Package 'dcm'

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Title Discrete Choice Model (DCM) for Nonignorable Missing Data

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Description Implements inverse probability weighting (IPW) with the logit discrete choice nonresponse model (LDCM).

Depends R (>= 3.4.1)

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Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

R topics documented:

`dcm` *Discrete Choice Model (DCM) for Nonignorable Missing Data*

Description

Implements inverse probability weighting (IPW) with the logit discrete choice nonresponse model (LDCM).

Usage

```
dcm(data_frame, regr_formula, regr_fam)
```

Arguments

`data_frame`	A data frame containing the variables in the regression model.
`regr_formula`	An object of class "formula" describing the regression model to be fitted
`regr_fam`	A description of the error distribution and link function to be used in the regression model. This can be a character string (e.g. "binomial" or "gaussian") naming a family function, same as the input to glm().

Details

This function implements IPW using LDCM weights as described in Tchetgen Tchetgen et al. (2017). The implementation is based on a default linear main effects model of the observed variables in the *r*-th missing data pattern for the log ratio of probabilities for observing the *r*-th missing data pattern versus the complete data.

Value

A "dcm" object containing the following items:

`CC`	An object of class "glm" from complete-case regression analysis.
`IPW`	The corresponding coefficient point estimate, bootstrap standard error, confidence interval and p-value from IPW analysis.
`DAT`	A data frame containing the variables in the regression model and the missing data pattern indicator R.

References

Tchetgen Tchetgen, E., Wang, L. and Sun, B. (2017). Discrete Choice Models for Nonmonotone Nonignorable Missing Data: Identification and Inference. Statistica Sinica (doi: 10.5705/ss.202016.0325).

Examples

```
#The 'airquality' dataset is included in R base and contains nonmonotone missing values
#in the variables Ozone (ppb) and Solar.R (lang).
out <- dcm(airquality, Temp~Ozone+Solar.R+Wind, gaussian)
```

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