Process Capability Analysis

Enqun Wang

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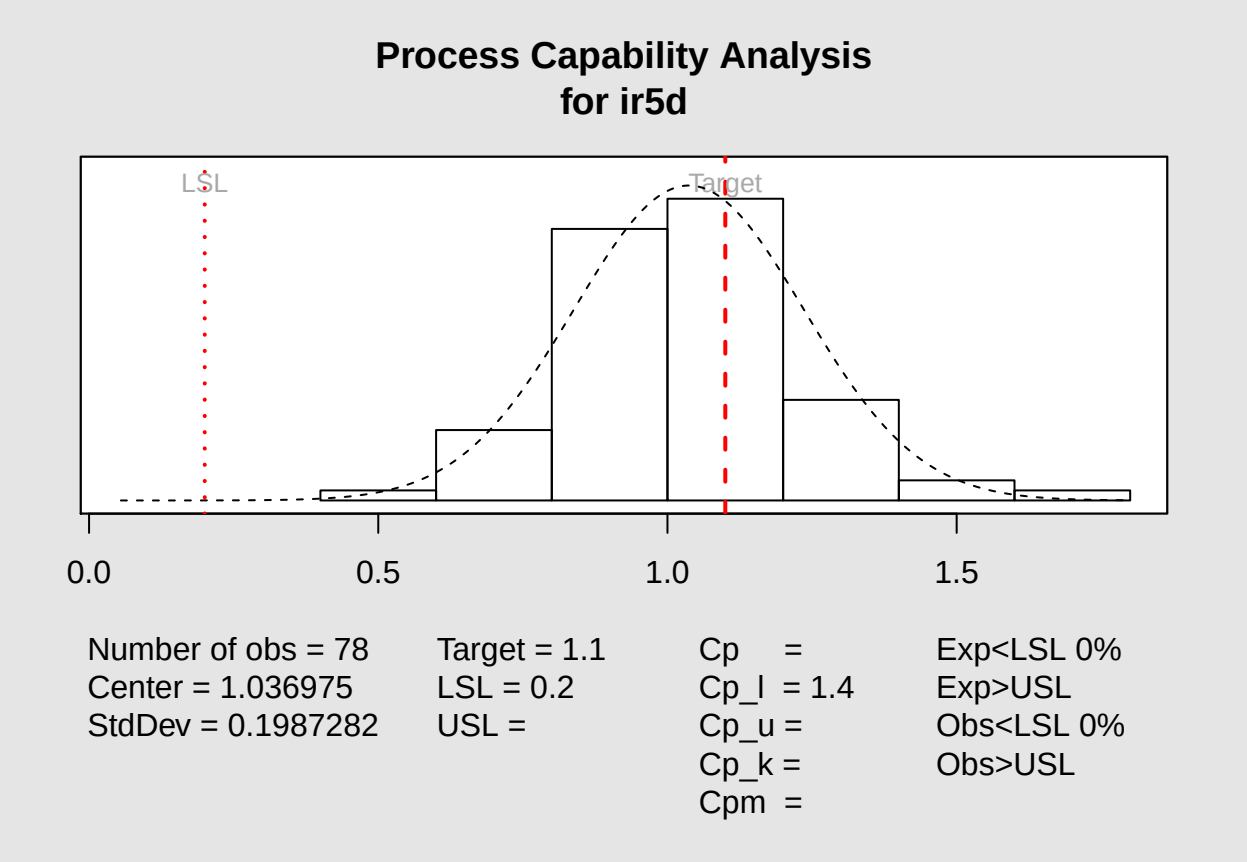
```
setwd("/Users/ewenwang/Dropbox/Data Science/DMAIC/Case Study/3-Analyze")

require(dplyr)

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

lsl = 0.2
usl = NA
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
##
## 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 =
##
## Capability indices:
##
##       Value   2.5%  97.5%
## Cp
## Cp_l  1.404  1.208    1.6
## Cp_u
## Cp_k
## Cpm
##
## Exp<LSL 0%    Obs<LSL 0%
## Exp>USL   Obs>USL
```

The Cp_l is 1.404, with a confidence interval (1.208, 1.6), which indicates that the process is capable.

```
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/},
##   }
```