

# Package: intrinsicKappa (via r-universe)

September 12, 2024

**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 inspections based on attribute assessments in industry. However, its estimation by available methods does not provide its "real" or "intrinsic" 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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intrinsicKappa-package

*Sample Size Planning Based on Intrinsic Kappa Value*

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### 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](#).

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computeStat

*Compute Statistics*

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### Description

Compute Statistics

### Usage

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

### Arguments

n1	integer
n2	integer
alpha	one-sided significance level

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intrinsicKappa	<i>Intrinsic Kappa</i>
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**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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