

Package ‘rgsp’

July 23, 2025

Type Package

Title Repetitive Group Sampling Plan Based on Cpk

Version 0.2.0

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Description

Functions to calculate Sample Number and Average Sample Number for Repetitive Group Sampling Plan Based on Cpk as given in Aslam et al. (2013) (<[DOI:10.1080/00949655.2012.663374](https://doi.org/10.1080/00949655.2012.663374)>).

Depends R (>= 3.1)

Imports dplyr, magrittr, tibble

License GPL-2

URL <https://github.com/myaseen208/rgsp>,
<https://myaseen208.github.io/rgsp/>

Encoding UTF-8

LazyData true

RoxygenNote 6.1.0

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Suggests testthat

NeedsCompilation no

Repository CRAN

Date/Publication 2018-10-26 07:40:02 UTC

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rgsp	<i>Repetitive Group Sampling Plan Based on Cpk</i>
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Description

The rgsp package provides functionalities to calculate Sample Number and Average Sample Number for a Repetitive Group Sampling Plan based on Cpk as given in Aslam et al. (2013).

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References

Aslam, M., Wu, C., Jun, C., Azam, M. and Itay, N. (2013). Developing a variables repetitive group sampling plan based on process capability index Cpk with unknown mean and variance. *Journal of Statistical Computation and Simulation*. **83**(8):1507-1517. (<https://www.tandfonline.com/doi/abs/10.1080/00949655.2012.6>)

rgsp_asym1	<i>Repetitive Group Sampling Plan Based on Cpk under asymmetric Case 1</i>
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Description

Calculates Sample Number and Average Sample Number for Repetitive Group Sampling Plan based on Cpk under asymmetric case 1 as given in Aslam et al. (2013)

Usage

```
## Default S3 method:  
rgsp_asym1(.p1, .p2, .alpha, .beta, .nums, .rep)
```

Arguments

.p1	Acceptable Quality Level (AQL) Probability
.p2	Limiting Quality Level (LQL) Probability
.alpha	Producer's alpha-risk
.beta	Consumer's beta-risk
.nums	Number of samples with replacement at each iteration
.rep	Number of iterations

Value

Sample Number and Average Sample Number

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References

Aslam, M., Wu, C., Jun, C., Azam, M. and Itay, N. (2013). Developing a variables repetitive group sampling plan based on process capability index Cpk with unknown mean and variance. *Journal of Statistical Computation and Simulation*. **83**(8):1507-1517. (<https://www.tandfonline.com/doi/abs/10.1080/00949655.2012.6>)

Examples

```
rgsp_asym1(
  .p1      = 0.001
, .p2      = 0.003
, .alpha   = 0.050
, .beta    = 0.100
, .nums    = 10000
, .rep     = 10 # 1000
)
```

rgsp_asym2	<i>Repetitive Group Sampling Plan Based on Cpk under asymmetric Case 2</i>
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Description

Calculates Sample Number and Average Sample Number for Repetitive Group Sampling Plan based on Cpk under asymmetric case 2 as given in Aslam et al. (2013)

Usage

```
## Default S3 method:
rgsp_asym2(.p1, .p2, .alpha, .beta, .nums, .rep)
```

Arguments

.p1	Acceptable Quality Level (AQL) Probability
.p2	Limiting Quality Level (LQL) Probability
.alpha	Producer's alpha-risk
.beta	Consumer's beta-risk
.nums	Number of samples with replacement at each iteration
.rep	Number of iterations

Value

Sample Number and Average Sample Number

Author(s)

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References

Aslam, M., Wu, C., Jun, C., Azam, M. and Itay, N. (2013). Developing a variables repetitive group sampling plan based on process capability index Cpk with unknown mean and variance. *Journal of Statistical Computation and Simulation*. **83**(8):1507-1517. (<https://www.tandfonline.com/doi/abs/10.1080/00949655.2012.6>)

Examples

```
rgsp_asym2(
  .p1      = 0.001
, .p2      = 0.003
, .alpha   = 0.050
, .beta    = 0.100
, .nums    = 10000
, .rep     = 10 # 1000
)
```

rgsp_sym

*Repetitive Group Sampling Plan Based on Cpk under Symmetric Case***Description**

Calculates Sample Number and Average Sample Number for Repetitive Group Sampling Plan based on Cpk under symmetric case as given in Aslam et al. (2013)

Usage

```
## Default S3 method:
rgsp_sym(.p1, .p2, .alpha, .beta, .nums, .rep)
```

Arguments

.p1	Acceptable Quality Level (AQL) Probability
.p2	Limiting Quality Level (LQL) Probability
.alpha	Producer's alpha-risk
.beta	Consumer's beta-risk
.nums	Number of samples with replacement at each iteration
.rep	Number of iterations

Value

Sample Number and Average Sample Number

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References

Aslam, M., Wu, C., Jun, C., Azam, M. and Itay, N. (2013). Developing a variables repetitive group sampling plan based on process capability index Cpk with unknown mean and variance. *Journal of Statistical Computation and Simulation*. **83**(8):1507-1517. (<https://www.tandfonline.com/doi/abs/10.1080/00949655.2012.6>)

Examples

```
rgsp_sym(  
  .p1      = 0.0010  
  , .p2      = 0.0020  
  , .alpha  = 0.0500  
  , .beta   = 0.1000  
  , .nums   = 10000  
  , .rep    = 10 # 1000  
)
```

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