

Package ‘persuasio’

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Title Causal Inference on Persuasion Effects

Version 0.1.0

Description Provides estimation and inference methods for causal persuasion rates in the potential-outcomes framework of Jun and Lee (2023, Journal of Political Economy) <doi:10.1086/724114>. The package computes bounds and confidence intervals for average and local persuasion rates under data scenarios with binary outcomes, treatments, and instruments, and also when only the outcome and instrument are observed. It also provides functions for calculating bounds from summary statistics.

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URL <https://github.com/persuasio/persuasio-r>,
<https://github.com/persuasio/persuasio-stata>

BugReports <https://github.com/persuasio/persuasio-r/issues>

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Author Xinrui Chen [aut],
Sung Jae Jun [aut],
Sokbae Lee [aut, cre]

Maintainer Sokbae Lee <s13841@columbia.edu>

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aprlb	<i>Estimate the lower bound of the average persuasion rate</i>
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Description

Estimates the lower bound on the average persuasion rate (APR) following Jun and Lee (2023). Requires a binary outcome and a binary instrument. Covariates may optionally be supplied, in which case separate models are fit on the $z = 1$ and $z = 0$ subgroups and standard errors are not available. With covariates, there are two model specifications: `no_interaction` and `interaction`.

Usage

```
aprlb(y, z, x = NULL, model = "no_interaction", data)
```

Arguments

y	character, outcome variable name (binary 0/1)
z	character, instrument variable name (binary 0/1)
x	optional character, vector of covariates. Defaults to NULL.
model	model specification: "no_interaction" or "interaction". Defaults to <code>no_interaction</code> .
data	data.frame containing variables

Value

A list with:

- lb_coef: Lower bound estimate of the Average Persuasion Rate
- lb_se: Standard error of the estimate (NA under interaction model)
- ci_lb: Lower bound of the 95\
- ci_ub: Upper bound of the 95\
- outcome: Outcome variable name
- instrument: Instrument variable name
- covariates: Covariates used in estimation
- model: Model specification used
- n: Sample size
- class: S3 class label ("aprlb")

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

Examples

```
# Example 1: No covariates
aprlb(y = "voteddem_all", z = "post", data = GKB)

# Example 2: With covariate
aprlb(y = "voteddem_all", z = "post", x = "MZwave2", data = GKB)

# Example 3: Estimate by the covariate
gkb_groups <- split(GKB, GKB$MZwave2)
lapply(gkb_groups, function(sub_data) {
  aprlb(y = "voteddem_all", z = "post", data = sub_data)
})
```

aprub

Estimate the upper bound of the average persuasion rate

Description

Estimates the upper bound on the average persuasion rate (APR) following Jun and Lee (2023). Requires a binary outcome, a binary treatment, and a binary instrument. Covariates may optionally be supplied, in which case separate models are fit on the $z = 1$ and $z = 0$ subgroups and standard errors are not available. With covariates, there are two model specifications: no_interaction and interaction.

Usage

```
aprub(y, t, z, x = NULL, model = "no_interaction", data)
```

Arguments

y	character, outcome variable name (binary 0/1)
t	character, treatment variable name (binary 0/1)
z	character, instrument variable name (binary 0/1)
x	optional character, vector of covariates. Defaults to NULL.
model	character, model specification: "no_interaction" or "interaction". Defaults to no_interaction.
data	data.frame containing variables

Value

A list with:

- ub_coef: Upper bound estimate of APR
- ub_se: Standard error (NA if covariates are used)
- ci_lb: Lower bound of 95\
- ci_ub: Upper bound of 95\
- outcome: Outcome variable name
- treatment: Treatment variable name
- instrument: Instrument variable name
- covariates: Covariates used (if any)
- model: Model specification
- n: Sample size
- class: S3 class label ("aprub")

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

Examples

```
# Example 1: No covariates
aprub(y = "voteddem_all", t = "readsome", z = "post", data = GKB)

# Example 2: With covariate
aprub(y = "voteddem_all", t = "readsome", z = "post", x = "MZwave2", data = GKB)

# Example 3: Estimate by the covariate
gkb_groups <- split(GKB, GKB$MZwave2)
lapply(gkb_groups, function(sub_data) {
```

```
aprub(y = "voteddem_all", t = "readsome", z = "post", data = sub_data)
})
```

calc4persuasio	<i>Calculate the effect of persuasion when information on $Pr(y=1 z)$ and optimally $Pr(t=1 z)$ for each $z=0,1$ is available</i>
----------------	--

