

# Package ‘nna’

April 13, 2018

**Title** Nearest-Neighbor Analysis

**Version** 0.0.2.1

**Maintainer** Cristiano Pereira <cristianomp@gmail.com>

**Description** Calculates spatial pattern analysis using a T-square sample procedure.

This method is based on two measures ``x" and ``y".

``x" - Distance from the random point to the nearest individual.

``y" - Distance from individual to its nearest neighbor.

This is a methodology commonly used in phytosociology or marine benthos ecology to analyze the species' distribution (random, uniform or clumped patterns).

Ludwig & Reynolds (1988, ISBN:0471832359).

**Depends** R (>= 3.4.0)

**License** GPL (>= 2)

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.0.1

**NeedsCompilation** no

**Author** Cristiano Pereira [aut, cre],  
Clovis Castro [aut]

**Repository** CRAN

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nna	<i>Calculates Spatial Pattern Analysis using a T-square sample procedure.</i>
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### Description

Calculates Spatial Pattern Analysis using a T-square sample procedure.

### Usage

nna(x, y)

### Arguments

x	- Distance from the random point to the nearest individual
y	- Distance from individual to its nearest neighbor

### Value

Returns the T-Square Index of Spatial Pattern (C); z-score of C; the Distance Index of Dispersion (I); and z-score of I

### References

[1] Cottam, G., & Curtis, J. T. (1956). The use of distance measures in phytosociological sampling. *Ecology*, 37(3), 451-460. doi:10.2307/1930167 [2] Diggle, P. J., Besag, J., & Gleaves, J. T. (1976). Statistical analysis of spatial point patterns by means of distance methods. *Biometrics*, 659-667. [3] Johnson, R. B., & Zimmer, W. J. (1985). A more powerful test for dispersion using distance measurements. *Ecology*, 66(5), 1669-1675. doi:10.2307/1938029 [4] Lamacraft, R. R., Friedel, M. H., & Chewings, V. H. (1983). Comparison of distance based density estimates for some arid rangeland vegetation. *Austral Ecology*, 8(2), 181-187. doi:10.1111/j.1442-9993.1983.tb01605.x [5] Ludwig, J. A., & Reynolds, J. F. (1988). *Statistical ecology: a primer in methods and computing* (Vol. 1). John Wiley & Sons.

### Examples

```
a=c(7, 19, 11, 18, 12, 27, 23, 27, 12, 8, 2, 4, 10, 18, 19, 8, 3, 9, 4, 5)
b=c(8, 6, 6, 13, 16, 11, 18, 8, 7, 7, 3, 7, 32, 22, 22, 12, 17, 18, 11, 10)
nna(a,b)
```

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