

Package ‘rnr’

April 16, 2018

Type Package

Title Rosenbaum and Rubin Sensitivity

Version 0.2.1

Author Jongbin Jung

Maintainer Jongbin Jung <me@jongbin.com>

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

License GPL-3 | file LICENSE

Encoding UTF-8

LazyData true

Suggests testthat, covr

Imports purrr, assertthat

RoxygenNote 6.0.1

NeedsCompilation no

Repository CRAN

Date/Publication 2018-04-16 18:46:24 UTC

R topics documented:

rnr	2
sensitize	2
sensitize.data.frame	3

Index	4
--------------	----------

rnr	<i>rnr: A package for computing Rosenbaum and Rubin sensitivity</i>
-----	---

Description

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

sensitize	<i>Generic sensitizing for Rosenbaum & Rubin sensitivity analysis</i>
-----------	---

Description

Generic sensitizing for Rosenbaum & Rubin sensitivity analysis

Usage

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

Arguments

<code>obj</code>	data to sensitize
<code>q</code>	$p(u = 1 x)$
<code>dp</code>	change in log-odds of treat = 1 if $u = 1$
<code>d0</code>	change in log-odds of response = 1 if treat = 0 and $u = 1$
<code>d1</code>	change in log-odds of response = 1 if treat = 1 and $u = 1$
<code>...</code>	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))
```

Index

rnr, [2](#)

rnr-package (rnr), [2](#)

sensitize, [2](#)

sensitize.data.frame, [3](#)