# Package ‘rnr’

October 14, 2022

**Type**  Package

**Title**  Rosenbaum and Rubin Sensitivity

**Version**  0.2.1

**Author**  Jongbin Jung

**Maintainer**  Jongbin Jung &lt;me@jongbin.com&gt;

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

**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:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>rnr</td>
<td>2</td>
</tr>
<tr>
<td>sensitize</td>
<td>2</td>
</tr>
<tr>
<td>sensitize.data.frame</td>
<td>3</td>
</tr>
</tbody>
</table>

**Index**  4
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

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
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

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