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strAlloc

From PracTools v1.2.1 by Richard Valliant

Percentile

99.99th

Allocate A Sample To Strata

Compute the proportional, Neyman, cost-constrained, and variance-constrained allocations in a stratified simple random sample.

Keywords methods, survey

Usage

Arguments

n.tot fixed total sample size

Nh vector of population stratum sizes (N_h) or pop stratum proportions (W_h)

Sh stratum unit standard deviations (S_h), required unless alloc = "prop"

cost total variable cost

ch vector of costs per unit in stratum $h\left(c_{h}\right)$

V0 fixed variance target for estimated mean

CV0 fixed CV target for estimated mean

ybarU population mean of $y(\bar{y}_{IJ})$

alloc type of allocation; must be one of "prop", "neyman", "totcost", "totvar"

Details

API documentation

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the variance of an estimated mean. alloc="totcost" computes the allocation of a fixed total sample size n.tot, to the strata that minimizes the variance of an estimated mean subject to the fixed total cost . alloc="totvar" computes the allocation that minimizes total cost subject to the target coefficient of variation, cvo, or the target variance, vo, of the estimated mean.

Value

```
For proportional allocation, a list with values:
```

```
alloc
```

```
type of allocation: "prop" , "neyman" , "totcost" , "totvar"
```

Nh

vector of population sizes (N_h) or pop stratum proportions (W_h)

nh

vector of stratum sample sizes

"nh/n"

proportion of sample allocated to each stratum

For other allocations, the three components above plus:

Sh

stratum unit standard deviations (S_h)

"anticipated SE of estimated mean"

Anticipated SE of the estimated mean for the computed allocation

References

Cochran, W.G. (1977). Sampling Techniques. John Wiley & Sons.

Valliant, R., Dever, J., Kreuter, F. (2013, chap. 3). *Practical Tools for Designing and Weighting Survey Samples*. Springer.

See Also

```
nCont , nLogOdds , nProp , nPropMoe , nWilson
```

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```
# NOT RUN {
# Neyman allocation
Nh <- c(215, 65, 252, 50, 149, 144)
Sh <- c(26787207, 10645109, 6909676, 11085034, 9817762, 44553355)
strAlloc(n.tot = 100, Nh = Nh, Sh = Sh, alloc = "neyman")
# cost constrained allocation
ch <- c(1400, 200, 300, 600, 450, 1000)
strAlloc(Nh = Nh, Sh = Sh, cost = 100000, ch = ch, alloc = "totcost")
# allocation with CV target of 0.05
strAlloc(Nh = Nh, Sh = Sh, CV0 = 0.05, ch = ch, ybarU = 11664181, alloc = "totvar")
# }</pre>
```

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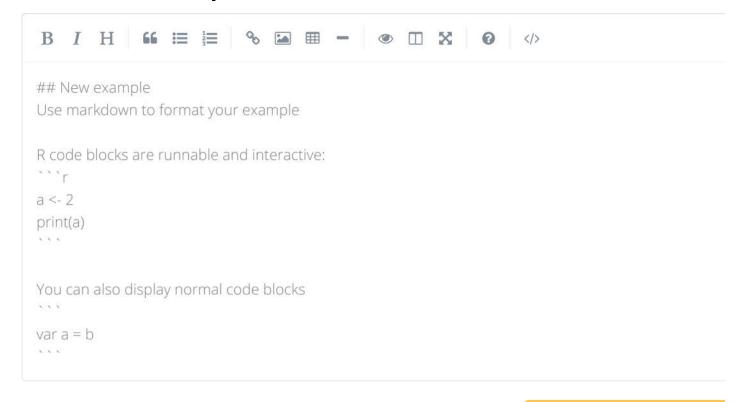
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