Package 'lsm'

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Type Package

Title Estimation of the log Likelihood of the Saturated Model

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Description When the values of the outcome variable Y are either 0 or 1,
  the function lsm() calculates the estimation of the log likelihood
  in the saturated model.
  This model is characterized by Llinas (2006, ISSN:2389-8976) in section 2.3
  through the assumptions 1 and 2.
  The function LogLik() works (almost perfectly) when the number of independent
  variables K is high, but for small K it calculates wrong values in some cases.
  For this reason, when Y is dichotomous and the data are grouped in J populations,
  it is recommended to use the function lsm() because it works very well for all K.

Depends R (>= 3.5.0)

Imports stats, dplyr (>= 1.0.0), ggplot2 (>= 1.0.0)

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Contents

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chdage   *Coronary Heart Disease Study*

Description

Coronary Heart Disease Study

Usage

```
chdage
```

Format

A data frame with 100 observations on the following 3 variables.

ID identification code

AGE age in years

CHD presence (1) or absence (0) of evidence of significant coronary heart disease

References

Hosmer, D. (2013). Wiley Series in Probability and Statistics Ser. : Applied Logistic Regression (3). New York: John Wiley & Sons, Incorporated.

Examples

```
# data(chdage)
# maybe str(chdage) ; plot(chdage) ...
```

---

confint.lsm   *Confidence Intervals for* lsm *Objects*

Description

Provides a confint method for lsm objects.

Usage

```
## S3 method for class 'lsm'
confint(object, parm, level = 0.95, ...)
```

Arguments

object	The type of prediction required. The default is on the scale of the linear predictors. The alternative response gives the predicted probabilities.
parm	calculate confidence intervals for the coefficients
level	It gives the desired confidence level for the confidence interval. For example, a default value is level = 0.95, which will generate a 95 The alternative response gives the predicted probabilities.
...	further arguments passed to or from other methods.

Details

confint Method for lsm

The saturated model is characterized by the assumptions 1 and 2 presented in section 2.3 by Llinas (2006, ISSN:2389-8976).

Value

lsm returns an object of class "lsm".

An object of class "lsm" is a list containing at least the following components:

object	a lsm object
parm	calculate confidence intervals for the coefficients.
level	confidence levels
...	Additional arguments to be passed to methods.

Author(s)

Jorge Villalba Acevedo [cre, aut], (Universidad Tecnológica de Bolívar, Cartagena-Colombia).

References

[1] LLinás, H. J. (2006). Precisiones en la teoría de los modelos logísticos. Revista Colombiana de Estadística, 29(2), 239–265. https://revistas.unal.edu.co/index.php/estad/article/view/29310

[2] Hosmer, D.W., Lemeshow, S. and Sturdivant, R.X. (2013). Applied Logistic Regression, 3rd ed., New York: Wiley.

[3] Chambers, J. M. and Hastie, T. J. (1992). Statistical Models in S. Wadsworth & Brooks/Cole.

Examples

```
# datos <- lsm::icu
# attach(datos)
# modelo <- lsm(STA~AGE + as.factor(RACE), data=icu)
# confint(modelo)
```

---

icu   *icu*

Description

icu

Usage

icu

Format

A data frame with 200 observations on the following 21 variables.

ID a numeric vector

STA a numeric vector

AGE a numeric vector

GENDER a numeric vector

RACE a numeric vector

SER a numeric vector

CAN a numeric vector

CRN a numeric vector

INF a numeric vector

CPR a numeric vector

SYS a numeric vector

HRA a numeric vector

PRE a numeric vector

TYP a numeric vector

FRA a numeric vector

PO2 a numeric vector

PH a numeric vector

PCO a numeric vector

BIC a numeric vector

CRE a numeric vector

LOC a numeric vector

References

Hosmer, D. (2013). Wiley Series in Probability and Statistics Ser. : Applied Logistic Regression (3). New York: John Wiley & Sons, Incorporated.

Examples

```
# data(icu)
# maybe str(icu) ; plot(icu) ...
```

---

lowbwt   *lowbwt*

Description

lowbwt

Usage

```
lowbwt
```

Format

A data frame with 189 observations on the following 11 variables.

