mh {Epi}   R Documentation

Mantel-Haenszel analyses of cohort and case-control studies

Description

This function carries out Mantel-Haenszel comparisons in tabulated data derived from both cohort and case-control studies.

Usage

```
mh(cases, denom, compare=1, levels=c(1, 2), by=NULL,
     cohort=!is.integer(denom), confidence=0.9)
```

Arguments

cases	the table of case frequencies (a multiway array).
denom	the denominator table. For cohort studies this should be a table of person-years observation, while for case-control studies it should be a table of control frequencies.
compare	the dimension of the table which defines the comparison groups (can be referred to either by number or by name). The default is the first dimension of the table.
levels	a vector identifying (either by number or by name) the two groups to be compared. The default is the first two levels of the selected dimension.
by	the dimensions not to be collapsed in the Mantel-Haenszel computations. Thus, this argument defines the structure of the resulting tables of estimates and tests.
cohort	an indicator whether the data derive from a cohort or a case-control study. If the denominator table is stored as an integer, a case-control study is assumed.
confidence	the approximate coverage probability for the confidence intervals to be computed.

Details

Multiway tables of data are accepted and any two levels of any dimension can be chosen as defining the comparison groups. The rate (odds) ratio estimates and the associated significance tests may be collapsed over all the remaining dimensions of the table, or over selected dimensions only, so that tables of estimates and tests are computed.

Value

A list giving tables of rate (odds) ratio estimates, their standard errors (on a log scale), lower and upper confidence limits, chi-squared tests (1 degree of freedom) and the corresponding p-values. The result list also includes numerator and denominator of the Mantel-Haenszel estimates (q, r), and score test statistics and score variance (u, v).

Side Effects

None

References

Clayton, D. and Hills, M. : Statistical Models in Epidemiology, Oxford University Press (1993).

See Also

Lexis

Examples

```
# If d and y are 3-way tables of cases and person-years
# observation formed by tabulation by two confounders
# (named "C1" and "C2") an exposure of interest ("E"),
# the following command will calculate an overall
# Mantel-Haenszel comparison of the first two exposure
# groups.
#
# Generate some bogus data
dnam <- list( E=c("low","medium","high"), C1=letters[1:2], C2=LETTERS[1:4] )
d <- array( sample( 2:80, 24),
             dimnames=dnam, dim=sapply( dnam, length ) )
y <- array( abs( rnorm( 24, 227, 50 ) ),
             dimnames=dnam, dim=sapply( dnam, length ) )
mh(d, y, compare="E")
#
# Or, if exposure levels named "low" and "high" are to be
# compared and these are not the first two levels of E :
#
mh(d, y, compare="E", levels=c("low", "high"))
#
# If we wish to carry out an analysis which controls for C1,
# but examines the results at each level of C2:
#
mh(d, y, compare="E", by="C2")
#
# It is also possible to look at rate ratios for every
# combination of C1 and C2 :
#
mh(d, y, compare="E", by=c("C1", "C2"))
#
# If dimensions and levels of the table are unnamed, they must
# be referred to by number.
#
```

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