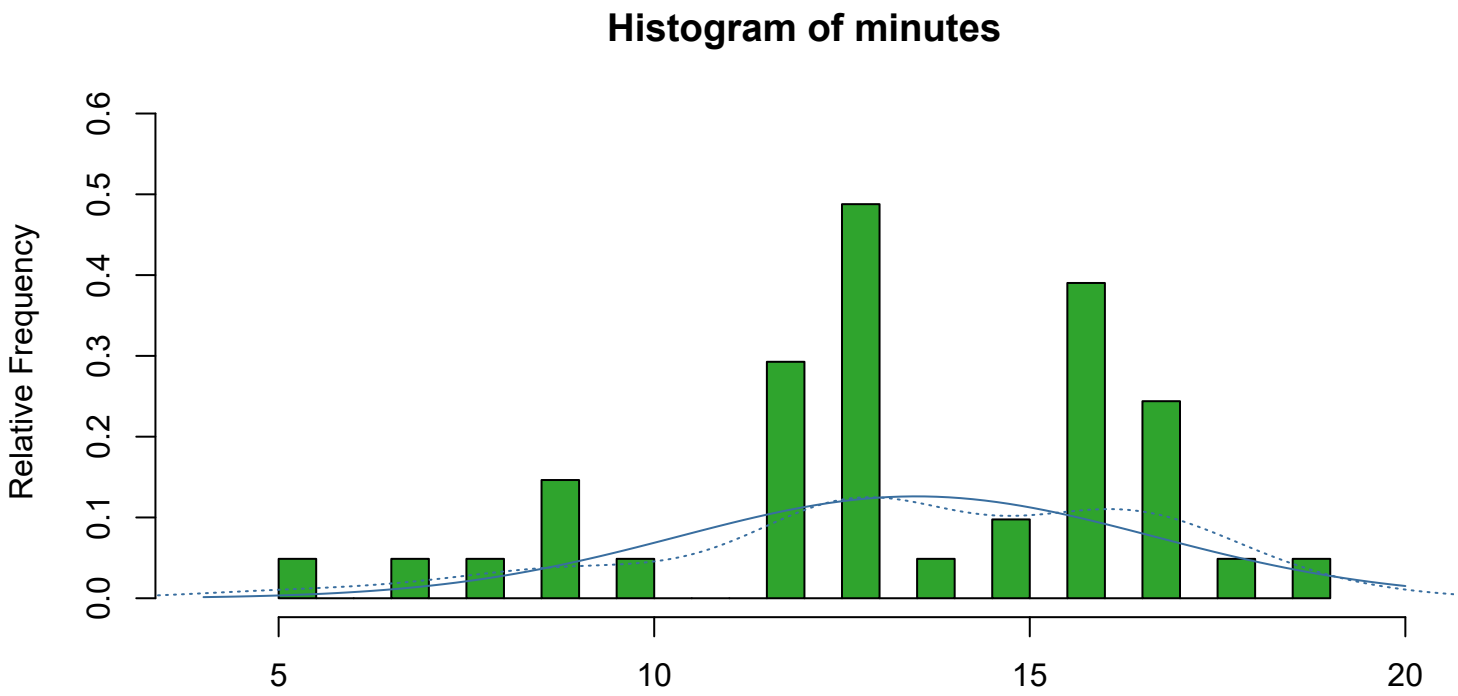
Variables considered continuous

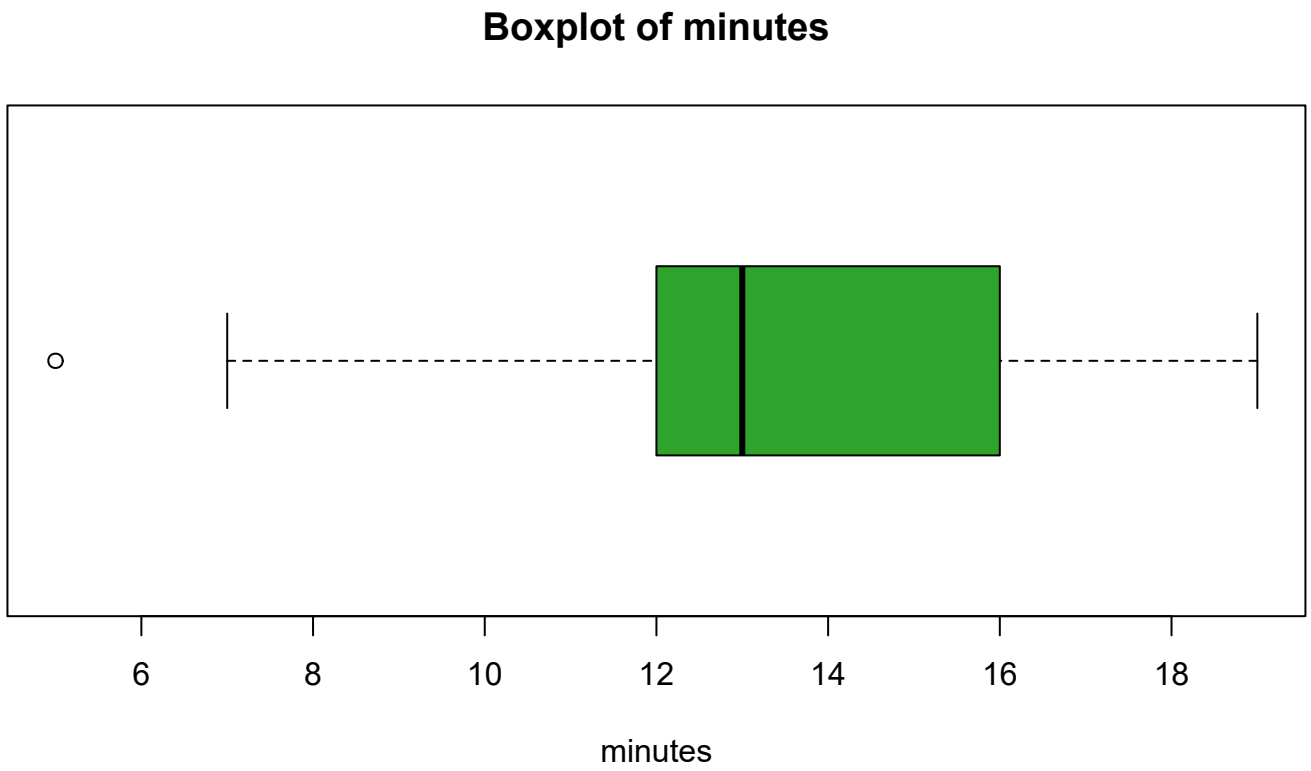
Variables considered categorical: 1

