Package 'MOTE'

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Title Effect Size and Confidence Interval Calculator

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Depends R (>= 3.1.0), MBESS

Description This package calculates various effect sizes (d, r, odds ratio, v) and their non-centralized confidence intervals.

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Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

R topics documented:

`apa` *apa*

Description

A function that formats decimals and leading zeroes

Usage

```
apa(value, decimals = 3, leading = T)
```

Arguments

`value`	the number you want to format
`decimals`	the number of decimal points desired
`leading`	logical TRUE for leading zeroes on decimals and FALSE for no leading zeroes on decimals

Examples

```
apa(value = 0.54674, decimals = 3, leading = T)
```

`d.dep.t.avg` *d.dep.t.avg*

Description

This function displays d for repeated measures data and the non-central confidence interval using the average standard deviation of each level as the denominator.

Usage

```
d.dep.t.avg(m1, m2, sd1, sd2, n, a = 0.05)
```

Arguments

`m1`	mean from first level
`m2`	mean from second level
`sd1`	standard deviation from first level
`sd2`	standard deviation from second level
`n`	sample size
`a`	significance level

Examples

```
d.dep.t.avg(m1 = 20, m2 = 17, sd1 = 4, sd2 = 5, n = 100, a = .05)
```

`d.dep.t.diff` *d.dep.t.diff*

Description

This function displays d for repeated measures data and the non-central confidence interval using the standard deviation of the differences as the denominator.

Usage

```
d.dep.t.diff(mdiff, sddiff, n, a = 0.05)
```

Arguments

`mdiff`	mean difference score
`sddiff`	standard deviation of the difference scores
`n`	sample size
`a`	significance level

Examples

```
d.dep.t.diff(mdiff = 5, sddiff = 3, n = 100, a = .05)
```

`d.dep.t.diff.t` *d.dep.t.diff*

Description

This function displays d for repeated measures data and the non-central confidence interval using the standard deviation of the differences as the denominator estimating from the t-statistic.

Usage

```
d.dep.t.diff.t(t, n, a = 0.05)
```

Arguments

`t`	t-test value
`n`	sample size
`a`	significance level

Examples

```
d.dep.t.diff.t(t = 5, n = 100, a = .05)
```

`d.dep.t.rm` *d.dep.t.rm*

Description

This function displays d for repeated measures data controlling for r and the non-central confidence interval using the average standard deviation of each level as the denominator.

Usage

```
d.dep.t.rm(m1, m2, sd1, sd2, r, n, a = 0.05)
```

Arguments

`m1`	mean from first level
`m2`	mean from second level
`sd1`	standard deviation from first level
`sd2`	standard deviation from second level
`r`	correlation between first and second level
`n`	sample size
`a`	significance level

Examples

```
d.dep.t.rm(m1 = 20, m2 = 17, sd1 = 4, sd2 = 5, r = .30, n = 100, a = .05)
```

`d.ind.t` *d.ind.t*

Description

This function displays d for between subjects data and the non-central confidence interval using the pooled standard deviation as the denominator.

Usage

```
d.ind.t(m1, m2, sd1, sd2, n1, n2, a = 0.05)
```

Arguments

`m1`	mean group one
`m2`	mean group two
`sd1`	standard deviation group one
`sd2`	standard deviation group two
`n1`	sample size group one
`n2`	sample size group two
`a`	significance level

Examples

```
d.ind.t(m1 = 20, m2 = 17, sd1 = 4, sd2 = 5, n1 = 100, n2 = 100, a = .05)
```

`d.ind.t.t` *d.ind.t.t*

Description

This function displays d for between subjects data and the non-central confidence interval estimating from the t-statistic.

Usage

```
d.ind.t.t(t, n1, n2, a = 0.05)
```

Arguments

`t`	t-test value
`n1`	sample size group one
`n2`	sample size group two
`a`	significance level

Examples

```
d.ind.t.t(t = 4.12, n1 = 100, n2 = 100, a = .05)
```

`d.prop` *d.prop*

Description

This function displays d and central confidence interval calculated from differences in independent proportions.

