# Experiment2.1

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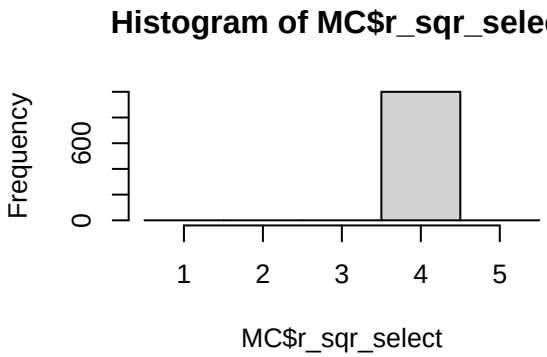
Here we shift. mod1=parsim, mod2 = underfit, mod3=false, mod4 = overfit.

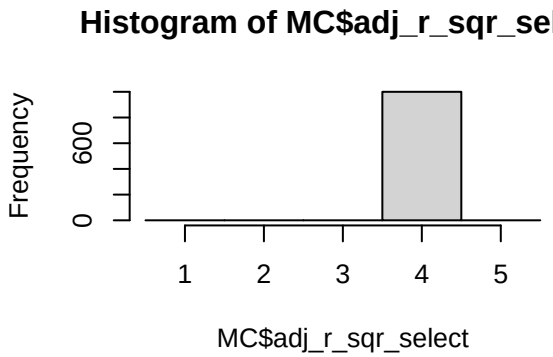
```
# load libraries
library(tidyverse)
library(future.apply) #parallel processing
library(tictoc) #timing code
library(knitr) #tables

#load functions
source("ProjectFunctions.R")

# set up parallel processing
plan(multisession)

# set seed for reproducibility
set.seed(42)

# load data
data <- read.csv("data_generic.csv")
```

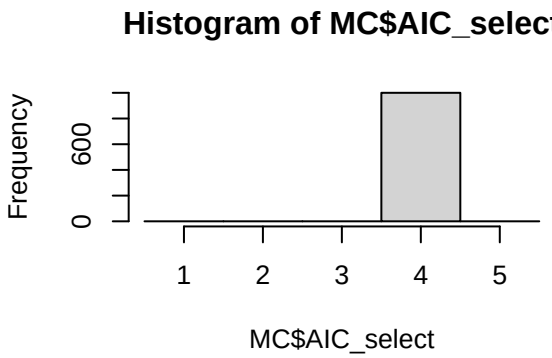
```
# fit base model
mod1 <- lm(y~x1+ x2 + x3 +x4 +x5 +x6 +x7 +x8 +x9, data = data)
coefs1 <- unname(mod1$coefficients)
```

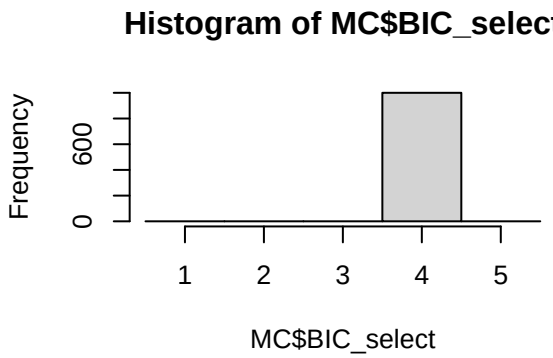
```
# simulation
MC2.1 <- as.data.frame(t(future_replicate(1000,
                                          experiment2(sd = 10000, data = data),
                                          future.seed = TRUE)))
```

```
#results
histo(MC2.1,title =  "MC2.1")
```




MC2.1

```
kable(props(MC2.1))
```

| models | r_sqr_prop | adj_r_sqr_prop | AIC_prop | BIC_prop |
|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 |
| 4 | 1 | 1 | 1 | 1 |
| 5 | 0 | 0 | 0 | 0 |