Variables considered categorical
blanket

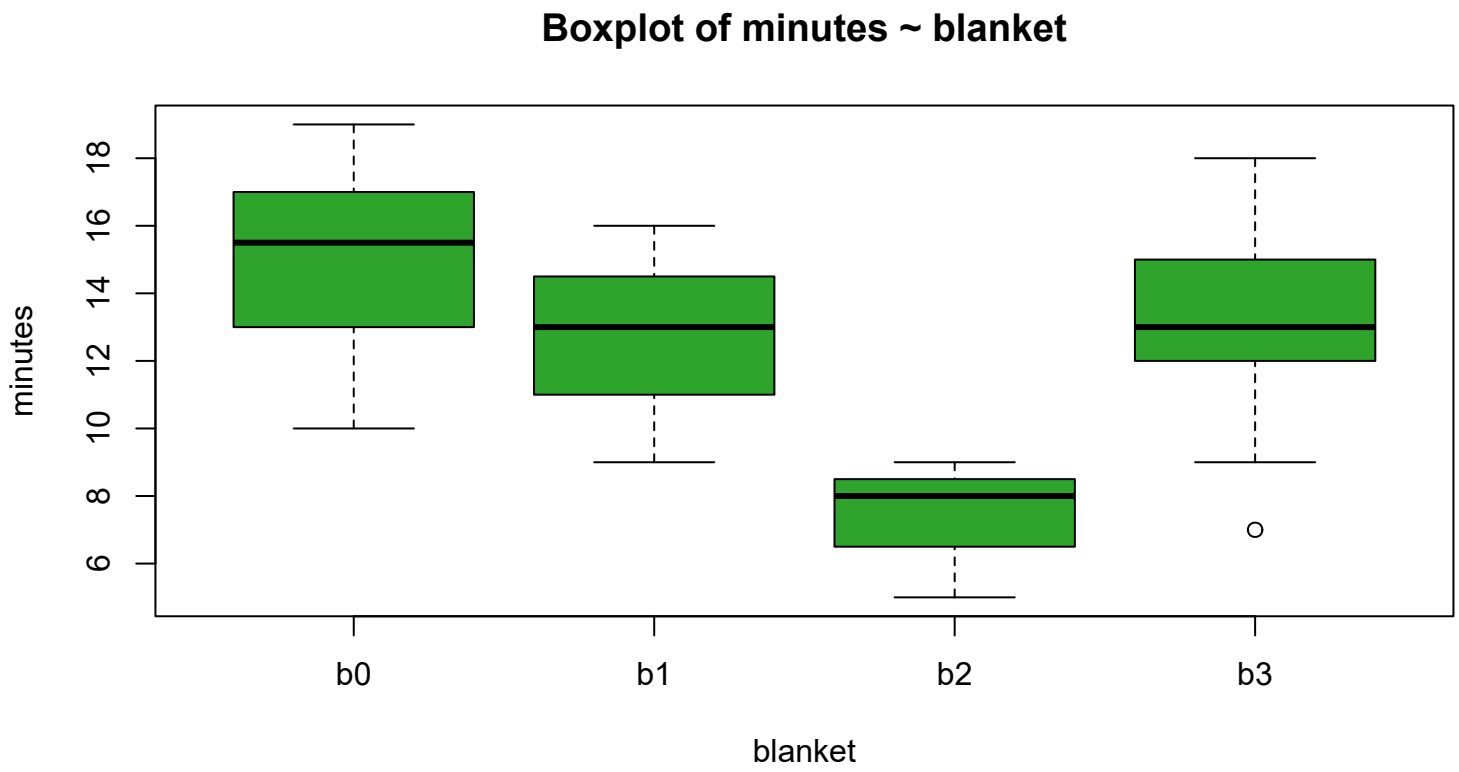
Descriptive Plots

Histogram and Boxplot for dependent Variable



