

# Maximize your chance of finding significant results



Get accurate sample sizes quickly and easily with SamplePower,  
your solution for research success

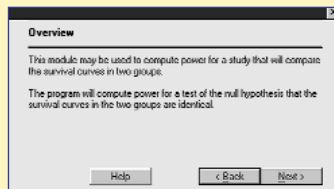
**SamplePower®**

# Get precise results faster with flexible, efficient tools

SamplePower is packed with features designed to make finding accurate sample sizes easy. Convenience is built in at every level, from the smooth user interface to behind-the-scenes statistical computations that give results in seconds. You get the clear, precise answers you need to move forward with your research.

## Perform analysis in minutes

SamplePower's interactive guide leads you smoothly through your analysis. The guide explains terms and takes you through the steps necessary to determine an effective sample size.



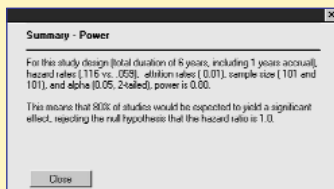
## See how your research criteria will affect power

SamplePower's tables and graphs will allow you to assess easily how different combinations of your research parameters (such as proposed sample size, alpha levels and duration) will affect your statistical power.



## Make informed decisions at every step

SamplePower's interactive summary panel gives you concise



summaries of power and precision at any point, so you can see how each decision affects your results.

## Compare results before you begin your research

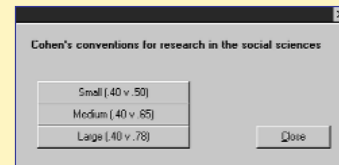
The stored scenarios tool gives you optimum control over the flow of your research. You can vary alpha level, power,

effect size or sample size in the main screen and store your results as you continue. This illustration shows how the sample size varies as other settings, such as alpha, are changed.

## Get accurate guidance with Cohen's effect sizes

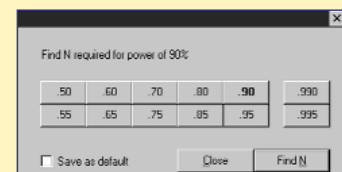
SamplePower's Tool menu provides Cohen's effect size conventions, which allow you to determine effect sizes

for particular tests by simply clicking on an icon. Cohen's effect size provides users with a "rule-of-thumb" for determining otherwise ambiguous "small," "medium" and "large" effect sizes. Plug these effect sizes into the main screen to see how varying the effect size affects power or precision.



## Find sample sizes in one mouseclick

SamplePower's Find N tool finds the sample size for the default power setting in one click. You also have the flexibility to choose different power size settings to compare results.



## SamplePower specifications

### GENERAL FEATURES

#### Statistical options

- Set alpha level, one- or two-tailed tests, number of decimals displayed
- Set N of cases spin control for minimum, maximum and increment
- Set computational formula (some exact formulas implemented)
- Set data entry and study design options

#### Tools

- Show power and precision (availability depends on test) with varied sample sizes, power only, or power with varied effect sizes and alphas
- Create scenario text reports and lists of stored computations
- Find N for any power or for default power
- Show Cohen's effect size conventions for specific tests

#### Working with results

- New ■ The tables can be pivoted interactively
- New ■ New methods have been added for printing and exporting the tables, including an option to export the data to Excel® or other spreadsheet programs
- New ■ Display several graphs at once in a manner that allows you to quickly assess the impact of various factors either alone or in conjunction with each other
- New ■ Graphs are linked to the pivot tables and are rebuilt automatically to reflect the structure of the tables
- New ■ Graphs may be saved in a number of formats including WMF, EMF and BMP and easily exported to programs such as Word® or PowerPoint®

### STATISTICAL TESTS

#### Means

- One-sample t-test that mean = zero
- One-sample t-test that mean = specified value: population variance known, unknown
- Paired t-tests that mean difference = zero or that difference = specified value
- Precision
- T-test for two independent groups with common variance: common variance known, unknown

#### Proportions

- One-sample test that proportion = 0.50, proportion = specific value
  - Computational options for power: normal approximation (arcsin transformation), exact binomial distribution
  - Find N for power: normal approximation (arcsin transformation), exact formula
  - Precision: normal approximation, exact formula (binomial distribution)
- 2x2 for independent samples
  - Computational options for power: arcsin approximation, normal approximation (weighted and unweighted mean p), chi-square (two-tailed only), chi-square with Yates correction (two-tailed only), Kramer and Greenhouse, Casagrande and Pike (Fisher approximation)
  - Fisher exact
  - Computational options for precision: log method, log method with Yates correction, Cornfield/Gart method, Cornfield/Gart method with Yates correction
  - Effect size displayed: rate difference (default), odds and log-odds ratios, relative and log-relative risks

- 2x2 for paired samples (McNemar)
  - Computational options for power: normal approximation, exact binomial
- Sign test
  - Computational options for power: normal approximation, exact binomial
- KxC for independent samples
  - Indexes of effect: effect size index, contingency coefficient, Cramér's phi
  - Computational option for power: non-central chi-square

#### Correlations

- One-sample tests that correlation = zero or that correlation = specific value
  - Computational options for power: exact for test versus null of zero; Fisher Z transform for nonzero null
  - Computational options for precision: reports precision for test versus null of zero or for test versus null of specific value
- Two-sample test that correlations are equal: computational option for power, Fisher Z transformation

#### ANOVA

- Oneway Analysis of Variance and Analysis of Covariance
  - Effect size: enter f directly, between-groups standard deviation, range of group means and pattern of dispersion, mean for each group
- Factorial Analysis of Variance and Analysis of Covariance: two factors, three factors
  - Effect size: enter f directly, between-groups standard deviation, range of group means and pattern of dispersion, mean for each group

#### Regression

- Templates for study design
  - One set of predictors or set of covariates followed by set of predictors
  - Set A, Set B and interaction
  - Polynomial regression
  - Covariates followed by dummy coded variable
- Error model
  - Model I error: error is  $1-R^2$  through the current set
  - Model II error: error is  $1-R^2$  for all variables in the model

#### New Logistic regression

- One continuous predictor or two continuous predictors
- One categorical predictor with two levels or one categorical predictor with more than two levels

#### New Survival analysis

- Accrual options: subjects entered prior to first study interval, subjects entered during study at constant rate, accrual varies
- Hazard rate options: constant, varies
- Attrition rate options: no attrition, constant rate, rate varies

#### New Equivalence tests

- Equivalence tests for means and for proportions

#### SYSTEM REQUIREMENTS

- Windows 95/98/2000/NT 4.0
- SVGA monitor
- 16MB RAM
- 10MB drive space
- Pentium-class processor

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