Package 'DACF'

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Title Data Analysis with Ceiling and/or Floor Data

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Description An implementation of data analytic methods in R for analyses for data with ceiling/floor effects. The package currently includes functions for mean/variance estimation and mean comparison tests.

Depends R (>= 3.3.2)

License GPL-2

Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

R topics documented:

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f.star.test	*f.star.test*

Description

conduct a Brown-Forsythe F star test

Usage

```
f.star.test(means, variances, ns)
```

Arguments

`means`	a (non-empty) numeric vector of the group means
`variances`	a (non-empty) numeric vector of the group variances
`ns`	a (non-empty) numeric vector of sample size per group

Value

`statistic`	the value of the adjusted Brown-Forsythe F star statistics
`p.value`	the p-value for the test
`est.f.squared`	effect size estimate as in Cohen's f squared

Examples

```
## Not run:
# a f star test for three-group mean comparison
f.star.test(c(-.2,0,.2),c(1,1,1),c(100,100,100))
f.star.test(c(0,0,1),c(2,1,3),c(100,100,100))
## End(Not run)
```

---

induce.cfe	*induce.cfe*

Description

inducing ceiling/floor effects in data

Usage

```
induce.cfe(floor.perc, ceiling.perc, y)
```

Arguments

`floor.perc`	a (non-empty) numeric value from 0 to 1 denoting the desired percentage of floor effects
`ceiling.perc`	a (non-empty) numeric value from 0 to 1 denoting the desired percentage of ceiling effects
`y`	a (non-empty) numeric vector of data

Value

y scores with induced ceiling/floor effects

`lw.f.star`	*lw.f.star*

Description

conduct an F star with for data with ceiling/floor effects

Usage

```
lw.f.star(data, formula, method_type)
```

Arguments

`data`	a dataframe of data with ceiling/floor effects and corresponding group variables in wide format
`formula`	a formula denoting the dependent and independent variable, e.g., y~group
`method_type`	a character string specifying the preferred method type. "a" uses the original sample size and "b" uses after-truncation sample size.

Value

`statistic`	the value of the Brown-Forsythe F star statistics
`p.value`	the p-value for the test
`est.f.squared`	effect size estimate in Cohen's f squared

Examples

```
## Not run:
lw.f.star(dat,y~x,"a") #using truncated n
lw.f.star(dat,y~x,"b") #using original n
## End(Not run)
```

`lw.t.test`	*lw.t.test*

Description

conduct a t test adjusting for ceiling and/or floor effects

Usage

```
lw.t.test(x1, x2, method_type)
```

Arguments

`x1`	a (non-empty) numeric vector of data values for group 1 with floor/ceiling effects
`x2`	a (non-empty) numeric vector of data values for group 2 with floor/ceiling effects
`method_type`	a character string specifying the preferred method type. "a" uses the original sample size and "b" uses after-truncation sample size.

Value

statistic	the value of the adjusted t test statistics
p.value	the p-value for the test
est.d	effect size estimate as in Cohen's d
conf.int	95% confidence interval

Examples

```
## Not run:
lw.t.test(x1.c,x2.c,"a") #using truncated n
lw.t.test(x1.c,x2.c,"b") #using original n
## End(Not run)
```

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rec.mean.var	*rec.mean.var*

Description

recover mean and variance of the data with ceiling/floor effects

Usage

```
rec.mean.var(y)
```

Arguments

y	a (non-empty) numeric vector of data with ceiling/floor effects

Value

ceiling.percentage	
	the percentage of ceiling values in the data
floor.percentage	
	the percentage of floor values in the data
est.mean	estimated mean of the true scores
est.var	estimated variance of the true scores

Examples

```
# simulate normally distributed true scores
x=rnorm(1000,2,4)
mean(x); var(x)
# induce 20% floor effects
# and estimate the true mean variance from the floor data
x.f=induce.cfe(.2,0,x)
rec.mean.var(x.f)
# induce 20% ceiling effects
# and estimate the true mean and variance from the ceiling data
x.c=induce.cfe(0,.2,x)
rec.mean.var(x.c)
# induce 20% and 10% of floor and ceiling effects, respectively
# and estimate the true mean and variance from the data with floor and ceiling effects
x.cf=induce.cfe(.2,.1,x)
rec.mean.var(x.cf)
```

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threeganova.sim *threeganova.sim*

Description

simulate three-group anova data

Usage

```
threeganova.sim(group_n, f_sqr, sd.1)
```

Arguments

group_n   a (non-empty) numeric value of desired sample size per group

f_sqr   a (non-empty) numeric value of desired cohen's f squared value

sd.1   a (non-empty) numeric value of desired standard deviation ratio

Value

a dataframe containing scores "y", grouping factor "group", and residual errors.

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