Description

calc4persuasio calculates the effect of persuasion when information on $Pr(y=1|z)$ and optimally $Pr(t=1|z)$ for each $z=0,1$ is available. The inputs are $y1$, $y0$, $e1$, and $e0$, corresponding to estimates of $P(y = 1 \mid z = 1)$, $P(y = 1 \mid z = 0)$, $P(t = 1 \mid z = 1)$, and $P(t = 1 \mid z = 0)$.

Usage

```
calc4persuasio(y1, y0, e1 = NULL, e0 = NULL)
```

Arguments

$y1$	mean outcome under $z = 1$
$y0$	mean outcome under $z = 0$
$e1$	(optional) mean treatment under $z = 1$
$e0$	(optional) mean treatment under $z = 0$

Details

The outputs of this command are the lower and upper bounds on the average persuasion rate (APR) as well as the lower and upper bounds on the local persuasion rate (LPR).

Value

An object of class `calc4persuasio`, a list containing:

<code>ap</code>	numeric vector: lower and upper bound
<code>lpr</code>	numeric vector: lower and upper bound
<code>inputs</code>	input values
<code>case</code>	case identifier

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

Examples

```
# Compute group means from the GKB dataset first
voteddem_all_0 <- mean(GKB$voteddem_all[GKB$post == 0], na.rm = TRUE)
voteddem_all_1 <- mean(GKB$voteddem_all[GKB$post == 1], na.rm = TRUE)

readsome_0 <- mean(GKB$readsome[GKB$post == 0], na.rm = TRUE)
readsome_1 <- mean(GKB$readsome[GKB$post == 1], na.rm = TRUE)

# Estimate bounds from summary statistics
calc4persuasio(
  y1 = voteddem_all_1,
  y0 = voteddem_all_0,
  e1 = readsome_1,
  e0 = readsome_0
)
```

GKB

GKB

Description

Dataset from Gerber, Karlan, and Bergan (2009). The study examines the effect of media exposure on political behavior via a randomized experiment offering households in Prince William County, VA free ten-week subscriptions to the Washington Post (liberal) or the Washington Times (conservative). The authors administered a baseline survey one month before the November 2005 Virginia gubernatorial election, and a follow-up survey a week after the election, covering individuals' voting behavior, candidate preference, political attitudes, and knowledge of recent news events.

Usage

GKB

Format

A data frame with 701 rows and 4 variables:

voteddem_all indicator (outcome): equal to 1 if the individual voted for the Democratic candidate

readsome indicator (treatment): equal to 1 if the individual read a newspaper at least several times per week

post indicator (instrument): equal to 1 if the individual received a free subscription to the Washington Post

MZwave2 indicator (covariate): equal to 1 if the individual was assigned to the second wave of the experiment

Details

To demonstrate functions in the this package, we use a simplified subset of Washington Post subscribers who responded to the follow-up survey (n = 701). The outcome is voting for the Democratic candidate in the 2005 Virginia gubernatorial election. The experiment ran in two waves a week apart due to capacity constraints, with wave assignment recorded in MZwave2. This data subset is also used in Jun and Lee (2023).

Source

Gerber, A., Karlan, D. and Bergan, D. (2009) Data and Code for: Does the Media Matter? A Field Experiment Measuring the Effect of Newspapers on Voting Behavior and Political Opinions. Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2019-10-12. [doi:10.3886/E113559V1](#)

References

Gerber, A., Karlan, D. and Bergan, D. (2009). Does the Media Matter? A Field Experiment Measuring the Effect of Newspapers on Voting Behavior and Political Opinions. American Economic Journal: Applied Economics, 1(2), 35-52. [doi:10.1257/app.1.2.35](#)

lpr4ytz	<i>Estimate the local persuasion rate</i>
---------	---

Description

Estimates the local persuasion rate (LPR) for compliers. Requires a binary outcome y, a binary treatment t, and a binary instrument z. Covariates x are optional. When covariates are absent, the function returns standard errors and confidence intervals. With covariates, model = "no_interaction" fits one regression with z and x; model = "interaction" fits separate models by instrument group and does not report analytical standard errors.