Usage

```
d.prop(p1, p2, n1, n2, a = 0.05)
```

Arguments

`p1`	proportion of people group one
`p2`	proportion of people group two
`n1`	sample size group one
`n2`	sample size group two
`a`	significance level

Examples

```
d.prop(p1 = .4, p2 = .6, n1 = 100, n2 = 100, a = .05)
```

`d.single.t` *d.single.t*

Description

This function displays d and non-central confidence interval for single t from means.

Usage

```
d.single.t(m, u, sd, n, a = 0.05)
```

Arguments

`m`	sample mean
`u`	population mean
`sd`	sample standard deviation
`n`	sample size
`a`	significance level

Examples

```
d.single.t(m = 20, u = 17, sd = 4, n = 100, a = .05)
```

`d.single.t.t` *d.single.t.t*

Description

This function displays d and non-central confidence interval for single t estimated from the t-statistic.

Usage

```
d.single.t.t(t, n, a = 0.05)
```

Arguments

`t`	t-test value
`n`	sample size
`a`	significance level

Examples

```
d.single.t.t(t = 4.20, n = 100, a = .05)
```

d.to.r *d.to.r*

Description

Calculates r from d and then translates r to r2 to calculate the non-central confidence interval for r2 using the F distribution.

Usage

```
d.to.r(d, n1, n2, a = 0.05)
```

Arguments

d	effect size statistic
n1	sample size group one
n2	sample size group two
a	significance level

Examples

```
d.to.r(d = .5, n1 = 50, n2 = 50, a = .05)
```

d.z.mean *d.z.mean*

Description

This function displays d for z-scores with the population mean and standard deviation. The normal confidence interval is also provided.

Usage

```
d.z.mean(mu, m1, sig, sd1, n, a = 0.05)
```

Arguments

mu	population mean
m1	sample study mean
sig	population standard deviation
sd1	standard deviation from the study
n	sample size
a	significance level

Examples

```
d.z.mean(mu = 20, m1 = 17, sig = 4, sd1 = 5, n = 100, a = .05)
```

d.z.z *d.z.z*

Description

This function displays d for z-scores when all you have is the z-statistics. The normoal confidence interval is also provided if you have sigma. If sigma is left blank, then you will not see a confidence interval.

Usage

```
d.z.z(z, sig = NA, n, a = 0.05)
```

Arguments

z	z statistic
sig	population standard deviation
n	sample size
a	significance level

Examples

```
d.z.z(z = 1.25, sig = 3, n = 10, a = .05)
```

delta.ind.t *delta.ind.t*

Description

This function displays d-delta for between subjects data and the non-central confidence interval using the control group standard deviation as the denominator.

Usage

```
delta.ind.t(m1, m2, sd1, sd2, n1, n2, a = 0.05)
```

Arguments

m1	mean from control group
m2	mean from experimental group
sd1	standard deviation from control group
sd2	standard deviation from experimental group
n1	sample size from control group
n2	sample size from experimental group
a	significance level

Examples

```
delta.ind.t(m1 = 20, m2 = 17, sd1 = 4, sd2 = 5, n1 = 100, n2 = 100, a = .05)
```

epsilon.full.SS *epsilon.full.SS*

Description

This function displays epsilon squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula works for one way and multi way designs with careful focus on the sum of squares total calculation.