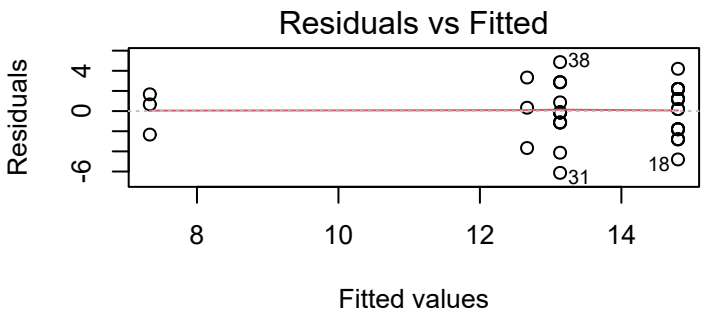

Boxplot of minutes
6
8
10
12
14
16
18
minutes

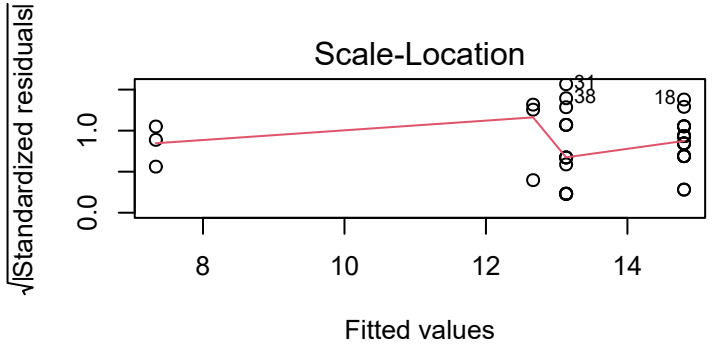
Boxplot for categorical independent Variables