Usage

```
lpr4ytz(y, t, z, x = NULL, model = "no_interaction", data)
```

Arguments

y	character, outcome variable name (binary 0/1)
t	character, treatment variable name (binary 0/1)
z	character, instrument variable name (binary 0/1)
x	optional character, vector of covariates. Defaults to NULL.
model	character, model specification: "no_interaction" or "interaction". Defaults to no_interaction.
data	data.frame containing variables

Value

A list with:

- lpr: Estimated Local Persuasion Rate
- se: Standard error of the estimate (NA under interaction model)
- ci_lb: Lower bound of the confidence interval
- ci_ub: Upper bound of the confidence interval
- n: Sample size
- outcome: Outcome variable name
- treatment: Treatment variable name
- instrument: Instrument variable name
- covariates: Covariates used in estimation
- model: Model specification used
- case: Estimation case used ("interaction" or "no_interaction")
- class: S3 class label ("lpr4ytz")

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

Examples

```
# Example 1: No covariates
lpr4ytz(
  y = "voteddem_all",
  t = "readsome",
  z = "post",
  data = GKB
)

# Example 2: With covariate, no-interaction model
lpr4ytz(
  y = "voteddem_all",
  t = "readsome",
  z = "post",
  x = "MZwave2",
  data = GKB
)

# Example 3: With covariate, interaction model
lpr4ytz(
  y = "voteddem_all",
  t = "readsome",
  z = "post",
  x = "MZwave2",
  model = "interaction",
)
```

```

    data = GKB
  )

```

persuasio

Unified Interface for Causal Inference on Persuasion Effects

Description

Main wrapper for the **persuasio** package. Provides a unified entry point to all persuasion effect estimators. The function parses inputs and dispatches to the appropriate estimator based on `est`. The variables `y`, `t`, `z`, and `x` can be supplied in any order as explicitly named arguments. For `est = "apr"`, `"lpr"`, and `"calc"`, supplying `y` (outcome), `t` (treatment), and `z` (instrument) is mandatory. For `est = "yz"`, where the treatment is unobserved, only `y` and `z` are required, while the treatment argument `t` is ignored. Optional covariates can be supplied to `x` for any estimator mode.

Usage

```

persuasio(
  est = c("apr", "lpr", "yz", "calc"),
  y,
  z,
  t = NULL,
  x = NULL,
  data,
  ...
)

```

Arguments

<code>est</code>	character. Estimator type: • <code>"apr"</code>: Average persuasion rate bounds for binary outcome, treatment and instrument • <code>"lpr"</code>: Local persuasion rate bounds for binary outcome, treatment and instrument • <code>"yz"</code>: Average and local persuasion rate bounds using binary outcome and instrument only • <code>"calc"</code>: Average and local persuasion rate calculation from summary statistics
<code>y</code>	character, outcome variable name (binary 0/1)
<code>z</code>	character, instrument variable name (binary 0/1)
<code>t</code>	character, treatment variable name (binary 0/1). Required for <code>est = "apr"</code> , <code>"lpr"</code> , and <code>"calc"</code> . Defaults to <code>NULL</code> .
<code>x</code>	optional character, vector of covariates Defaults to <code>NULL</code> .
<code>data</code>	data.frame containing variables
<code>...</code>	additional arguments passed to downstream estimators

Details

This function only performs:

1. input parsing
2. method dispatch

Value

An object of class depending on est:

- "apr": APR estimation object
- "lpr": LPR estimation object
- "yz": reduced-form bound object
- "calc": summary-statistics-based object

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

See Also

[aprlb](#), [aprub](#), [lpr4ytz](#), [calc4persuasio](#)

Examples

```
# Example 1: Average persuasion rate (APR) with normal inference
persuasio(
  est = "apr",
  y = "voteddem_all",
  t = "readsome",
  z = "post",
  level = 0.80,
  method = "normal",
  data = GKB
)
```

```
# Example 2: Local persuasion rate (LPR) with normal inference
persuasio(
  est = "lpr",
  y = "voteddem_all",
  t = "readsome",
  z = "post",
  level = 0.80,
  method = "normal",
  data = GKB
)
```

```
# Example 3: Outcome-instrument bounds with covariate and bootstrap inference
persuasio(
```

```

    est = "yz",
    y = "voteddem_all",
    z = "post",
    x = "MZwave2",
    level = 0.80,
    model = "interaction",
    method = "bootstrap",
    nboot = 1000,
    data = GKB
  )

```

persuasio4ytz

Causal Inference on the Average Persuasion Rate

Description

Estimates the Average Persuasion Rate (APR) and constructs confidence intervals for binary outcome y , binary treatment t , and binary instrument z . Combines lower and upper bound estimation via [aprlb](#) and [aprub](#) with inference using either a Stoye (2009)-style asymptotic normal approximation or bootstrap resampling.