Usage

```
epsilon.full.SS(dfm, dfe, msm, mse, sst, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
msm	mean square for the model/IV/between
mse	mean square for the error/residual/within
sst	sum of squares total
a	significance level

Examples

```
epsilon.full.SS(dfm = 2, dfe = 100, msm = 214, mse = 100, sst = 5339, a = .05)
```

eta.F *eta.F*

Description

This function displays eta, r squared, ICCs from ANOVA analyses and their non-central confidence interval based on the F distribution. These values are calculated directly from F statistics and can be used for between subjects and repeated measures designs. Remember if you have two or more IVs, these values are partial eta squared.

Usage

```
eta.F(dfm, dfe, Fvalue, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
Fvalue	F statistic
a	significance level

Examples

```
eta.F(dfm = 2, dfe = 20, Fvalue = 5.7, a = .05)
```

eta.full.SS *eta.full.SS*

Description

This function displays eta squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula works for one way and multi way designs with careful focus on the sum of squares total.

Usage

```
eta.full.SS(dfm, dfe, ssm, sst, Fvalue, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
ssm	sum of squares for the model/IV/between
sst	sum of squares total
Fvalue	F statistic
a	significance level

Examples

```
eta.full.SS(dfm = 2, dfe = 100, ssm = 435, sst = 659, Fvalue = 5.46, a = .05)
```

eta.partial.SS *eta.partial.SS*

Description

This function displays partial eta squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula works for one way and multi way designs.

Usage

```
eta.partial.SS(dfm, dfe, ssm, sse, Fvalue, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
ssm	sum of squares for the model/IV/between
sse	sum of squares for the error/residual/within
Fvalue	F statistic
a	significance level

Examples

```
eta.partial.SS(dfm = 2, dfe = 100, ssm = 435, sse = 659, Fvalue = 5.46, a = .05)
```

g.ind.t *g.ind.t*

Description

This function displays d-g corrected and the non-central confidence interval for independent t.

Usage

```
g.ind.t(m1, m2, sd1, sd2, n1, n2, a = 0.05)
```

Arguments

m1	mean group one
m2	mean group two
sd1	standard deviation group one
sd2	standard deviation group two
n1	sample size group one
n2	sample size group two
a	significance level

Examples

```
g.ind.t(m1 = 20, m2 = 17, sd1 = 4, sd2 = 5, n1 = 100, n2 = 100, a = .05)
```

ges.partial.SS.mix *ges.partial.SS.mix*

Description

This function displays partial ges squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula works for mixed designs.

Usage

```
ges.partial.SS.mix(dfm, dfe, ssm, sss, sse, Fvalue, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
ssm	sum of squares for the model/IV/between
sss	sum of squares subject variance
sse	sum of squares for the error/residual/within
Fvalue	F statistic
a	significance level

Examples

```
ges.partial.SS.mix(dfm = 2, dfe = 100, ssm = 435, sss = 235, sse = 659, Fvalue = 5.46, a = .05)
```

ges.partial.SS.rm *ges.partial.SS.rm*

Description

This function displays partial ges squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula works for multi-way repeated measures designs.

Usage

```
ges.partial.SS.rm(dfm, dfe, ssm, sss, sse1, sse2, sse3, Fvalue, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
ssm	sum of squares for the model/IV/between
sss	sum of squares subject variance
sse1	sum of squares for the error/residual/within for the first IV
sse2	sum of squares for the error/residual/within for the second IV
sse3	sum of squares for the error/residual/within for the interaction
Fvalue	F statistic
a	significance level

Examples

```
ges.partial.SS.rm(dfm = 2, dfe = 100, ssm = 435, sss = 659, sse1 = 435, sse2 = 446, sse3 = 546, Fvalue = 5.46, a =
```

odds *odds*

Description

This function displays odds ratios and their normal confidence intervals. This statistic is calculated as (level 1.1/level 1.2) / (level 2.1/level 2.2), which can be considered the odds of level 1.1 given level1 overall versus level2.1 given level2 overall.

