Package 'signmedian.test'

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Type Package

Title Perform Exact Sign Test and Asymptotic Sign Test in Large
Samples

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Description Perform sign test on one-sample data, which is one of the oldest non-parametric statistical methods. Assume that X comes from a continuous distribution with median = v (unknown). Test the null hypothesis H0: median of X v = mu (mu is the location parameter and is given in the test) v.s. the alternative hypothesis H1: v > mu (or v < mu or v != mu) and calculate the p-value. When the sample size is large, perform the asymptotic sign test. In both ways, calculate the R-estimate of location of X and the distribution free confidence interval for mu.

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signmedian.test-package

Perform Exact Sign Test and Asymptotic Sign Test in Large Samples

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Details

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Author(s)

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References

none.

Examples

```
##One-sample test
x<-c(-5,-3,-2,1,5,6,3,9,10,15,20,21)
signmedian.test(x,alternative = "greater",exact=TRUE)
signmedian.test(x,mu=3,alternative="two.sided",exact=FALSE)
##Two-sample test(paired data)
x<-c(-5,-3,-2,1,5,6,3,9,10,15,20,21)
y<-c(-1,-2,-3,1,2,3,4,2,6,8,9,10)
x<-y-x
signmedian.test(x,alternative = "greater",exact=TRUE)
```

| signmedian.test | *Perform Exact Sign Test and Asymptotic Sign Test in Large Samples* |

Description

Perform sign test on one-sample data, which is one of the oldest non-parametric statistical methods. Assume that X comes from a continuous distribution with median = v (unknown). Test the null hypothesis H0: median of X v = mu (mu is the location parameter and is given in the test) v.s. the alternative hypothesis H1: v > mu (or v < mu or v != mu) and calculate the p-value. When the sample size is large, perform the asymptotic sign test. In both ways, calculate the R-estimate of location of X and the distribution free confidence interval for mu.

Usage

```
## S3 method for class 'test'
signmedian(x,mu=0,
alternative=c("two.sided","less","greater"),
conf.level=0.95,exact=TRUE, ...)
```

Arguments

x	numeric vector of data values.
mu	the location parameter, it is a number specifying an optional parameter used to form the null hypothesis.
alternative	a character string specifying the alternative hypothesis, must be one of "two.sided", "greater" or "less". You can specify just the initial letter.
conf.level	confidence level of the confidence interval.
exact	a logical indicating whether an exact p-value should be computed.
...	further arguments to be passed to or from methods.

Details

This is a simple non-parametric statistical method. Perform simple sign test on one-sample data like wilcox.test without ranking. Assume that X comes from a continuous distribution with median = v (unknown). Test the null hypothesis H0: median of X v = mu (mu is given in the test) v.s. the alternative hypothesis H1: v > mu (or v < mu or v != mu) and calculate the p-value. When the sample size is large, perform the asymptotic sign test(with continuity correction). In both exact and asymptotic sign tests, calculate the R-estimate of location of X and the distribution free confidence interval for location parameter mu. This can also perform a test of the paired data (X, Y) if we redefine X with Y-X.

Value

statistic	the value of the test statistic with a name describing it.
parameter	the location parameter mu.

p.value	the p-value for the test.
alternative	a character string describing the alternative hypothesis.
conf.int	a confidence interval for the location parameter.
estimate	an estimate of the location parameter.
method	the type of test applied.
data.name	a character string giving the names of the data.

Note

If you want to perform a test of the paired data (X, Y), please redefine X with Y-X and then perform the test.

Author(s)

Ting Yang and Yeyun Yu

References

none.

Examples

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