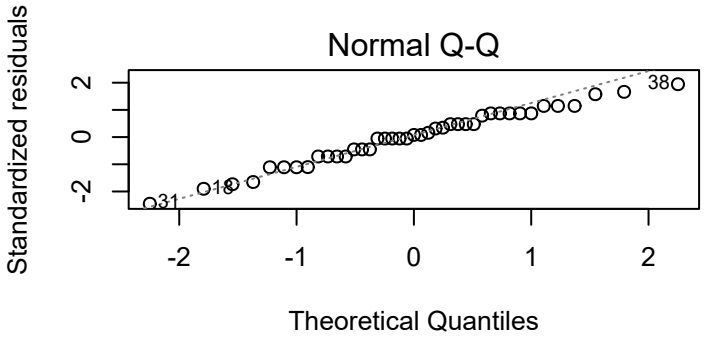


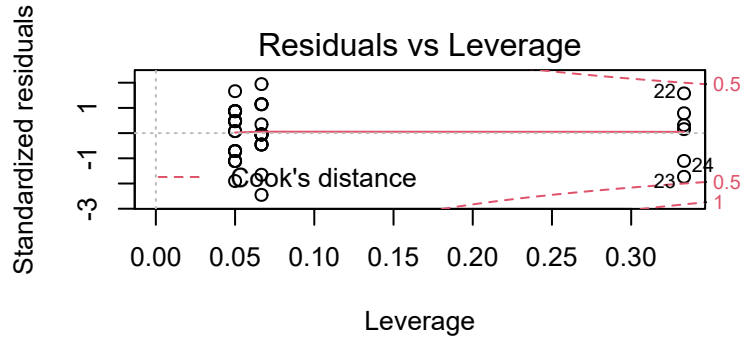
```
Anova Table (Type III tests)

Response: minutes
            Sum Sq Df  F value    Pr(>F)
(Intercept) 4380.8  1 652.8851 < 2.2e-16 ***
blanket      152.0  3   7.5499 0.0004619 ***
Residuals    248.3 37
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```










```
Simultaneous Tests for General Linear Hypotheses
```

```
Multiple Comparisons of Means: Dunnett Contrasts


Fit: lm(formula = modelfunction, data = df_factorized)

Linear Hypotheses:
             Estimate Std. Error t value Pr(<t)
b1 - b0 >= 0  -2.1333     1.6038  -1.330 0.2412
b2 - b0 >= 0  -7.4667     1.6038  -4.656 <0.001 ***
b3 - b0 >= 0  -1.6667     0.8848  -1.884 0.0925 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)
```

Simultaneous Confidence Intervals

```
Multiple Comparisons of Means: Dunnett Contrasts


Fit: lm(formula = modelfunction, data = df_factorized)

Quantile = 2.1829
95% family-wise confidence level


Linear Hypotheses:
             Estimate lwr     upr
b1 - b0 >= 0 -2.1333     -Inf  1.3676
b2 - b0 >= 0 -7.4667     -Inf -3.9657
b3 - b0 >= 0 -1.6667     -Inf  0.2647
```

Simultaneous Tests for General Linear Hypotheses

```
Multiple Comparisons of Means: Dunnett Contrasts


Fit: lm(formula = modelfunction, data = df_factorized)

Linear Hypotheses:
             Estimate Std. Error t value   Pr(<t)
b1 - b0 >= 0  -2.1333     1.6038  -1.330   0.0958 .
b2 - b0 >= 0  -7.4667     1.6038  -4.656 6.13e-05 ***
b3 - b0 >= 0  -1.6667     0.8848  -1.884   0.0640 .
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- free method)
```

```
     Simultaneous Tests for General Linear Hypotheses

Multiple Comparisons of Means: Dunnett Contrasts


Fit: lm(formula = modelfunction, data = df_factorized)

Linear Hypotheses:
             Estimate Std. Error t value Pr(<t)
b1 - b0 >= 0  -2.1333     1.7346  -1.230 0.2794
b2 - b0 >= 0  -7.4667     1.1095  -6.730 <0.001 ***
b3 - b0 >= 0  -1.6667     0.8642  -1.929 0.0846 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)
```

```
     Simultaneous Confidence Intervals

Multiple Comparisons of Means: Dunnett Contrasts


Fit: lm(formula = modelfunction, data = df_factorized)

Quantile = 2.1826
95% family-wise confidence level


Linear Hypotheses:
             Estimate lwr     upr
b1 - b0 >= 0 -2.1333     -Inf  1.6525
b2 - b0 >= 0 -7.4667     -Inf -5.0451
b3 - b0 >= 0 -1.6667     -Inf  0.2195
```

```
     Simultaneous Tests for General Linear Hypotheses

Multiple Comparisons of Means: Dunnett Contrasts


Fit: lm(formula = modelfunction, data = df_factorized)
```

```
Linear Hypotheses:
             Estimate Std. Error t value   Pr(<t)
b1 - b0 >= 0  -2.1333     1.7346  -1.230    0.113
b2 - b0 >= 0  -7.4667     1.1095  -6.730 4.53e-08 ***
b3 - b0 >= 0  -1.6667     0.8642  -1.929    0.059 .
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- free method)
```

References

Fox, John, and Sanford Weisberg. 2019. *An R Companion to Applied Regression*. Third. Thousand Oaks CA: Sage. https://socialsciences.mcmaster.ca/jfox/Books/Companion/.

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