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# Examples borrowed from:
### http://www.statmethods.net/stats/power.html
### You can also look at:
### http://www.ats.ucla.edu/stat/R/dae/t_test_power.htm

if(!require(pwr)){
  install.packages("pwr",
  repos="http://ftp.heanet.ie/mirrors/cran.r-project.org/")
  
  #install.packages("pwr", lib="/home/tuusuario/R/x86_64-pc-linux-gnu-
  library/2.15", repos="http://ftp.heanet.ie/mirrors/cran.r-project.org/")
}

#require(pwr, lib="/home/tuusuario/R/x86_64-pc-linux-gnu-gnu-library/2.15")
require(pwr)

# What is the power of a one-tailed t-test, with a
# significance level of 0.01, 25 people in each group,
# and an effect size equal to 0.75?

pwr.t.test(n=25,d=0.75,sig.level=.01,alternative="greater")
cat("</br></br>")

# Using a two-tailed test proportions, and assuming a
# significance level of 0.01 and a common sample size of
# 30 for each proportion, what effect size can be detected
# with a power of .75?

pwr.2p.test(n=30,sig.level=0.01,power=0.75)
cat("</br></br>")

# For a one-way ANOVA comparing 5 groups, calculate the
# sample size needed in each group to obtain a power of
# 0.80, when the effect size is moderate (0.25) and a
# significance level of 0.05 is employed.

pwr.anova.test(k=5,f=.25,sig.level=.05,power=.8)
cat("</br></br>")

Two-sample t test power calculation

n = 25
d = 0.75
sig.level = 0.01
    power = 0.5988572
    alternative = greater

NOTE: n is number in *each* group

Difference of proportion power calculation for binomial distribution
(arcsine transformation)

    h = 0.8392269
    n = 30
    sig.level = 0.01
    power = 0.75
    alternative = two.sided

NOTE: same sample sizes

Balanced one-way analysis of variance power calculation

    k = 5
    n = 39.1534
    f = 0.25
    sig.level = 0.05
    power = 0.8

NOTE: n is number in each group