Package 'Rwtdttt'

October 17, 2023

Type Package

Title Parametric Waiting Time Distribution estimation

Version 0.1.0

Author Sabrina Giometto, Malcolm Gillies, Henrik Støvring

Maintainer Henrik Støvring <hstov@health.sdu.dk>

Description Estimation of prescription durations and treatment probability based on the parametric Waiting Time Distribution.
Pharmacoepidemiologic databases contains information on medication dispensings at pharmacies. Studies using such data typically require some estimate of duration of treatment after a dispensing (known as the prescription duration), which can be estimated using the parametric Waiting Time Distribution.

License What license is it under?

Encoding UTF-8

LazyData true

RoxygenNote 7.2.3

Imports bbmle,
dplyr,
class

R topics documented:

dlnorm 1
plot,wtd,ANY-method 2
predict,wtd-method 2
ranwtdttt 3
wtdttt 4

Index **6**

`dlnorm` *The Lognormal Distribution*

Description

The Lognormal Distribution

Usage

```
dlnorm(x, logitp, mu, lnsigma, log = FALSE)
```

Arguments

x	vector of quantiles
logitp	how to describe this?
mu	mean
lnsigma	log of standard deviation
log	logical; if TRUE, probabilities p are given as log(p).

---

plot,wtd,ANY-method *Plot Diagnostics for a wtd Object (histogram vs parametric curve)*

Description

Plot Diagnostics for a wtd Object (histogram vs parametric curve)

Usage

```
## S4 method for signature 'wtd,ANY'
plot(object, x, y, ...)
```

Arguments

wtd	wtd object, typically result of wtdttt

---

predict,wtd-method *Predict Method for wtd Fits (probability or duration)*

Description

Predict Method for wtd Fits (probability or duration)

Usage

```
## S4 method for signature 'wtd'
predict(
  object,
  newdata = NULL,
  type = "dur",
  distrx = NULL,
  quantile = 0.8,
  se.fit = FALSE,
  na.action = na.pass,
  ...
)
```

Arguments

wtd	a fitted object of class inheriting from "wtd"

Value

A vector of predictions

---

ranwtdttt *Extension to wtdttt for random start times*

Description

Extension to wtdttt for random start times

Usage

```
ranwtdttt(
  form,
  parameters = NULL,
  data,
  id,
  start,
  end,
  reverse = F,
  nsamp = 1,
  subset,
  na.action = na.pass,
  init,
  control = NULL,
  ...
)
```

Arguments

form	an object of class "formula" (or one that can be coered to that class): a symbolic description of the model to be fitted. The details of the model specification are given under 'Details'
parameters	model formulae for distribution parameters
data	an optional data frame, list or environment (or object coercible by as.data.frame to a data frame) containing the variables in the model. If not found in data, the variables are taken from environment(formula), typically the environment from which wtdttt is called.
id	the name of the variable that identifies distinct individuals
start	start of observation window
end	end of observation window
reverse	logical; Fit the reverse waiting time distribution.
subset	an optional vector specifying a subset of observations to be used in the fitting process.

na.action	a function which indicates what should happen when the data contain NAs. The default is set by the na.action setting of options, and is na.fail if that is unset. The 'factory-fresh' default is na.omit. Another possible value is NULL, no action. Value na.exclude can be useful.
init	starting values for the parameters.
control	a list of parameters for controlling the fitting process.
...	further arguments passed to other methods.

Value

wtdttt returns an object of class "wtd" inheriting from "mle".

`wtdttt` *Fit a waiting time distribution model*

Description

Fit a waiting time distribution model

Usage

```
wtdttt(
  form,
  parameters = NULL,
  data,
  start,
  end,
  reverse = F,
  subset,
  na.action = na.pass,
  init,
  control = NULL,
  ...
)
```

Arguments

form	an object of class "formula" (or one that can be coered to that class): a symbolic description of the model to be fitted. The details of the model specification are given under 'Details'
parameters	model formulae for distribution parameters
data	an optional data frame, list or environment (or object coercible by as.data.frame to a data frame) containing the variables in the model. If not found in data, the variables are taken from environment(formula), typically the environment from which wtdttt is called.
start	start of observation window
end	end of observation window
reverse	logical; Fit the reverse waiting time distribution.

subset	an optional vector specifying a subset of observations to be used in the fitting process.
na.action	a function which indicates what should happen when the data contain NAs. The default is set by the na.action setting of options, and is na.fail if that is unset. The 'factory-fresh' default is na.omit. Another possible value is NULL, no action. Value na.exclude can be useful.
init	starting values for the parameters.
control	a list of parameters for controlling the fitting process.
...	further arguments passed to other methods.

Value

wtdttt returns an object of class "wtd" inheriting from "mle".

Index

dlnorm, 1

plot,wtd,ANY-method, 2
predict,wtd-method, 2

ranwtdttt, 3

wtdttt, 4