

Package: Keng (via r-universe)

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Title Keng's Axe and Firewood

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Description Miscellaneous functions and data used in Qingyao's psychological research and teaching.

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Imports stats

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Contents

cut_r	2
test_PRE	2
test_r	3
Index	5

cut_r	<i>Cut-off values of r given the sample size n.</i>
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Description

Cut-off values of r given the sample size n .

Usage

```
cut_r(n)
```

Arguments

n Sample size of the r .

Details

Given n and p , t and then r could be determined. The formula used could be found in `test_r()`'s documentation.

Value

A data.frame including the cut-off values of r at the significance levels of $p = 0.1, 0.05, 0.01, 0.001$. r with the absolute value larger than the cut-off value is significant at the corresponding significance level.

Examples

```
cut_r(193)
```

test_PRE	<i>Compute PRE and test it using the F-test.</i>
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Description

Compute PRE and test it using the F-test.

Usage

```
test_PRE(  
  fitC = NULL,  
  fitA = NULL,  
  n = NULL,  
  PC = NULL,  
  PA = NULL,  
  SSEC = NULL,  
  SSEA = NULL  
)
```

Arguments

fitC	The result of <code>lm()</code> of the Compact model (Model C).
fitA	The result of <code>lm()</code> of the Augmented model (Model A).
n	Sample size of the Model C or Model A. Model C and Model A must use the same sample, and hence have the same sample size.
PC	The number of parameters in Model C.
PA	The number of parameters in Model A. PA must be larger than PC.
SSEC	The Sum of Squared Errors of Model C.
SSEA	The Sum of Squared Errors of Model A.

Details

`test_PRE()` tests the PRE (Proportional Reduction in Error) of Model A compared with Model C. There are two ways of using `test_PRE()`. The first is giving `test_PRE()` `fitC` and `fitA`. The second is giving `n`, `PC`, `PA`, `SSEC`, and `SSEA`. The first way is more convenient, and it minimizes precision loss by omitting copying and pasting `SSEC` and `SSEA`. Please refer to Judd et al. (2017) for more details about *PRE*.

Value

A data.frame including `SSEC`, `SSEA`, `PRE`, `F`, `df1`, `df2`, and `p`.

References

Judd, C. M., McClelland, G. H., & Ryan, C. S. (2017). *Data analysis: A model comparison approach to regression, ANOVA, and beyond*. Routledge.

Examples

```
x <- rnorm(193)
y <- 0.3 + 0.2*x + rnorm(193)
dat <- data.frame(y, x)
fitC <- lm(y ~ 1, dat)
fitA <- lm(y ~ x, dat)
test_PRE(fitC, fitA)
```

test_r

Test r using the t-test given r and n.

Description

Test r using the t-test given r and n.

Usage

```
test_r(r, n)
```

Arguments

<code>r</code>	Pearson correlation.
<code>n</code>	Sample size of r .

Details

To test the significance of the r using one-sample t -test, the SE of the r is determined by the following formula: $SE = \sqrt{(1 - r^2)/(n - 2)}$.

Value

A data.frame including r , se of r , t , and p .

Examples

```
test_r(0.2, 193)
```

Index

cut_r, 2

test_PRE, 2

test_r, 3