ID a numeric vector

SMOKE a numeric vector

RACE a numeric vector

AGE a numeric vector

LWT a numeric vector

BWT a numeric vector

LOW a numeric vector

PTL a numeric vector

HT a numeric vector

UI a numeric vector

FTV a numeric vector

References

Hosmer, D. (2013). Wiley Series in Probability and Statistics Ser. : Applied Logistic Regression (3). New York: John Wiley & Sons, Incorporated.

Examples

```
# data(lowbwt)
# maybe str(lowbwt) ; plot(lowbwt) ...
```

---

lsm   *Estimation of the log Likelihood of the Saturated Model*

Description

When the values of the outcome variable Y are either 0 or 1, the function lsm() calculates the estimation of the log likelihood in the saturated model. This model is characterized by Llinas (2006, ISSN:2389-8976) in section 2.3 through the assumptions 1 and 2. If Y is dichotomous and the data are grouped in J populations, it is recommended to use the function lsm() because it works very well for all K.

Usage

```
lsm(formula, family = binomial, data = environment(formula), ...)
```

Arguments

formula	An expression of the form y ~ model, where y is the outcome variable (binary or dichotomous: its values are 0 or 1).
family	an optional funtion for example binomial.
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 lsm() is called.
...	further arguments passed to or from other methods.

Details

Estimation of the log Likelihood of the Saturated Model

An expression of the form y ~ model is interpreted as a specification that the response y is modelled by a linear predictor specified symbolically by model (systematic component). Such a model consists of a series of terms separated by + operators. The terms themselves consist of variable and factor names separated by : operators. Such a term is interpreted as the interaction of all the variables and factors appearing in the term. Here, y is the outcome variable (binary or dichotomous: its values are 0 or 1).

Value

lsm returns an object of class "lsm".

An object of class "lsm" is a list containing at least the following components:

coefficients	Vector of coefficients estimations (intercept and slopes).
coef	Vector of coefficients estimations (intercept and slopes).
Std.Error	Vector of the coefficients's standard error (intercept and slopes).
ExpB	Vector with the exponential of the coefficients (intercept and slopes).
Wald	Value of the Wald statistic (with chi-squared distribution).
DF	Degree of freedom for the Chi-squared distribution.
P.value	P-value calculated with the Chi-squared distribution.
Log_Lik_Complete	Estimation of the log likelihood in the complete model.
Log_Lik_Null	Estimation of the log likelihood in the null model.
Log_Lik_Logit	Estimation of the log likelihood in the logistic model.
Log_Lik_Saturate	Estimation of the log likelihood in the saturate model.
Populations	Number of populations in the saturated model.
Dev_Null_vs_Logit	Value of the test statistic (Hypothesis: null vs logistic models).
Dev_Logit_vs_Complete	Value of the test statistic (Hypothesis: logistic vs complete models).
Dev_Logit_vs_Saturate	Value of the test statistic (Hypothesis: logistic vs saturated models).
Df_Null_vs_Logit	Degree of freedom for the test statistic's distribution (Hypothesis: null vs logistic models).
Df_Logit_vs_Complete	Degree of freedom for the test statistic's distribution (Hypothesis: logistic vs saturated models).
Df_Logit_vs_Saturate	Degree of freedom for the test statistic's distribution (Hypothesis: logistic vs saturated models).
P.v_Null_vs_Logit	P-value for the hypothesis test: null vs logistic models.
P.v_Logit_vs_Complete	P-value for the hypothesis test: logistic vs complete models.
P.v_Logit_vs_Saturate	P-value for the hypothesis test: logistic vs saturated models.
Logit	Vector with the log-odds.
p_hat_complete	Vector with the probabilities that the outcome variable takes the value 1, given the jth population (estimated with the complete model and without the logistic model).

