Package 'strat'

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Type Package

Title An Implementation of the Stratification Index

Version 0.1

Description An implementation of the stratification index proposed by Zhou (2012) <DOI:10.1177/0081175012452207>.
The package provides two functions, srank, which returns stratum-specific information, including population share and average percentile rank; and strat, which returns the stratification index and its approximate standard error.
When a grouping factor is specified, strat also provides a detailed decomposition of the overall stratification into between-group and within-group components.

Depends R (>= 3.3.1),

Imports Hmisc (>= 4.0-0), Rcpp, stats

LinkingTo Rcpp, RcppArmadillo

License GPL (>= 3)

LazyData TRUE

RoxygenNote 5.0.1

Suggests testthat

URL https://github.com/xiangzhou09/strat

BugReports https://github.com/xiangzhou09/strat/issues

NeedsCompilation yes

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R topics documented:

`cpsmarch2015` *A Subset of March CPS 2015 Sample*

Description

A dataset containing income, big class, microclass, and education of 14,358 male respondents from March CPS 2015

Usage

```
cpsmarch2015
```

Format

A data frame with 14358 rows and 5 variables:

income personal market income, in US dollars

big_class big class membership

micro_class microclass membership

education educational attainment

weight sampling weight given by CPS

`print.srank` *Print an object of class* `srank`

Description

Print an object of class `srank`

Usage

```
## S3 method for class 'srank'
print(x, digits = 3, ...)
```

Arguments

`x`	An object of class `srank`
`digits`	the number of significant digits to use when printing
`...`	further arguments passed to or from other methods

print.strat *Print an object of class* strat

Description

Print an object of class strat

Usage

```
## S3 method for class 'strat'
print(x, digits = 3, ...)
```

Arguments

x	An object of class strat
digits	the number of significant digits to use when printing
...	further arguments passed to or from other methods

srank *Ranking strata.*

Description

Ranking strata according to the average percentile rank of members in each stratum.

Usage

```
srank(outcome, strata, weights = NULL, group = NULL)
```

Arguments

outcome	A numeric vector of outcome.
strata	A vector of length(outcome) indicating strata membership. The elements are coerced to factors by factor.
weights	An optional vector of weights.
group	An optional grouping factor.

Value

An object of class srank.

raw	a data frame consisting of complete cases of all inputs.
summary	a data frame of stratum-specific information, including name, population share, and average percentile rank.

Examples

```
strata_info <- with(cpsmarch2015, srank(income, big_class,
 weights = weight, group = education))
print(strata_info, digits = 3)
```

`strat` *Stratification index.*

Description

`strat` computes the stratification index proposed in Zhou (2012). When `group` is specified, it also returns between-group and within-group components of the overall stratification.

Usage

```
strat(outcome, strata, weights = NULL, ordered = FALSE, group = NULL)
```

Arguments

`outcome`	A numeric vector of outcome.
`strata`	A vector of `length(outcome)` indicating strata membership. The elements are coerced to factors by `factor`.
`weights`	An optional vector of weights.
`ordered`	Logical. If `TRUE` strata are pre-ordered ascendingly.
`group`	An optional grouping factor. If specified, `strat` also returns between-group and within-group components of the overall stratification.

Value

An object of class `strat`.

`overall`	a vector of two, giving computed stratification index and approximate standard error.
`strata_info`	a data frame of stratum-specific information, including name, population share, and average percentile rank.
`decomposition`	between-group and within-group components of the overall stratification.
`within_group`	within-group indices of stratification by group.

References

Zhou, Xiang. 2012. "A Nonparametric Index of Stratification." Sociological Methodology, 42(1): 365-389.

Examples

```
s <- with(cpsmarch2015, strat(income, big_class,
 weights = weight, group = education))
print(s, digits = 4)
print(s$strata_info, digits = 4)
print(s$within_group, digits = 4)
```

Index