Package 'CWGEE'

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Type Package

Title What the Package Does (Title Case)

Version 0.1.0

Author Who wrote it

Maintainer The package maintainer <yourself@somewhere.net>

Description More about what it does (maybe more than one line)
Use four spaces when indenting paragraphs within the Description.

License What license is it under?

Encoding UTF-8

LazyData true

RoxygenNote 6.1.1

R topics documented:

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`mvoCWGEE` *Cluster weighted GEE for multiple correlated binary outcomes in cross-sectional data with informative cluster size.*

Description

Solves the cluster-weighted generalized estimating equations for correlated binary responses in clustered data assuming using the method of quasi-least squares.

Usage

```
mvoCWGEE(formula, data, cluster, resp.ind, unit, corr.str,
  common.slope = NULL)
```

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.
cluster	a vector that identifies the clusters.
resp.ind	a vector that indicates the responses.
unit	a vector that identifies the unit within a cluster.
corr.str	a character string that indicates the working correlation structure among the correlated responses. Options include "ind" for independence, "unstr" for unstructured, and "exch" for exchangeable.
common.slope	a character string indicating which variables in the model will have a common slope for each of the responses.

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.
corr.matrix	the estimated correlation matrix.
niter	the number of iterations the model took to converge.
corr.str	the working correlation structure assumed for the model.

Author(s)

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Examples

```
data(perio_base)
fitmod <- ordCWGEE(formula = y ~ smoking + age + edu, data = perio_base,
cluster = subject, resp.ind = outcome, unit = tooth,
common.slope = c("smoking", "edu"), corr.str = "exch")
summary(fitmod)
```

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

Description

Solves the cluster-weighted 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)

Aya Mitani

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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