p_hat_null	Vector with the probabilities that the outcome variable takes the value 1, given the jth population (estimated with the null model and without the logistic model).
p_j	Vector with the probabilities that the outcome variable takes the value 1, given the jth population (estimated with the logistic model).
odd	Vector with the values of the odd in each jth population.
OR	Vector with the values of the odd ratio for each coefficient of the variables.
z_j	Vector with the values of each Zj (the sum of the observations in the jth population).
n_j	Vector with the nj (the number of the observations in each jth population).
p_j_tilde	Vector with the estimation of each pj (the probability of success in the jth population) in the saturated model (without estimate the logistic parameters).
v_j	Vector with the variance of the Bernoulli variables in the jth population.
m_j	Vector with the expected values of Zj in the jth population.
V_j	Vector with the variances of Zj in the jth population.
V	Variance and covariance matrix of Z, the vector that contains all the Zj.
S_p	Score vector in the saturated model.
I_p	Information matrix in the saturated model.
Zast_j	Vector with the values of the standardized variable of Zj.
mcov	Variance and covariance matrix for coefficient estimates.
mcor	Correlation matrix for coefficient estimates.
Esm	Data frame with estimates in the saturated model. It contains for each population j: the value of the explanatory variables, nj, Zj, pj and Log-Likelihood Lj_tilde.
Elm	Data frame with estimates in the logistic model. It contains for each population j: the value of the explanatory variables, nj, Zj, pj, Log-Likelihood Lj, Logit_pj and the variance of logit (var.logit).
call	It displays the original call that was used to fit the model lsm.
data	data envarironment.
...	Additional arguments to be passed to methods.

Author(s)

Dr. rer. nat. Humberto LLinás Solano [aut] (Universidad del Norte, Barranquilla-Colombia); MSc. Omar Fábregas Cera [aut] (Universidad del Norte, Barranquilla-Colombia); MSc. Jorge Villalba Acevedo [cre, aut] (Universidad Tecnológica de Bolívar, Cartagena-Colombia).

References

[1] LLinás, H. J. (2006). Precisiones en la teoría de los modelos logísticos. Revista Colombiana de Estadística, 29(2), 239–265. https://revistas.unal.edu.co/index.php/estad/article/view/29310

[2] Hosmer, D.W., Lemeshow, S. and Sturdivant, R.X. (2013). Applied Logistic Regression, 3rd ed., New York: Wiley.

[3] Chambers, J. M. and Hastie, T. J. (1992). Statistical Models in S. Wadsworth & Brooks/Cole.

See Also

[lsm](lsm)

Examples

```
#library(lsm)

#1. AGE and Coronary Heart Disease (CHD) Status of 20 subjects:

   #AGE <- c(20,23,24,25,25,26,26,28,28,29,30,30,30,30,30,30,30,32,33,33)
   #CHD <- c(0,0,0,0,1,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0)
   #data <- data.frame (CHD,  AGE )
   #lsm(CHD ~ AGE , data)

#2.You can use the following notation:

   #lsm(y~., data)

#3. Other example:

   #y <- c(1, 0, 1, 0, 1, 1, 1, 1, 0, 0, 1, 1)
   #x1 <- c(2, 2, 2, 5, 5, 5, 5, 8, 8, 11, 11, 11)
   #data <- data.frame (y, x1)
   #ELAINYS <-lsm(y ~ x1, data)
   #summary(ELAINYS)

#4. Other example:

   #y <- as.factor(c(1, 0, 1, 0, 1, 1, 1, 1, 0, 0, 1, 1))
   #x1 <- as.factor(c(2, 2, 2, 5, 5, 5, 5, 8, 8, 11, 11, 11))
   #data <- data.frame (y, x1)
   #ELAINYS1 <-lsm(y ~ x1, family=binomial, data)
   #summary(ELAINYS1)
```

---

plot.lsm *Graphics Method for* lsm *Objects*

Description

Obtains graphics from a fitted lsm object.

Usage

```
## S3 method for class 'lsm'
plot(
  x,
  type = c("scatter", "probability", "Logit", "odds"),
  title = NULL,
  xlab = NULL,
```

```
    ylab = NULL,
    color = "red",
    size = 1.5,
    shape = 19,
    ...
)
```

Arguments

x   The LSM model object.

type   The type of plot to draw. Options are "scatter" for a scatter plot, "probability"
                for a probability plot, "Logit" for a plot related to logistic regression, and "odds"
                for a plot related to odds.

title   The title of the plot.

xlab   The label for the x-axis.

ylab   The label for the y-axis.

color   The color of the dots in the plot.

size   The size of the dots in the plot.

shape   The shape oof the dots in the plot.

...   Additional graphical arguments to be passed to ggplot.

Details

Gráfico de regresión logística

The saturated model is characterized by the assumptions 1 and 2 presented in section 2.3 by Llinas
(2006, ISSN:2389-8976).

Value

Un objeto ggplot. following components:

Author(s)

Jorge Villalba Acevedo [cre, aut], (Universidad Tecnológica de Bolívar, Cartagena-Colombia).

