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# strAlloc

From [PracTools v1.2.1](#)
by [Richard Valliant](#)

99.99th
Percentile

## 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

```
strAlloc(n.tot = NULL, Nh = NULL, Sh = NULL, cost = NULL, ch = NULL,
      V0 = NULL, CV0 = NULL, ybarU = NULL, alloc)
```

## 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 $h$ ($c_h$)

**V0**          fixed variance target for estimated mean

**CV0**          fixed CV target for estimated mean

**ybarU**          population mean of $y$ ($\bar{y}_U$)

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

## Details

⚙ **API documentation**          Created by [DataCamp.com](#)

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, `cv0` , or the target variance, `v0` , 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")
# }
```

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```
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a <- 2
print(a)
```


You can also display normal code blocks
```
var a = b
```
```

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