Package 'strat'

November 23, 2016

Type Package

Title An Implementation of the Stratification Index

Version 0.1

Description An implementation of the stratification index pro-
posed 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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Repository CRAN

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R topics documented:

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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

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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

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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

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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)
```

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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)
```

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