Package ‘mcount’

March 11, 2022

Type Package
Title Marginalized Count Regression Models
Version 1.0.0
Author Zhengyang Zhou [aut, cre]
Dateng Li [aut]
David Huh [aut]
Eun-Young Mun [aut]
Depends R (>= 3.6)
Maintainer Zhengyang Zhou <zhengyang.zhou@unthsc.edu>
Description Implementation of marginalized models for zero-inflated count data. This package provides a tool to implement an estimation algorithm for the marginalized count models, which directly makes inference on the effect of each covariate on the marginal mean of the outcome. The method involves the marginalized zero-inflated Poisson model described in Long et al. (2014) <doi:10.1002/sim.6293>.
License GPL-3
Encoding UTF-8
LazyData true
Imports bbmle, stats
NeedsCompilation no
RoxygenNote 7.1.2
Repository CRAN
Date/Publication 2022-03-11 10:30:05 UTC

R topics documented:

dat.pfi ................................................................. 2
mzip ................................................................. 2

Index 4
Example Data

Description
A data set from White et al. (2008), which is also described in Mun et al. (2015, 2022)

Usage
data(dat.pfi)

Format
The data frame contains 194 rows and 5 columns:
- **m0**: the number of standard alcohol drinks consumed at baseline
- **int_PF**: 1: received personalized feedback interventions (PFI); 0: did not receive PFI
- **year_new**: 1: first-year college student; 0: otherwise
- **race_new**: 1: white; 0: non-white
- **y**: the number of standard alcohol drinks consumed at post-intervention; the response variable

References


Estimating marginalized zero-inflated Poisson model

Description
Function to estimate a marginalized zero-inflated Poisson model
mzip

Usage

mzip(formula, data)

Arguments

formula an object of class "formula" (or one that can be coerced to that class): a symbolic description of the model to be fitted. A typical formula has the form response ~ terms where response is the count response vector and terms is a series of terms that predict response. For example, formula = y ~ x1 + x2 + x3. Do not write intercept in the formula; intercept will be automatically added in model fitting.

data a data frame containing variables in the model.

Details

Function returns an object of class "mle2" from bbmle R package. Apply summary function to the resulting object from the function to obtain more estimation information.

Value

Suffix _zero corresponds to the parameters associated with the structural zero rate part of a model.

Suffix _mean corresponds to the parameters associated with the overall mean, which evaluate the effects of covariates on the overall mean.

References


Examples

head(dat.pfi)

#Fit a marginalized zero-inflated Poisson model
res = mzip(formula = y ~ m0 + int_PF + year_new + race_new, data = dat.pfi)

#Obtain estimation results
bbmle::summary(res)
Index

* datasets
  dat.pfi, 2

dat.pfi, 2

mzip, 2