Package: lss2 (via r-universe)

September 14, 2024

Type Package

Title The Accelerated Failure Time Model to Right Censored Data Based on Least-Squares Principle

Version 1.1

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Description Due to lack of proper inference procedure and software, the ordinary linear regression model is seldom used in practice for the analysis of right censored data. This paper presents an S-Plus/R program that implements a recently developed inference procedure (Jin, Lin and Ying, 2006) <doi:10.1093/biomet/93.1.147> for the accelerated failure time model based on the least-squares principle.

Depends R(>= 2.1.0), quantreg

Suggests survival

License GPL (>= 2)

Encoding UTF-8

LazyData true

RoxygenNote 6.1.1

NeedsCompilation no

Date/Publication 2019-10-14 14:30:02 UTC

Repository https://asatwani2.r-universe.dev

RemoteUrl https://github.com/cran/lss2

RemoteRef HEAD

RemoteSha 881082539a30685af19142981d9f4005d9d4eb8a

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lss	*the accelerated failure time model to right censored data based on least-squares principle*

Description

Due to lack of proper inference procedure and software, the ordinary linear regression model is seldom used in practice for the analysis of right censored data. This package presents an S-Plus/R program that implements a recently developed inference procedure (Jin, Lin and Ying, 2006) for the accelerated failure time model based on the least-squares principle.

Usage

```
lss(formula, data, subset, trace = FALSE, mcsize = 500, maxiter = 10, tolerance
= 0.001, gehanonly = FALSE, cov = FALSE, na.action = na.exclude)
```

Arguments

formula	specifies a model to be fitted. The response and covariates of the model are separated by a ~ operator. The response, on the left side of ~, should be a Surv object with two columns, of which the first column is the survival time or censored time and the second column is the censoring indicator. The covariates or predictors X, on the right side of ~, should be columns with the same length as Surv object. eg: lss(Surv(time, status)~)
data	a data frame which contains the Surv objects and covariates.
subset	specifies subset of the original data frame that should be used for the model fit.
trace	takes logical values T or F. If it is set to be T, then the summary of every iteration will be kept. The default is F.
mcsize	specifies the resampling number. The default is 500.
maxiter	specifies the maximum iteration number. The iterations will be stopped after maxiter iterations if the convergence criterion is not met. The default is 50.
tolerance	specifies the value of convergence criterion. The default is 0.001.
gehanonly	takes logical values T or F. If gehanonly=T, only Gehan estimator will be calculated and the least-squares estimator will not be calculated. The default is gehanonly=F.
cov	takes logical values T or F. If cov=T, the covariance matrices of the Gehen estimator and the least-squares estimator will be printed. The default is cov=F.
na.action	takes values na.exclude or na.fail. The default is na.exclude, which deletes the observations with missing values. The other choice is na.fail, which returns an error if any missing values are found.

Value

The Gehan estimator, the standard error of the Gehan estimator, the Z score and the p-value for testing the hypothesis of beta=0 based on Gehan estimation. The least-squares estimator, the standard error of the least-squares estimator, the Z score and the p-value for testing the hypothesis of beta=0. The covariance matrices of the Gehan estimator and the least-squares estimator, when cov is set to be T.

Author(s)

Zhezhen Jin; Arvin Satwani

References

Z. Jin, D. Y. Lin, Z. Ying, On least-squares regression with censored data, Biometrika 93 (2006) 147-161.

Examples

```
library(survival)
data(stanford2)
fit1<-lss(cbind(log10(time),status) ~ age + t5,data=stanford2,subset=!is.na(t5), mcsize=100,
trace=TRUE,gehanonly=FALSE,maxiter=10,tolerance=0.001)
fit2<-lss(cbind(log10(time),status) ~ age + I(age^2),data=stanford2,subset=!is.na(t5)&time>=100,
mcsize=5,trace=TRUE, gehanonly=FALSE,cov=TRUE)
```

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