Package 'CWGEE'

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Type Package

Title Cluster weighted generalized estimating equations for clustered longitudinal data with informative cluster size

Version 0.0.0.9000

Description This package includes functions to fit a model using cluster weighted generalized estimating equations (CWGEE) for clustered longitudinal data with informative cluster size (ICS). For ordinal outcomes, use the function ordCWGEE. Function for binary outcomes is coming soon. A simulated example data set (perio) is available.

Depends R (>= 3.1.1), geepack, gee, MASS

License GPL-2

Encoding UTF-8

LazyData true

URL https://github.com/AyaMitani/CWGEE/

BugReports https://github.com/AyaMitani/CWGEE/issues

RoxygenNote 6.1.0

R topics documented:

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`ordCWGEE` *Cluster weighted GEE for ordinal clustered longitudinal data with informative cluster size.*

Description

Solves the generalized estimating equations for correlated ordinal responses in clustered longitudinal data assuming a cumulative link logit model for the marginal probabilities using the method of quasi-least squares.

Usage

```
ordCWGEE(formula, data, id, cluster.var, time.var, time.str)
```

Arguments

formula	a formula expression as for other regression models.
data	an optional data frame containing the variables provided in formula, id, cluster.var and time.var.
id	a vector that identifies the clusters.
cluster.var	a vector that identifies the unit within a cluster.
time.var	a vector that identifies the repeated observation of a unit.
time.str	a character string that indicates the temporal working correlation structure. Options include "ind" for independence, "ar1" for AR1, and "exch" for exchangeable.

Details

The data must be provided in case level or equivalently in 'long' format.

Value

Returns an object of the class "cwgee". This has components:

call	the matched call.
coefficients	the estimated regression parameter vector of the marginal model.
coef.names	the variable name of the coefficients.
robust.variance	the estimated "robust" covariance matrix.
robust.se	the estimated "robust" standard errors.
wald.chisq	the Wald Chi-square test statistic for coefficient estimates.
p.value	the p-value based on a Wald Chi-square test statistic that no covariates are statistically significant.
alpha	the estimated temporal correlation coefficient.
niter	the number of iterations the model took to converge.
time.str	the temporal working correlation structure assumed for the model.

Author(s)

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Examples

```
data(perio)
fitmod <- ordCWGEE(formula = cal ~ mets + edu + age + smoking, data = perio,
id = subject, cluster.var = tooth, time.var = visit, time.str = "ind")
summary(fitmod)
```

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