Package 'intrinsicKappa'

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Title Sample Size Planning Based on Intrinsic Kappa Value

Version 0.1

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Description Kappa statistics is one of the most used methods to evaluate the effectiveness of inpsections based on attribute assessments in industry. However, its estimation by available methods does not provide its ``real" or ``intrinstic" value. This package provides functions for the computation of the intrinsic kappa value as it is described in: Rafael Sanchez-Marquez, Frank Gerhorst and David Schindler (2023) ``Effectiveness of quality inspections of attributive characteristics – A novel and practical method for estimating the "intrinsic" value of kappa based on alpha and beta statistics." <doi:10.1016/j.cie.2023.109006>.

License GPL (>= 3)

Encoding UTF-8

Depends R (>= 4.2.0)

Imports stats

Suggests knitr, rmarkdown, utils

VignetteBuilder knitr

RoxygenNote 7.2.3

NeedsCompilation no

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Repository CRAN

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R topics documented:

intrinsicKappa-package

Sample Size Planning Based on Intrinsic Kappa Value

Description

Providing functions for the computation of the intrinsic kappa value.

Author(s)

David Schindler <dv.schindler@gmail.com>, Rafael Sanchez-Marquez, Frank Gerhorst

References

R. Sanchez-Marquez, F. Gerhorst and D. Schindler (2023) "Effectiveness of quality inspections of attributive characteristics – A novel and practical method for estimating the "intrinsic" value of kappa based on alpha and beta statistics." *Computers & Industrial Engineering*, 109006.

See Also

For the computation of the intrinsic kappa value, see `intrinsicKappa`.

computeStat

Compute Statistics

Description

Compute Statistics

Usage

```
computeStat(n1, n2, alpha)
```

Arguments

`n1`	integer
`n2`	integer
`alpha`	one-sided significance level

`intrinsicKappa` *Intrinsic Kappa*

Description

Intrinsic Kappa

Usage

```
intrinsicKappa(M, alpha = 0.05, alpha_adjusted = TRUE)
```

Arguments

`M`	matrix to be assessed
`alpha`	one-sided significance level
`alpha_adjusted`	logical, whether the significance level shall be adjusted

Details

Computation of intrinsic kappa with a dichotomous response and known relation of the input frequencies.

Value

Intrinsic kappa value

References

R. Sanchez-Marquez, F. Gerhorst and D. Schindler (2023) "Effectiveness of quality inspections of attributive characteristics – A novel and practical method for estimating the “intrinsic” value of kappa based on alpha and beta statistics." Computers & Industrial Engineering, 109006.

Examples

```
M <- matrix(c(2375, 25, 10, 2390), ncol = 2)
rownames(M) <- c('ok-rating', 'nok-rating')
colnames(M) <- c('ok-standard', 'nok-standard')
alpha <- 0.05
alpha_adjusted <- FALSE
intrinsicKappa(M, alpha, alpha_adjusted)
```

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