When covariates are absent, both inference methods are available. When covariates are present, `method = "bootstrap"` is recommended as standard errors are not available analytically.

This function combines:

- lower bound estimation via `aprlb()`
- upper bound estimation via `aprub()`
- inference using either Stoye-style normal approximation or bootstrap

Usage

```

persuasio4ytz(
  y,
  t,
  z,
  x = NULL,
  model = "no_interaction",
  method = "normal",
  level = 0.95,
  nboot = 50,
  data
)

```

Arguments

<code>y</code>	character, outcome variable name (binary 0/1)
<code>t</code>	character, treatment variable name (binary 0/1)
<code>z</code>	character, instrument variable name (binary 0/1)
<code>x</code>	optional character, vector of covariates. Defaults to NULL.
<code>model</code>	model specification: "no_interaction" or "interaction"
<code>method</code>	inference method: "normal" or "bootstrap"
<code>level</code>	confidence level (default 0.95)
<code>nboot</code>	number of bootstrap replications (default 50)
<code>data</code>	data.frame containing variables

Details

When `method = "normal"`, the function uses a Stoye (2009)-style correction for partially identified parameters. Standard errors from both `aprlb` and `aprub` are available only when there are no covariates.

When `method = "bootstrap"`, the function constructs confidence intervals from empirical quantiles of bootstrap replicates of the bound estimates. This is the recommended approach when covariates are present or when the sample size is small.

Value

An object of class `persuasio4ytz` containing:

lb_coef lower bound estimate
ub_coef upper bound estimate
ci_lb lower confidence bound
ci_ub upper confidence bound
level confidence level
method inference method used
n sample size
outcome Y variable name
treatment T variable name
instrument Z variable name
covariates covariates used
model model specification
nboot number of bootstrap draws (if applicable)

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

See Also

[aprlb](#), [aprub](#), [lpr4ytz](#), [persuasio](#)

Examples

```
# Example 1: No covariates, normal inference
persuasio4ytz(
  y      = "voteddem_all",
  t      = "readsome",
  z      = "post",
  method = "normal",
  level  = 0.80,
  data   = GKB
)

# Example 2: No covariates, bootstrap inference
persuasio4ytz(
  y      = "voteddem_all",
  t      = "readsome",
  z      = "post",
  method = "bootstrap",
  level  = 0.80,
  nboot  = 100,
  data   = GKB
)

# Example 3: With covariate, interaction model, bootstrap inference
persuasio4ytz(
  y      = "voteddem_all",
  t      = "readsome",
  z      = "post",
  x      = "MZwave2",
  model  = "interaction",
  method = "bootstrap",
  level  = 0.80,
  nboot  = 100,
  data   = GKB
)
```

Description

Estimates the Local Persuasion Rate (LPR) and constructs confidence intervals for binary outcome y , binary treatment t , and binary instrument z . Wraps [lpr4ytz](#) for point estimation and performs inference using either a standard normal approximation or bootstrap resampling.

The LPR measures the persuasion effect among compliers — those whose treatment status is switched by the instrument. Unlike the APR (see [persuasio4ytz](#)), the LPR is a point-identified quantity under the assumptions of Jun and Lee (2023), so a single confidence interval rather than a bound interval is returned.

When covariates are absent and `method = "normal"`, a delta-method standard error from [lpr4ytz](#) is used. When covariates are present, bootstrap inference is recommended and is required when analytical standard errors are unavailable, such as under `model = "interaction"`.