References

[1] LLinás, H. J. (2006). Precisiones en la teoría de los modelos logísticos. Revista Colombiana de
Estadística, 29(2), 239–265. https://revistas.unal.edu.co/index.php/estad/article/view/29310

[2] Hosmer, D.W., Lemeshow, S. and Sturdivant, R.X. (2013). Applied Logistic Regression, 3rd
ed., New York: Wiley.

[3] Chambers, J. M. and Hastie, T. J. (1992). Statistical Models in S. Wadsworth & Brooks/Cole.

Examples

```
#library(lsm)

#1. AGE and Coronary Heart Disease (CHD) Status of 100 subjects:

# library(lsm)
# library(tidyverse)
# datos <- lsm::chdage
# attach(datos)
# modelo <- lsm(CHD ~ AGE, data=datos)
# plot(modelo, type = "scatter")
# plot(modelo, type = "scatter", title  = "Villalba-llinas lsm")
# plot(modelo, type = "probability", xlab = "Elainys")
# plot(modelo, type = "Logit", color = "blue")
# plot(modelo, type = "odds", size = 3)
```

---

predict.lsm	*Predictions and Confidence intervals*

Description

Obtains predictions and confidence intervals from a fitted `lsm` object.

Usage

```
## S3 method for class 'lsm'
predict(
  object,
  newdata,
  type = c("link", "response", "odd", "OR"),
  level = 0.95,
  ...
)
```

Arguments

object	A fitted object of class `lsm`.
newdata	Optionally, a data frame in which to look for variables with which to predict.
type	The type of prediction required. The alternatives `response`, `link`, `odd` and `OR` give the predicted probabilities, logits, odds and odds ratios, repectively.
level	Confidence level to use (default is 0.95).
...	Further arguments passed to or from other methods.

Details

Predict Method for lsm Fits

If `newdata` is omitted, a matrix with the predictions for each observation is obtained. That is to say, the predictions are based on the data used for the fit. In that case how cases with missing values in the original fit is determined by the na.action argument of that fit. If na.action = na.omit omitted cases will not appear in the residuals, whereas if na.action = na.exclude they will appear (in predictions and standard errors), with residual value NA.

The saturated model is characterized by the assumptions 1 and 2 presented in section 2.3 by Llinas (2006, ISSN:2389-8976).

Value

The option `type =...` returns a matrix with one column containing the requested predictions. The option `interval =...` returns a matrix with 3 columns containing the lower and upper extremes of the requested interval and the corresponding predictions.

Author(s)

Dr. rer. nat. Humberto LLinás Solano [aut] (Universidad del Norte, Barranquilla-Colombia); MSc. Omar Fábregas Cera [aut] (Universidad del Norte, Barranquilla-Colombia); MSc. Jorge Villalba Acevedo [cre, aut] (Universidad Tecnológica de Bolívar, Cartagena-Colombia).

References

[1] LLinás, H. J. (2006). Precisiones en la teoría de los modelos logísticos. Revista Colombiana de Estadística, 29(2), 239–265. https://revistas.unal.edu.co/index.php/estad/article/view/29310

[2] Hosmer, D.W., Lemeshow, S. and Sturdivant, R.X. (2013). Applied Logistic Regression, 3rd ed., New York: Wiley.

[3] Chambers, J. M. and Hastie, T. J. (1992). Statistical Models in S. Wadsworth & Brooks/Cole.

Examples

```
#library(lsm)

#1. AGE and Coronary Heart Disease (CHD) Status of 20 subjects:

# library(lsm)
# library(tidyverse)
# datos <- lsm::chdage
# attach(datos)
# modelo <- lsm(CHD ~ AGE, data=datos)
# head(predict(modelo, type = "link"))
# predict(modelo,newdata=data.frame(AGE=35),type = "response")
# head(predict(modelo, type = "odd"))
# head(predict(modelo, type = "OR"))
```

pros	*pros*

Description

pros

Usage

pros

Format

A data frame with 380 observations on the following 9 variables.

ID a numeric vector

CAPSULE a numeric vector

AGE a numeric vector

RACE a numeric vector

DPROS a numeric vector

DCAPS a numeric vector

PSA a numeric vector

VOL a numeric vector

GLEASON a numeric vector

References

Hosmer, D. (2013). Wiley Series in Probability and Statistics Ser. : Applied Logistic Regression (3). New York: John Wiley & Sons, Incorporated.

