

Process Capability Analysis

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Process Capability Analysis

```
setwd("/Users/ewenwang/Dropbox/Data Science/DMAIC/Case Study/3-Analyze")

require(dplyr)

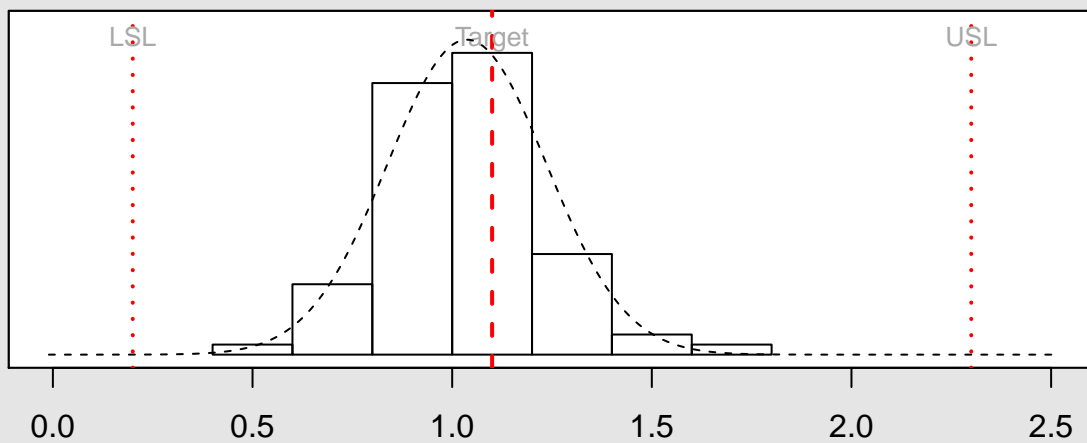
df = data.frame(read.csv("data.csv", header = T)[-c(1:4),-1])
df <- tbl_df(df)

lsl = 0.2
usl = 2.3
target = 1.10

require(qcc) # Quality Control Charts

ir5d <- qcc.groups(df$Increase.Rate.5Day, rep(1, length(df$Increase.Rate.5Day)))
object = qcc(ir5d, type = "xbar", plot = F)
process.capability(object, spec.limits = c(lsl, usl), target = target)
```

Process Capability Analysis for ir5d



Number of obs = 78
Center = 1.036975
StdDev = 0.1987282

Target = 1.1
LSL = 0.2
USL = 2.3

Cp = 1.76
Cp_l = 1.4
Cp_u = 2.12
Cp_k = 1.4
Cpm = 1.68

Exp<LSL 0%
Exp>USL 0%
Obs<LSL 0%
Obs>USL 0%

```
##
## Process Capability Analysis
##
## Call:
## process.capability(object = object, spec.limits = c(lsl, usl),      target = target)
##
## Number of obs = 78          Target = 1.1
##      Center = 1.037          LSL = 0.2
##      StdDev = 0.1987          USL = 2.3
##
## Capability indices:
##
##      Value   2.5%  97.5%
## Cp      1.761  1.483  2.039
## Cp_l    1.404  1.208  1.600
## Cp_u    2.119  1.831  2.406
## Cp_k    1.404  1.170  1.638
## Cpm     1.679  1.404  1.953
##
## Exp<LSL 0%      Obs<LSL 0%
## Exp>USL 0%      Obs>USL 0%
```

```
citation("qcc")
```

```
##
## To cite qcc in publications use:
##
##   Scrucca, L. (2004). qcc: an R package for quality control
##   charting and statistical process control. R News 4/1, 11-17.
##
## A BibTeX entry for LaTeX users is
##
##   @Article{,
##     title = {qcc: an R package for quality control charting and statistical process control},
##     author = {Luca Scrucca},
##     journal = {R News},
##     year = {2004},
##     pages = {11--17},
##     volume = {4/1},
##     url = {http://CRAN.R-project.org/doc/Rnews/},
##   }
```