Usage

```
persuasio4ytz2lpr(
  y,
  t,
  z,
  x = NULL,
  model = "no_interaction",
  method = "normal",
  level = 0.95,
  nboot = 50,
  data
)
```

Arguments

<code>y</code>	character, outcome variable name (binary 0/1)
<code>t</code>	character, treatment variable name (binary 0/1)
<code>z</code>	character, instrument variable name (binary 0/1)
<code>x</code>	optional character, vector of covariates. Defaults to <code>NULL</code> .
<code>model</code>	model specification: <code>"no_interaction"</code> or <code>"interaction"</code>
<code>method</code>	inference method: <code>"normal"</code> or <code>"bootstrap"</code>
<code>level</code>	confidence level (default 0.95)
<code>nboot</code>	number of bootstrap replications (default 50)
<code>data</code>	<code>data.frame</code> containing variables

Details

When `method = "normal"`, the confidence interval is constructed as

$$\hat{\theta}_{LPR} \pm z_{\alpha/2} \cdot \hat{se}$$

where $\hat{se}$ is the delta-method standard error returned by [lpr4ytz](#). This requires `se` to be non-missing; if `se = NA`, the normal method is not available and `method = "bootstrap"` must be used.

When `method = "bootstrap"`, the confidence interval is constructed from empirical quantiles of bootstrap replications of the LPR estimate. For reproducible bootstrap results, call `set.seed()` before running this function.

Value

An object of class `persuasio4ytz2lpr` containing:

lpr local persuasion rate estimate
ci_lb lower confidence bound
ci_ub upper confidence bound
se standard error (NA if bootstrap)
level confidence level
method inference method used
n sample size
outcome Y variable name
treatment T variable name
instrument Z variable name
covariates covariates used
model model specification
nboot number of bootstrap replications (if applicable)

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](https://doi.org/10.1086/724114)

See Also

[lpr4ytz](#), [persuasio4ytz](#), [persuasio](#)

Examples

```
# Example 1: No covariates, normal inference
persuasio4ytz2lpr(
  y      = "voteddem_all",
  t      = "readsome",
  z      = "post",
  method = "normal",
  level  = 0.80,
  data   = GKB
)
```

```
# Example 2: No covariates, bootstrap inference
persuasio4ytz2lpr(
  y      = "voteddem_all",
  t      = "readsome",
  z      = "post",
  method = "bootstrap",
  level  = 0.80,
  nboot  = 100,
  data   = GKB
)
```

```

)

# Example 3: With covariate, interaction model, bootstrap inference
persuasio4ytz2lpr(
  y      = "voteddem_all",
  t      = "readsome",
  z      = "post",
  x      = "MZwave2",
  model  = "interaction",
  method = "bootstrap",
  level  = 0.80,
  nboot  = 100,
  data   = GKB
)

```

persuasio4yz

Causal Inference on Persuasion Effects Using Outcome and Instrument Only

Description

Estimates bounds on the Average Persuasion Rate (APR) using only a binary outcome y and a binary instrument z . Combines lower and upper bound estimation via [aprlb](#) and [aprub](#) under the YZ formulation with inference using either a Stoye (2009)-style normal approximation or bootstrap resampling.

This function is appropriate when treatment variables are unavailable or when the researcher wishes to bound the APR using only the reduced-form relationship between the instrument and the outcome. When treatment data are available, use [persuasio4ytz](#) instead.

When covariates are absent, both inference methods are available. When covariates are present, analytic standard errors are unavailable and `method = "bootstrap"` is required.

Usage

```

persuasio4yz(
  y,
  z,
  x = NULL,
  model = "no_interaction",
  method = "normal",
  level = 0.95,
  nboot = 50,
  data
)

```

Arguments

<code>y</code>	character, outcome variable name (binary 0/1)
<code>z</code>	character, instrument variable name (binary 0/1)
<code>x</code>	optional character, vector of covariates. Defaults to NULL.
<code>model</code>	model specification: "no_interaction" or "interaction"
<code>method</code>	inference method: "normal" or "bootstrap"
<code>level</code>	confidence level (default 0.95)
<code>nboot</code>	number of bootstrap replications (default 50)
<code>data</code>	data.frame containing variables

Details

When `method = "normal"`, the function applies a Stoye (2009)-style correction using the analytical standard error for the lower-bound estimator returned by [aprlb](#). The upper bound is fixed at 1. If the lower bound standard error is unavailable, use `method = "bootstrap"` instead.