Examples

```
# data(pros)
# maybe str(pros) ; plot(pros) ...
```

summary.lsm	*Summarizing Method for* lsm *Objects*

Description

Provides a summary method for lsm objects.

Usage

```
## S3 method for class 'lsm'
summary(object, ...)
```

Arguments

object	An expression of the form y ~ model, where y is the outcome variable (binary or dichotomous: its values are 0 or 1).
...	further arguments passed to or from other methods.

Details

summary Method for lsm

The saturated model is characterized by the assumptions 1 and 2 presented in section 2.3 by Llinas (2006, ISSN:2389-8976).

Value

An object of class "lsm" is a list containing at least the following components:

object	a lsm object
...	Additional arguments to be passed to methods.

Author(s)

Jorge Villalba Acevedo [cre, aut], (Universidad Tecnológica de Bolívar, Cartagena-Colombia).

References

[1] LLinás, H. J. (2006). Precisiones en la teoría de los modelos logísticos. Revista Colombiana de Estadística, 29(2), 239–265. https://revistas.unal.edu.co/index.php/estad/article/view/29310

[2] Hosmer, D.W., Lemeshow, S. and Sturdivant, R.X. (2013). Applied Logistic Regression, 3rd ed., New York: Wiley.

[3] Chambers, J. M. and Hastie, T. J. (1992). Statistical Models in S. Wadsworth & Brooks/Cole.

Examples

```
#Hosmer, D. (2013) page 3: Age and coranary Heart Disease (CHD) Status of 20 subjects:
#AGE <- c(20, 23, 24, 25, 25, 26, 26, 28, 28, 29, 30, 30, 30, 30, 30, 30, 30, 32, 33, 33)
#CHD <- c(0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0)
# data <- data.frame (CHD, AGE)
# Ela <- lsm(CHD ~ AGE, family = binomial, data)
# summary(Ela)
```

---

survey	*survey*

Description

The data was collected by applying a survey to a sample of university students.

Usage

```
survey
```

Format

A data frame (tibble) with 800 observations and 66 variables, which are described below:

Observation Student.

ID Identification code.

Gender Gender of the student, 1 = Female; 2 = Male.

Like What do you do most often in your free time? 1 = Network (Check social networks); 2 = TV (Watch TV).

Age Age of the student (in years), Numeric vector from 12.0 to 30.0

Smoke Do you smoke? 0 = No; 1 = Yes.

Height Height of the student (in meters), Numeric vector from 1.50 to 1.90.

Weight Weight of the student (in kilograms), numeric vector from 49 to 120.

BMI Body mass index of the student (kg/m^2), numeric vector from 14 to 54.

School Type of school students come from, 1 = Private; 2 = Public.

SES Socio-economic stratus of the student, 1 = Low; 2 = Medium; 3 = High.

Enrollment What was your type funding to study at the university? 1 = Credit; 2 = Scholarship; 3 = Savings.

Score Percentage of success in a certain test, numeric vector from 0 to 100%

MotherHeight Height of the mother of the student (in meters), numeric vector 1 = Short; 2 = Normal; 3 = Tall.

MotherAge Age of the mother of the student (in years), numeric vector from 39 to 89.

MotherCHD Has your mother had coronary heart disease? 0 = No; 1 = Yes.

FatherHeight Height of the father of the student (in meters), numeric vector 1 = Short; 2 = Normal; 3 = Tall.

FatherAge Age of the father of the student (in years), numeric vector from 39 to 89

FatherCHD Has your fatner had coronary heart diseasea, 1 = No; 2 = Yes.

Status Student's academic status at the end of the previous semester, 1 = Distinguished; 2 = Normal; 3 = Regular.