Usage

```
odds(n11, n12, n21, n22, a = 0.05)
```

Arguments

n11	sample size for level 1.1
n12	sample size for level 1.2
n21	sample size for level 2.1
n22	sample size for level 2.2
a	significance level

Examples

```
odds(n11 = 10, n12 = 15, n21 = 20, n22 = 5, a = .05)
```

`omega.F` *omega.F*

Description

This function displays omega squared from ANOVA analyses and its non-central confidence interval based on the F distribution. These values are calculated directly from F statistics and can be used for between subjects and repeated measures designs. Remember if you have two or more IVs, these values are partial omega squared.

Usage

```
omega.F(dfm, dfe, Fvalue, n, a = 0.05)
```

Arguments

`dfm`	degrees of freedom for the model/IV/between
`dfe`	degrees of freedom for the error/residual/within
`Fvalue`	F statistic
`n`	full sample size
`a`	significance level

Examples

```
omega.F(dfm = 2, dfe = 97, Fvalue = 5.7, n = 100, a = .05)
```

`omega.full.SS` *omega.full.SS*

Description

This function displays omega squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula works for one way and multi way designs with careful focus on which error term you are using for the calculation.

Usage

```
omega.full.SS(dfm, dfe, msm, mse, sst, a = 0.05)
```

Arguments

`dfm`	degrees of freedom for the model/IV/between
`dfe`	degrees of freedom for the error/residual/within
`msm`	mean square for the model/IV/between
`mse`	mean square for the error/residual/within
`sst`	sum of squares total
`a`	significance level

Examples

```
omega.full.SS(dfm = 2, dfe = 100, msm = 214, mse = 100, sst = 5339, a = .05)
```

`omega.partial.SS.bn` *omega.partial.SS.bn*

Description

This function displays omega squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula is appropriate for multi-way between subjects designs.

Usage

```
omega.partial.SS.bn(dfm, dfe, msm, mse, ssm, n, a = 0.05)
```

Arguments

`dfm`	degrees of freedom for the model/IV/between
`dfe`	degrees of freedom for the error/residual/within
`msm`	mean square for the model/IV/between
`mse`	mean square for the error/residual/within
`ssm`	sum of squares for the model/IV/between
`n`	total sample size
`a`	significance level

Examples

```
omega.partial.SS.bn(dfm = 2, dfe = 100, msm = 214, mse = 100, ssm = 5339, n = 150, a = .05)
```

`omega.partial.SS.rm` *omega.partial.SS.rm*

Description

This function displays omega squared from ANOVA analyses and its non-central confidence interval based on the F distribution. This formula is appropriate for multi-way repeated measures designs and mix level designs.

Usage

```
omega.partial.SS.rm(dfm, dfe, msm, mse, mss, ssm, sse, sss, a = 0.05)
```

Arguments

dfm	degrees of freedom for the model/IV/between
dfe	degrees of freedom for the error/residual/within
msm	mean square for the model/IV/between
mse	mean square for the error/residual/within
mss	mean square for the subject variance
ssm	sum of squares for the model/IV/between
sse	sum of squares for the error/residual/within
sss	sum of squares for the subject variance
a	significance level

Examples

```
omega.partial.SS.rm(dfm = 2, dfe = 100,
                    msm = 214, mse = 100, mss = 20,
                    ssm = 5339, sse = 435, sss = 53, a = .05)
```

---

r.correl *r.correl*

Description

This function displays transformation from r to r2 to calculate the non-central confidence interval for r2 using the F distribution.

Usage

```
r.correl(r, n, a = 0.05)
```

Arguments

r	correlation coefficient
n	sample size
a	significance level

Examples

```
r.correl(r = .5, n = 100, a = .05)
```

v.chi.sq *v.chi.sq*

Description

This function displays V and non-central confidence interval for the specified chi-square statistic.

Usage

```
v.chi.sq(x2, n, r, c, a = 0.05)
```

Arguments

x2	chi-square statistic
n	sample size
r	number of rows in the contingency table
c	number of columns in the contingency table
a	significance level

Examples

```
v.chi.sq(x2 = 4, n = 25, r = 2, c = 2, a = .05)
```

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