Package ‘attribrisk’

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Type Package
Title Population Attributable Risk
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LazyData Yes
LazyLoad Yes
Description Estimates population (etiological) attributable risk for
unmatched, pair-matched or set-matched case-control designs and returns a
list containing the estimated attributable risk, estimates of coefficients,
and their standard errors, from the (conditional, If necessary) logistic
regression used for estimating the relative risk.
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Description

Calculate attributable risk estimates for one or more exposure characteristics. The attributable risk, or etiologic fraction, is an estimate of the reduction in an outcome were a risk factor to change.

Usage

attribrisk(formula, data, weights, subset, na.action,
          varmethod = c("jackknife", "bootstrap", "none"),
          conf=.95, baseline, k=20, control,
          model = FALSE, x = FALSE, y = FALSE, ...)

Arguments

formula an object of class 'formula'. A symbolic description of the model to be fitted.
data a data frame used for the formula.
weights optional weights for the fitting criterion.
subset an optional vector specifying a subset of observations to be used.
na.action a missing-data filter function. This is applied to the model.frame after any subset argument has been used. Default is options()$na.action.
varmethod A string that specifies the resampling technique used to estimate confidence intervals and standard errors.
  • bootstrap: indicates that the CI and standard error should be estimated using a bootstrap.
  • jackknife: indicates that the CI and standard error should be estimated using a grouped jackknife.
  • none: do not estimate standard error or CI.
k the number of groups to use for the jackknife. The parameter is ignored for bootstrap variance. Setting this to 0 or to a value >= the sample size will leads to leaving out each observation one at a time, i.e., the ordinary jackknife. Optionally, k can be a vector with one element per observation that directly specifies the grouping of the observation, the jackknife estimate will leave out one group at a time. If the model has strata then they will not be broken, either all or none of the observations in a strata are left out of each jackknife subsample.
conf The confidence level for confidence intervals
control a list of optional parameters, see attribrisk.control.
baseline Must be either NULL or a data frame containing values for the exposure variable(s) of the formula, which specifies the desired baseline value for each individual.
model a logical value indicating whether model frame should be included as a component of the returned value.

x, y logical values indicating whether the model matrix and/or response used in the fitting process should be returned.

... other arguments such as nboot, normally passed to the attribrisk.control routine.

Value

an object of class "attribrisk" with the following components:

- **attribrisk** attributable risk estimate
- **var** variance of the attributable risk
- **fit** results from the underlying coxph or glm fit
- **boot** results of the boot function, optional
- **boot.ci** results of the boot.ci function, optional
- **call** A copy of the call to the function

Details

None.

See Also

attribrisk.fit, attribrisk.control, and benichou

Examples

data(benichou)

# Use the Benichou (1991) data to estimate attributable risk of oesophageal cancer due to alcohol greater than or equal to 80g/day
attribrisk(cases ~ expos(alcohol80), data=benichou)

---

**attribrisk.control**

Sets optional parameters for attribrisk.

Description

Sets optional bootstrap parameters for attribrisk.

Usage

attribrisk.control(nboot=500, bootci=list(type="perc"))
attribrisk.fit

Arguments

- `nboot`  Number of bootstrap samples
- `bootci` Parameters passed to the `boot.ci` function.

Value

A list of values that will be passed into `boot` and `boot.ci`.

See Also

- `boot`, `boot.ci`
### Data in table 1 in Benichou (1991) from study of esophageal cancer (Tuyns, et al.)

**Description**

Data in table 1 in Benichou (1991) from study of esophageal cancer (Tuyns, et al.)

**Format**

A data frame with 975 subjects and 8 variables.

- **cases** Esophageal cancer indicator (1=case, 0=control).
- **age** Subject age in years.
- **smoke** Quantity of tobacco smoked per day. (0-9g/day, 10-29g/day, or 30+g/day)
- **alcohol** Quantity of alcohol consumed per day (0-39g/day, 120+g/day, 40-79g/day, or 80-119g/day)
- **alcohol80** Quantity of alcohol consumed per day (0-79g or 80+g)
- **smoke.alc** Is set to 'Exposed' if subject was consumed more than 40+g of alcohol and 10+g of tobacco per day.
- **alcohol40** Quantity of alcohol consumed per day (0-39g or 40+g)
- **smoke10** Quantity of tobacco consumed per day (0-9g or 10+g)

**References**


**Description**


**Format**

A data frame with 2644 subjects and 5 variables.

- **cases** Stroke indicator. (1=Stroke, 0=Normal)
- **hbp** High blood pressure indicator. (1=High Blood Pressure, 0=Normal )
- **ihd** Ischemic heart disease indicator. (1=Heart Disease, 0=Normal)
- **dm** Diabetes indicator. (1=Diabetic, 0= Normal)
- **match.id** Matched case/controls have same ID.
References


print.attribrisk

Prints a summary of attribrisk.

Description

Print an attribrisk (attributable risk) object.

Usage

## S3 method for class 'attribrisk'
print(x, ...)

Arguments

x an object of class "attribrisk"
...

Arguments for the final printing such as digits

Details

If there were bootstrap confidence intervals created using multiple methods, e.g., 'percentile', 'BCa', etc, then by default only the first of them is printed. To see all confidence intervals print the boot.ci component of the attribrisk object.

Value

A copy of the input, with the invisible flag set to prevent printing.

See Also

attribrisk
stroke.dat


Description


Usage

data(stroke.dat)

Format

A data frame with 3388 observations on the following 4 variables.

- **cases**: Stroke indicator. (1=Stroke, 0=Normal)
- **age**: Years
- **smoke**: Current, Former, Never, Uncertain, Unknown, or <NA>
- **diastolic**: Diastolic blood pressure

References


summary.attribrisk

Summarizes the attribrisk object.

Description

This is a method for the function summary for object of the class "attribrisk".

Usage

```r
## S3 method for class 'attribrisk'
summary(object, ...)
```

Arguments

- **object**: A attribrisk output object of class "attribrisk".
- **...**: further arguments passed to or from other methods.
Value

The attribrisk object invisible flag set to prevent printing.

See Also

attribrisk

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| whisnant | Summary data from Whisnant, et al 1996 concerning cerebral infarction, blood pressure, diabetes |

Description

Summary data from Whisnant, et al 1996 concerning cerebral infarction, blood pressure, diabetes

Usage

data(whisnant)

Format

A data frame with 4 observations on the following 3 variables.

- **infarct** Stroke indicator. (1=Stroke, 0=Normal)
- **hbp** High blood pressure indicator. (1=High Blood Pressure, 0=Normal)
- **y** The number of patients in the observed categorys
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