Package 'simfit'

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Type Package

Title Test Model Fit with Simulation

Version 0.1.0

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Description Simulates data from model objects (e.g., from lm(), glm()), and plots this along with the original data to compare how well the simulated data matches the original data to determine model fit.

Imports magrittr

Depends R (>= 2.10), ggplot2

License GPL-3

Encoding UTF-8

LazyData true

RoxygenNote 7.1.1

Suggests testthat (>= 3.0.0)

Config/testthat/edition 3

NeedsCompilation no

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Repository CRAN

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Contents

pred.fit *Fit Simulated Data to a Model.*

Description

Fit Simulated Data to a Model.

Usage

```
pred.fit(model, xpred = NULL, ci = 0.95, npoints = "same")
```

Arguments

model	a model object, from (eg) lm
xpred	the predictor for the x axis on the graph
ci	confidence interval for fit curve (defaults to 0.95)
npoints	number of data points for fit line. Either specify a number, or "same" will return a simulation of the same size as the original dataset.

Value

predicted data

Examples

```
## Anwar M, Green JA, Norris P, et al
## Prospective daily diary study reporting of any and all symptoms in healthy
## adults in Pakistan: prevalence and #' response
## BMJ Open 2017;7:e014998
data(symptom)
glm.symptom <- glm(actual_help_days ~ symp_days_reported,
     family = "poisson", data = symptom)
pred.fit(glm.symptom)
```

pred.plot *Add model fit line (with SE) to GLM models (Poisson, negative binomial etc)*

Description

Add model fit line (with SE) to GLM models (Poisson, negative binomial etc)

Usage

```
pred.plot(model, xpred = NULL, ci = 0.95)
```

Arguments

model	a model object, from (eg) lm glm
xpred	the predictor to be plotted on the x axis
ci	value for confidence interval (defaults to 0.95)

Value

ggplot object with fit line

Examples

```
#' ## Anwar M, Green JA, Norris P, et al
## Prospective daily diary study reporting of any and all symptoms in healthy
## adults in Pakistan: prevalence and #' response
## BMJ Open 2017;7:e014998
data(symptom)
glm.symptom <- glm(actual_help_days ~ symp_days_reported,
     family = "poisson", data = symptom)
pred.plot(glm.symptom)
```

---

sim.plot *Plot simulated data from a GLM model*

Description

Plot simulated data from a GLM model

Usage

```
sim.plot(
  model,
  xpred = NULL,
  seed = NULL,
  fit.line = TRUE,
  ci = 0.95,
  npoints = "same",
  orig_jitter = 0.1,
  sim_jitter = 0.1
)
```

Arguments

model	a model object, from (eg) lm glm (Poisson, Negative binomial)
xpred	the predictor to be plotted on the x axis
seed	random seed so that simulation results are replicable
fit.line	if TRUE (default) adds fit line with SE

ci	passes confidence interval width for fit curve (defaults to 0.95)
npoints	number of data points to for fit line. Either specify a number, or "same" will return a simulation of the same size as the original dataset.
orig_jitter	amount of jitter to apply to original dataset (default 0.10)
sim_jitter	amount of jitter to apply to simulated data (default 0.10)

Value

ggplot object with simulated data plotted with original

Examples

```
## Anwar M, Green JA, Norris P, et al
## Prospective daily diary study reporting of any and all symptoms in healthy
## adults in Pakistan: prevalence and #' response
## BMJ Open 2017;7:e014998
data(symptom)
glm.symptom <- glm(actual_help_days ~ symp_days_reported,
     family = "poisson", data = symptom)
sim.plot(glm.symptom)
```

---

symptom *Responses to symptoms from a sample of the general population of Pakistan.*

Description

A dataset containing the age, gender, number of days on which symptoms were experienced, number of days on which help was sought, as well as measures of impulsivity and attitudes to medicines.

Usage

```
symptom
```

Format

A data frame with 53940 rows and 10 variables:

id participant ID, integer

age5 age in 5 year bins, (18,20) (20,25) (25,30) (30,35) (35,40) (40,45) (45,50) (50,55) (55,60) (60,65)

gender female, male, character

bmq_spec Pakistan adaption of Beliefs about Medicines Questionnaire (Specific) Stored as POMP score 0-100

bmq_necess Pakistan adaption of Beliefs about Medicines Questionnaire (Necessity) Stored as POMP score 0-100

bmq_concern Pakistan adaption of Beliefs about Medicines Questionnaire, (Concern) Stored as POMP score 0-100

bmq_general Pakistan adaption of Beliefs about Medicines Questionnaire, (General) Stored as POMP score 0-100

bis Pakistan adaption of Barratt Impuslivity Scale, Stored as POMP score 0-100

symp_days_reported Number of days on which symptoms were reported, Non-negative integer (days)

actual_help_days Number of days on which participants visited some type of health professional, Non-negative integer

Source

https://osf.io/4mjhq/

data from Anwar M, Green JA, Norris P, et al Prospective daily diary study reporting of any and all symptoms in healthy adults in Pakistan: prevalence and #' response BMJ Open 2017;7:e014998 doi: 10.1136/bmjopen2016014998

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