Package 'rnr'

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Type Package

Title Rosenbaum and Rubin Sensitivity

Version 0.2.1

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Description Apply sensitivity analysis for offline policy evaluation, as implemented in Jung et al. (2017) <doi:10.48550/arXiv.1702.04690> based on Rosenbaum and Rubin (1983) <http://www.jstor.org/stable/2345524>.

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Encoding UTF-8

LazyData true

Suggests testthat, covr

Imports purrr, assertthat

RoxygenNote 6.0.1

NeedsCompilation no

Repository CRAN

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Contents

rnr *rnr: A package for computing Rosenbaum and Rubin sensitivity*

Description

The rnr package provides functions for computing sensitivity of counterfactual estimates under assumptions of unobserved confounding.

sensitize *Generic sensitizing for Rosenbaum & Rubin sensitivity analysis*

Description

Generic sensitizing for Rosenbaum & Rubin sensitivity analysis

Usage

```
sensitize(obj, q, dp, d0, d1, ...)
```

Arguments

obj	data to sensitize
q	p(u = 1 | x)
dp	change in log-odds of treat = 1 if u = 1
d0	change in log-odds of response = 1 if treat = 0 and u = 1
d1	change in log-odds of response = 1 if treat = 1 and u = 1
...	additional arguments required to sensitize object

Value

a sensitized object, identical to, or inheriting the class of original obj

`sensitize.data.frame` *Compute the sensitivity-adjusted estimates of predicted outcome given treatment/control*

Description

Compute the sensitivity-adjusted estimates of predicted outcome given treatment/control

Usage

```
## S3 method for class 'data.frame'
sensitize(obj, q, dp, d0, d1, debug = FALSE, ...)
```

Arguments

`obj`	data frame to analyze; must include columns $treat: Observed (binary) treatment, e.g., bail_set $resp_ctl: Predicted probability of positive resp given control, $resp_trt: Predicted probability of positive resp given treatment, $p_trt: predicted probability of treatment
`q`	p(u = 1 | x)
`dp`	change in log-odds of treat = 1 if u = 1
`d0`	change in log-odds of response = 1 if treat = 0 and u = 1
`d1`	change in log-odds of response = 1 if treat = 1 and u = 1
`debug`	logical, whether or not to return columns of intermediate variables for debugging purposes
`...`	additional arguments are ignored

Value

A data frame with the columns resp_ctl and resp_trt updated according to the sensitivity parameters. If debug = TRUE, returned data frame will also contain columns of intermediate variables computed for sensitivity, appended with "__" (e.g., gamma__), with the original response estimates renamed as resp_trt_trt__ = resp_trt resp_ctl_ctl__ = resp_ctl

Examples

```
obj <- data.frame(treat = 0, resp_ctl = .2, resp_trt = .3, p_trt = .5)
sensitize(obj, q = .5, dp = log(2), d0 = log(2), d1 = log(2))
```

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