When `method = "bootstrap"`, the function constructs the confidence interval from empirical quantiles of jointly resampled lower and upper bound estimates. For reproducible bootstrap results, call `set.seed()` before running this function.

Value

An object of class `persuasio4yz` containing:

lb_coef lower bound estimate
ub_coef upper bound estimate
ci_lb lower confidence bound
ci_ub upper confidence bound
level confidence level
method inference method used
n sample size
outcome Y variable name
instrument Z variable name
covariates covariates used
model model specification
nboot number of bootstrap replications (if applicable)

References

Sung Jae Jun and Sokbae Lee (2023). Identifying the Effect of Persuasion. *Journal of Political Economy*, 131(8). doi:[10.1086/724114](#)

See Also

[aprlb](#), [aprub](#), [persuasio4ytz](#), [persuasio](#)

Examples

```
# Example 1: No covariates, normal inference
persuasio4yz(
  y      = "voteddem_all",
  z      = "post",
  method = "normal",
  level  = 0.80,
  data   = GKB
)

# Example 2: No covariates, bootstrap inference
persuasio4yz(
  y      = "voteddem_all",
  z      = "post",
  method = "bootstrap",
  level  = 0.80,
  nboot  = 1000,
  data   = GKB
)

# Example 3: With covariate, interaction model, bootstrap inference
persuasio4yz(
  y      = "voteddem_all",
  z      = "post",
  x      = "MZwave2",
  model  = "interaction",
  method = "bootstrap",
  level  = 0.80,
  nboot  = 1000,
  data   = GKB
)
```

print.aprlb	<i>Print method for aprlb objects</i>
-------------	---------------------------------------

Description

Print method for aprlb objects

Usage

```
## S3 method for class 'aprlb'
print(x, digits = 4, ...)
```

Arguments

x	object of class "aprlb"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x. Called for its side effect of printing a formatted summary of the lower bound estimate on the average persuasion rate, including the estimate, standard error, and confidence interval.

print.aprub	<i>Print method for aprub objects</i>
-------------	---------------------------------------

Description

Print method for aprub objects

Usage

```
## S3 method for class 'aprub'
print(x, digits = 4, ...)
```

Arguments

x	object of class "aprub"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x. Called for its side effect of printing a formatted summary of the upper bound estimate on the average persuasion rate, including the estimate, standard error, and confidence interval.

print.calc4persuasio	<i>Print method for calc4persuasio</i>
----------------------	--

Description

Print method for calc4persuasio

Usage

```
## S3 method for class 'calc4persuasio'
print(x, digits = 4, ...)
```

Arguments

x	object of class "calc4persuasio"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x. Called for its side effect of printing a formatted summary of APR and LPR bounds computed from summary statistics, together with the input probabilities.

print.lpr4ytz	<i>Print method for lpr4ytz objects</i>
---------------	---

Description

Print method for lpr4ytz objects

Usage

```
## S3 method for class 'lpr4ytz'
print(x, digits = 4, ...)
```

Arguments

x	object of class "lpr4ytz"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x. Called for its side effect of printing a formatted summary of the local persuasion rate estimate, standard error, and confidence interval.

print.persuasio4ytz	<i>Print method for persuasio4ytz</i>
---------------------	---------------------------------------

Description

Print method for persuasio4ytz

Usage

```
## S3 method for class 'persuasio4ytz'
print(x, digits = 4, ...)
```

Arguments

x	object of class "persuasio4ytz"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x. Called for its side effect of printing a formatted summary of the average persuasion rate estimate.

```
print.persuasio4ytz2lpr
```

Print method for persuasio4ytz2lpr

Description

Print method for persuasio4ytz2lpr

Usage

```
## S3 method for class 'persuasio4ytz2lpr'
print(x, digits = 4, ...)
```

Arguments

x	object of class "persuasio4ytz2lpr"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x. Called for its side effect of printing a formatted summary of the local persuasion rate estimate.

```
print.persuasio4yz
```

Print method for persuasio4yz

Description

Print method for persuasio4yz

Usage

```
## S3 method for class 'persuasio4yz'
print(x, digits = 4, ...)
```

Arguments

x	object of class "persuasio4yz"
digits	number of decimal places to display (default is 4)
...	unused

Value

Invisibly returns x . Called for its side effect of printing a formatted summary of the average persuasion rate estimate.

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