

Panel Data

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```
library(car)

## Loading required package: carData
library(ggplot2)
library(sqldf)

## Loading required package: gsubfn
## Loading required package: proto
## Loading required package: RSQLite
library(plm)

## Loading required package: Formula
library(prediction)
library(Metrics)
```

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

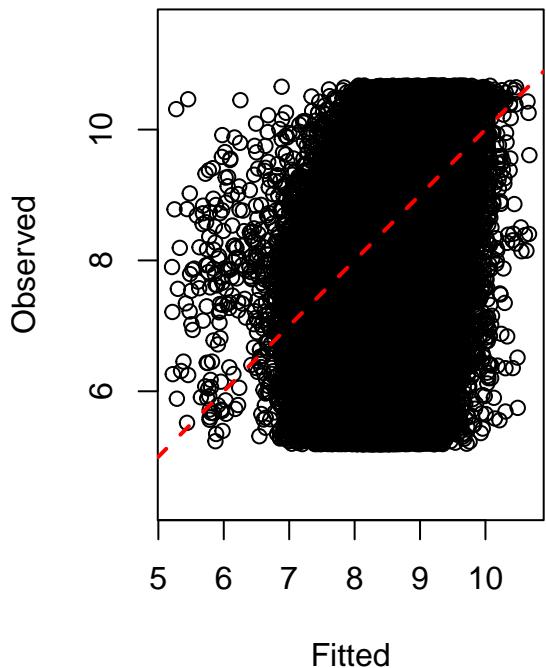
```
usrSessData <- read.csv(file="usersessions-with-char-sec-train.csv", header=TRUE, row.names = NULL, sep=",")

SessData<- na.omit(usrSessData)

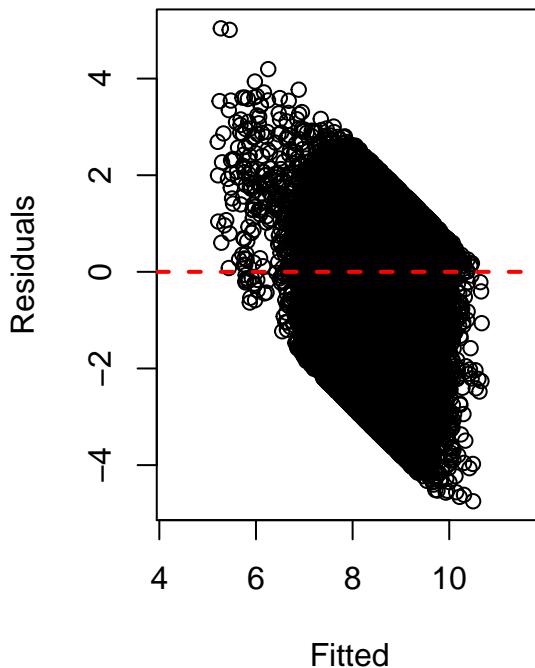
par(mfrow=c(1,2))
# Fitted-vs-observed plot
plot(log(SessData$session_length_mvavg), log(SessData$session_length), asp = 1, xlab = "Fitted", ylab = "Observed")
abline(0, 1, col = 'red', lty = 'dashed', lwd = 2)

# Fitted-vs-Residuals plot
plot(log(SessData$session_length_mvavg),log(SessData$session_length)-log(SessData$session_length_mvavg)
abline(0, 0, col = 'red', lty = 'dashed', lwd = 2)
```

Fitted–vs–Observed



Fitted vs Residuals



```
## Mean absolute error
mae_baseline <- mae(log(SessData$session_length_mvavg), log(SessData$session_length))
rmse_baseline <- rmse(log(SessData$session_length_mvavg), log(SessData$session_length))

cat('MAE - ', mae_baseline, ', RMSE ', rmse_baseline)

## MAE -  0.9277591 , RMSE  1.200481
```