diaph.data

Description

This dataset consists of a list of imputed datasets for an example of multiple imputation for the correction of partial verification bias, as originally reported in Harel and Zhou (2006) and discussed by deGroot, et al. (2008).

Usage

diaph.data
diaph.data

Format

A list containing three elements:

- imputed.tables: A list of 100 imputed tables using the saturated categorical model of Schafer (1997).
- sens.samples: A vector of 1000 draws of the sensitivity of the test from the posterior distribution using the saturated categorical model of Schafer (1997).
- original.data: The original dataset from Marshall, et al. (1981), including the observations with missing gold standard values.

Details

For the imputed tables and the original table, D refers to the gold standard test and T refers to the diagnostic test of interest.

Source


References


Examples

data(diaph.data)
attach(diaph.data)

### Calculate sensitivity for each imputed table

sens.imps<-lapply(imputed.tables,function(x){ x[2,2]/(x[2,1]+x[2,2]) })
sens.imps.vars<-lapply(imputed.tables,function(x){ x[2,2]*x[2,1]/(x[2,1]+x[2,2])^3 })

### Calculate mixture summary

MImix(sens.imps,sens.imps.vars)

### Compare to usual t-summary using MIcombine: requires(mitools)

library(mitools)
summary(MIcombine(sens.imps,sens.imps.vars))

### Compare both to the Bayesian posterior estimate

quantile(sens.samples,c(0.025,0.5,0.975))
**MImix**

*Multiple imputation summaries via mixture of normals*

**Description**

Combines results of analyses on multiply imputed data sets using a mixture of normal distributions.

**Usage**

```r
MImix(results, ..., I
CC defa ult S3 method: I
MImix(results, variances, weights = 1/length(results), percentiles = c(0.025, 0.5, 0.975), I
```

**Arguments**

- `results`: A list of results from inference on separate imputed datasets
- `variances`: If `results` is a list of parameter vectors, `variances` should be the corresponding variance-covariance matrices
- `weights`: A vector of weights for each imputed dataset. The default is to use equal weights.
- `percentiles`: A vector of percentiles to be returned from the mixture summary distribution. The default is to return the 2.5th, 50th, and 97.5th percentiles.
- `...`: Other arguments, not used

**Details**

This function combines results of analyses on multiply imputed data sets using a mixture of normal distributions according to the approach described in Steele, R.J., Wang, N., and Raftery A.E. (2009). This package contains a generic function default method, although other methods may be available in future releases. The `results` argument in the default method may be either a list of parameter vectors or a list of objects that have `coef` and `vcov` methods. In the former case a list of variance-covariance matrices must be supplied as the second argument. This corresponds to the same structure that is used by `micombine` in the `mitools` package.

**Value**

An list containing the desired percentiles from the mixture summary distribution.

**Author(s)**

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**References**

Examples

### See help(diaph.data) for example
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