SemAcum Average of all final grades in the previous semester, numeric vector from 0.0 to 5.0

Exam1 First exam taken last semester, numeric vector from 0.0 to 5.0

Exam2 Second exam taken last semester, numeric vector from 0.0 to 5.0

Exam3 Third exam taken last semester, numeric vector from 0.0 to 5.0

Exam4 Last exam taken last semester, numeric vector from 0.0 to 5.0

ExamAcum Sum of the four exams mentioned above, numeric vector from 0.0 to 5.0

Definitive Average of the four exams mentioned above, numeric vector from 0.0 to 5.0

Expense Average of your monthly expenses (in 10 thousand Colombian pesos), numeric vector from 23.0 to 90.0

Income Father's monthly income (in millions of Colombian pesos), numeric vector from 1.0 to 3.0

Gas Value paid for gas service in the last month (in thousands of Colombian pesos), numeric vector from 15.0 to 28.0

Course What type of virtual classes do you prefer? 1 = Virtual; 2 = Face-to-face.

Law Opinion on a law, 1 = In disagreement; 2=Agree

Economic How was your family's economy during the pandemic? 1 = Bad; 2 = Regular; 3 = Good.

Race Does the student belong to an ethnic group? 1=None; 2= Ethnic

Region Region of the country where the student comes from, 1 = North; 2 = Center; 3 = South.

EMO1 During this period of preventative isolation, you frequently become nervous or restless for no reason, 1 = Never, 2 = Rarely; 3 = Almost always; 4 = Always.

EMO2 During this period of preventative isolation, you are often irritable, 1 = Never, 2 = Rarely; 3 = Almost always; 4 = Always.

EMO3 During this period of preventive isolation, you are often sad or despondent, 1 = Never, 2 = Rarely; 3 = Almost always; 4 = Always

EMO4 During this period of preventive isolation, you are often easily frightened, 1 = Never, 2 = Rarely; 3 = Almost always; 4 = Always

EMO5 During this period of preventative isolation, you often have trouble thinking clearly, 1 = Never, 2 = Rarely; 3 = Almost always; 4 = Always

GOAL1 I am concerned that I may not be able to understand the contents of my subjects this semester as thoroughly as I would like, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

GOAL2 It is important for me to do better than other students in my subjects this semester, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

GOAL3 I am concerned that I may not learn all that I can learn in my subjects this semester, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Pre_STAT1` I like statistics, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Pre_STAT2` I don't focus when I make problems statistics, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Pre_STAT3` I don't understand statistics much because of my way of thinking, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Pre_STAT4` I use statistics in everyday life, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Post_STAT1` I like statistics, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Post_STAT2` I don't focus when I make problems statistics, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Post_STAT3` I don't understand statistics much because of my way of thinking, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Post_STAT4` I use statistics in everyday life, 1 = Strongly agree; 2 = Disagree; 3 = Undecided; 4 = Agree; 5 = Strongly agree.

`Pre_IDARE1` I feel calm, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Pre_IDARE2` I feel safe, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Pre_IDARE3` I feel nervous, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Pre_IDARE4` I'm stressed, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Pre_IDARE5` I am comfortable, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Post_IDARE1` I feel calm, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Post_IDARE2` I feel safe, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Post_IDARE3` I feel nervous, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Post_IDARE4` I'm stressed, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`Post_IDARE5` I am comfortable, 1=Nothing; 2= Little; 3= Quite a bit; 4= A lot.

`PSICO1` I feel good, 1=Almost never; 2= Sometimes; 3= Frequently; 4= Almost always.

`PSICO2` I get tired quickly, 1=Almost never; 2= Sometimes; 3= Frequently; 4= Almost always.

`PSICO3` I feel like crying, 1=Almost never; 2= Sometimes; 3= Frequently; 4= Almost always.

`PSICO4` I would like to be as happy as others seem to be, 1=Almost never; 2= Sometimes; 3= Frequently; 4= Almost always.

`PSICO5` I lose opportunities for not being able to decide quickly, 1=Almost never; 2= Sometimes; 3= Frequently; 4= Almost always.

Details

survey

Examples

```
# data(survey)
# maybe str(survey) ; plot(survey) ...
```

uis	*uis*

Description

uis

Usage

uis

Format

A data frame with 575 observations on the following 9 variables.

ID a numeric vector
AGE a numeric vector
BECK a numeric vector
IVHX a numeric vector
NDRUGTX a numeric vector
RACE a numeric vector
TREAT a numeric vector
SITE a numeric vector
DFREE a numeric vector

References

Hosmer, D. (2013). Wiley Series in Probability and Statistics Ser. : Applied Logistic Regression (3). New York: John Wiley & Sons, Incorporated.

Examples

```
# data(uis)
# maybe str(uis) ; plot(uis) ...
```

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