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>).

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

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R topics documented:

`rgsp` *Repetitive Group Sampling Plan Based on Cpk*

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` *Repetitive Group Sampling Plan Based on Cpk under asymmetric Case 1*

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

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Examples

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

`rgsp_asym2` *Repetitive Group Sampling Plan Based on Cpk under asymmetric Case 2*

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

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

Index