Package ‘CATTexact’

June 25, 2020

Type Package

Title Computation of the p-Value for the Exact Conditional Cochran-Armitage Trend Test

Version 0.1.1

Description Provides functions for computing the one-sided p-values of the Cochran-Armitage trend test statistic for the asymptotic and the exact conditional test. The computation of the p-value for the exact test is performed using an algorithm following an idea by Mehta, et al. (1992) <doi:10.2307/1390598>.

Depends R (>= 3.6.0)

License GPL-2 | GPL-3

LazyData TRUE

RoxygenNote 7.0.2

Suggests testthat

NeedsCompilation no

Author Dominic Edelmann [aut, cre]

Maintainer Dominic Edelmann <dominic.edelmann@dkfz-heidelberg.de>

Repository CRAN

Date/Publication 2020-06-25 15:40:14 UTC

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Asymptotic Cochran-Armitage trend test

catt_asy calculates the Cochran-Armitage trend test statistic (Cochran (1954), Armitage (1955)) and the one-sided p-value for the corresponding asymptotic test. The exact form of used test statistic can be found in the paper by Portier and Hoel (1984).

Usage

catt_asy(dose.ratings, totals, cases)

Arguments

dose.ratings A vector of dose ratings, the i-th entry corresponds to the dose-rating of the i-th group. This vector must be strictly monotonically increasing

totals The vector of total individuals per group, the i-th entry corresponds to the total number of individuals in the i-th group

cases The vector of incidences per groups, the i-th entry corresponds to the number of incidences in the i-th group

Value

A list containing the value of the Cochran-Armitage Trend Test Statistic and its asymptotic p-value.

References


Examples

d <- c(1,2,3,4)
n <- rep(20,4)
r <- c(1,4,3,8)
catt_asy(d, n, r)
catt_exact  

**Description**  

*catt_exact* calculates the Cochran-Armitage trend test statistic (Cochran (1954), Armitage (1955)) and the one-sided p-value for the corresponding conditional exact test. The conditional exact test has been established by Williams (1988). The computation of its p-value is performed using an algorithm following an idea by Mehta, et al. (1992).

**Usage**

```r
catt_exact(dose.ratings, totals, cases)
```

**Arguments**

- **dose.ratings**: A vector of dose ratings, the i-th entry corresponds to the dose-rating of the i-th group. This vector must be strictly monotonically increasing.
- **totals**: The vector of total individuals per group, the i-th entry corresponds to the total number of individuals in the i-th group.
- **cases**: The vector of incidences per groups, the i-th entry corresponds to the number of incidences in the i-th group.

**Value**

A list containing the value of the Cochran-Armitage Trend Test Statistic, its exact and asymptotic p-value.

**References**


Examples

d <- c(1, 2, 3, 4)
n <- rep(20, 4)
r <- c(1, 4, 3, 8)

catt_exact(d, n, r)
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