

Car Horsepower and Gas Mileage II

1. The cars appear to be independent as no car make was used twice and they were all of different makes and models.
2. No non-linearity was detected as the residual plot does not exhibit a distinct curvature (Figure 1-Left).
3. The residual plot does show a very slight heteroscedasticity (Figure 1-Left). This is likely not enough to worry about.
4. The Anderson-Darling test shows weak but insignificant evidence for non-normality ($p = 0.0784$) and the histogram of residuals is approximately symmetric (Figure 1-Right).
5. There are no significant outliers according to the outlier test ($p = 0.4334$). There is also no evidence for any outliers on the histogram of residuals (Figure 1-Right).

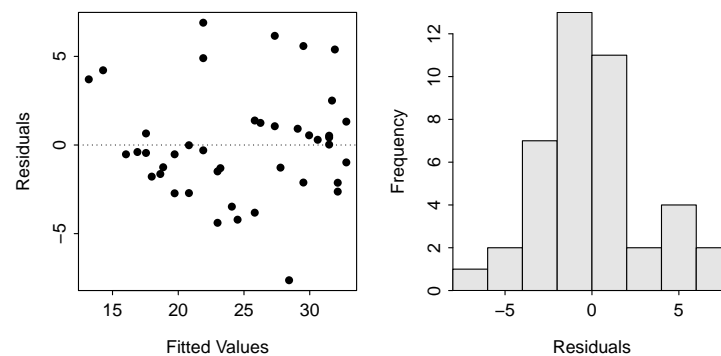


Figure 1. Residual plot (Left) and histogram of residuals (Right) for the simple linear regression of car mpg on car horsepower.

R Appendix

```
library(NCStats)
setwd("c:/biometry/")
car <- read.csv("CarMPG.csv")
lm1 <- lm(mpg~hp,data=car)
residPlot(lm1)
fitPlot(lm1)
```