

Package ‘rgsp’

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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

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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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