

Package ‘IP’

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Type Package

Title Index of Performance (IP) for the Rugby Attack Assessment Instrument (RAAI)

Version 0.6

Date 2013-09-04

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Description This package estimates the IP which is a measure of the performance of a rugby team in a 5 vs. 5 situation, based upon the observation of the ball carrier’s actions. These actions are weighted according to their tactical relevance. In addition, the package also estimates the IP difference between two trials. Point estimate and significance measures (confidence interval and p-value) are provided.

License GPL (>=2)

R topics documented:

IP-package	1
compareIP	2
computeIP	3

IP-package	<i>Index of Performance (IP) for the Rugby Attack Assessment Instrument (RAAI).</i>
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Description

This package estimates the IP which is a measure of the performance of a rugby team in a 5 vs. 5 situation, based upon the observation of the ball carrier’s actions. These actions are weighted according to their tactical relevance. In addition, the package also estimates the IP difference between two trials. Point estimate and significance measures (confidence interval and p-value) are provided.

Details

Package: IP
 Type: Package
 Version: 0.6
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 License: GPL (>=2)

Author(s)

Jose Barrera-Gomez.

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References

Llobet B, Lopez-Ros V, Barrera-Gomez J, Comino J. The Rugby Attack Assessment Instrument (RAAI): validation and preliminary results.

compareIP

Estimation of the difference of the IP scores between two trials.

Description

This function computes the difference of the IP scores between two trials. In addition, confidence interval is provided.

Usage

```
compareIP(w, f1, f2, conf = 95, nsim = 5000, seed = 4321)
```

```
## Default S3 method:
```

```
compareIP(w, f1, f2, conf = 95, nsim = 5000, seed = 4321)
```

```
## S3 method for class 'compareIP'
```

```
print(x, digits = 3, ...)
```

Arguments

w	a numerical vector with the weights of the actions.
f1	a numerical vector with the frequencies of the actions from trial 1.
f2	a numerical vector with the frequencies of the actions from trial 2.
conf	the percentage confidence level for the confidence interval. Default is 95.
nsim	the number of simulations for computing the parametric bootstrap confidence interval, based on the Poisson distribution. Default is 5000.
seed	the seed for reproducibility of the confidence interval. Default is 4321.
x	an object of class compareIP.
digits	number of decimal places to round printed results. Default is 3.
...	further parameters for the print function.

Details

See references for a detailed definition of the IP.

Value

IPdiff a list containing the IP difference, confidence interval, confidence level and number of simulations.

Author(s)

Jose Barrera-Gomez.

References

Llobet B, Lopez-Ros V, Barrera-Gomez J, Comino J. The Rugby Attack Assessment Instrument (RAAI): validation and preliminary results.

See Also

[computeIP](#).

Examples

```
# Weights:
myWeights <- c(8, 7, 5, 3, 2, 1, 0, -1, -2, -3, -4, -5, -6, -7)

# Observed frequencies:
freq1 <- c(9, 0, 3, 5, 10, 63, 7, 9, 0, 6, 1, 1, 0, 0)
freq2 <- c(12, 0, 7, 4, 12, 51, 6, 5, 0, 7, 1, 0, 0, 0)

# IP results at 95% confidence level:
myComparison <- compareIP(w = myWeights, f1 = freq1, f2 = freq2)
myComparison
```

computeIP

Estimation of the IP score for a given trial.

Description

This function computes the IP for a given trial. In addition, a confidence interval is provided.

Usage

```
computeIP(w, f, conf = 95, nsim = 5000, seed = 4321)

## Default S3 method:
computeIP(w, f, conf = 95, nsim = 5000, seed = 4321)

## S3 method for class 'computeIP'
print(x, digits = 3, ...)
```

Arguments

w	a numerical vector with the weights of the actions.
f	a numerical vector with the frequencies of the actions.
conf	the percentage confidence level for the confidence interval. Default is 95.
nsim	the number of simulations for computing the parametric bootstrap confidence interval, based on the Poisson distribution. Default is 5000.
seed	the seed for reproducibility of the confidence interval. Default is 4321.
x	an object of class computeIP.
digits	number of decimal places to round printed results. Default is 3.
...	further parameters for the print function.

Details

See references for a detailed definition of the IP.

Value

IP	a list containing the IP score, confidence interval, confidence level and number of simulations.
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Author(s)

Jose Barrera-Gomez.

References

Llobet B, Lopez-Ros V, Barrera-Gomez J, Comino J. The Rugby Attack Assessment Instrument (RAAI): validation and preliminary results.

See Also

[compareIP](#).

Examples

```
# Weights:
myWeights <- c(8, 7, 5, 3, 2, 1, 0, -1, -2, -3, -4, -5, -6, -7)

# Observed frequencies:
myFreq <- c(9, 0, 3, 5, 10, 63, 7, 9, 0, 6, 1, 1, 0, 0)

# IP results at 95% confidence level:
myTrial <- computeIP(w = myWeights, f = myFreq)
myTrial
```