Package 'CsChange'

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Type Package

Title Testing for Change in C-Statistic

Version 0.1.1

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Description Calculate the confidence interval and p value for change in C-statistic. The adjusted C-statistic is calculated by using formula as ``Somers' Dxy rank correlation"/2+0.5. The confidence interval was calculated by using the bootstrap method. The p value was calculated by using the Z testing method. Please refer to the article of Peter Ganz et al. (2016) <doi:10.1001/jama.2016.5951>.

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Encoding UTF-8

LazyData true

Imports rms, survival, boot, stats, Hmisc

NeedsCompilation no

Repository CRAN

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R topics documented:

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Description

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Usage

```
CsChange(fit1,fit2,data,nb,signif)
```

Arguments

fit1	an object from 'cph' or 'coxph' model
fit2	another object from 'cph' or 'coxph' model
data	a data frame used in the fit1 or fit2
nb	the number of bootstrap replicate, with a default of 100
signif	the significant level of confidence interval, with a default of 0.05 and a two-sided test

Value

change	change of C-statistic from fit1 to fit2
low,up	the 95 percent confidence interval of change
p	the p value of testing for change

Note

Please feel free to contact us, if you have any advice and find any bug!

Update description:

Version 0.1.1: Fix the error of "variables not found" for the 'coxph' model.

more functions will be included in 'CsChange' package!

Author(s)

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References

Peter Ganz, Bettina Heidecker, Kristian Hveem, Christian Jonasson, Shintaro Kato, Mark R. Segal, David G. Sterling, Stephen A. Williams. Development and Validation of a Protein-Based Risk Score for Cardiovascular Outcomes Among Patients With Stable Coronary Heart Disease. JAMA. 2016; 315(23):2532-2541. doi:10.1001/jama.2016.5951

Examples

```
require("rms")
set.seed(123)
n=50
age=50+12*rnorm(n)
sex=factor(sample(c('Male','Female'), n,rep=TRUE, prob=c(.6, .4)))
cens=15*runif(n)
h=.02*exp(.04*(age-50)+.8*(sex=='Female'))
dt=-log(runif(n))/h
e=ifelse(dt <= cens,1,0)
```

```
dt=pmin(dt, cens)
units(dt)="Year"
data=data.frame(dt,e,age,sex)
dd=datadist(age, sex)
options(datadist='dd')

#for 'cph' model
fit1=cph(Surv(dt,e)~age)
fit2=cph(Surv(dt,e)~age+sex)
CsChange(fit1,fit2,data,nb=20)

#for 'coxph' model
fit1=coxph(Surv(dt,e)~age)
fit2=coxph(Surv(dt,e)~age+sex)
CsChange(fit1,fit2,data,nb=20)
```

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