Package 'BiplotGUI'

November 8, 2024

Type Package

Title Interactive Biplots in R

Version 0.0-12

Date 2024-11-07

Description Provides a GUI with which users can construct and interact with biplots.

License MIT + file LICENSE

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Depends R (>= 2.15.2), deldir, rgl, tcltk, tcltk2, tkrplot

Imports colorspace, KernSmooth, MASS

LazyData true

OS_type windows

SystemRequirements windows

URL http://biplotgui.r-forge.r-project.org/

RoxygenNote 7.3.2

NeedsCompilation yes

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Repository CRAN

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Contents

BiplotGUI-package *BiplotGUI: Interactive Biplots in R*

Description

A GUI with which to construct and interact with biplots.

Details

Package:	BiplotGUI
Type:	Package
Version:	0.0-7
Date:	2013-03-11
License:	GPL-3 or later
LazyLoad:	yes

The `Biplots()` function initialises the GUI.

At present, **BiplotGUI** is intended to be run under Windows. In Windows, it runs marginally better in SDI mode, rather than MDI mode.

Author(s)

Anthony la Grange

Maintainer: Niel le Roux <njlr@sun.ac.za> Includes Fortran code adapted by NJ le Roux from the original by PJ Rousseeuw, I Ruts and JW Tukey.

References

Gower JC, Hand DJ (1996). *Biplots*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

AntiqueFurniture *Antique furniture data set*

Description

Microscopic measurements made on Old-Cape antique furniture. The furniture are made from three types of wood.

Usage

```
data(AntiqueFurniture)
```

Format

A data frame with 37 observations on the following 7 variables.

`Species` The tree species. A factor with levels `Obul`, `Oken`, `Opor`.

`VesD` Tangential vessel diameter in micrometres. A numeric vector.

`VesL` Vessel element length in micrometres. A numeric vector.

`FibL` Fibre length in micrometres. A numeric vector.

`RayH` Ray height in micrometres. A numeric vector.

`RayW` Ray width in micrometres. A numeric vector.

`NumVes` The number of vessels per millimetre squared. A numeric vector.

Details

During the period 1652–1900, wood from both the indiginous *Ocotea bullata* ("Stinkwood") and the imported *Ocotea perosa* ("Imbuia") were used to make Old-Cape furniture in South Africa. The data set contains mean measurements made on such wood, together with a third species, *Ocotea kenyensis*. Twenty samples of *Ocotea bullata* (`Obul`), 10 samples of *Ocotea perosa* (`Opor`) and 7 samples of *Ocotea kenyensis* (`Oken`) were inspected microscopically, with six variables measured on each sample 50 times over. The data are the mean measurements over the 50 repetitions.

Source

Swart, J.P.J. (1985). *Lauracea*. Unpublished Master's thesis, Stellenbosch University, Stellenbosch, South Africa.

References

Burden, M., Gardner, S., Le Roux, N.J. and Swart, J.P.J. (2001). Ou-Kaapse meubels en stinkhoutidentifikasie: Moontlikhede met kanoniese veranderlike-analise en bistippings. *South African Journal of Cultural History*, **15**, 50–73.

Le Roux, N.J. and Gardner, S. (2005). Analysing your multivariate data as a pictorial: A case for applying biplot methodology? *International Statistical Review*, **73**(3), 365–387.

Examples

```
## Not run: Biplots(Data = AntiqueFurniture[, -1],
        groups = AntiqueFurniture[, 1])
## End(Not run)
```

Biplots *Interactive Biplots in R*

Description

Initialises a GUI with which to construct and interact with biplots.

Usage

```
Biplots(Data, groups = rep(1, nrow(Data)),
PointLabels = rownames(Data),
AxisLabels = colnames(Data), excel = NULL,
ExcelGroupsCol = 0)
```

Arguments

`Data`	A matrix or data frame of numerical data. Its n samples (observations) will be represented as points in the biplots; its p variables will be represented as calibrated biplot axes.
`groups`	A vector or factor of length n specifying the group membership of the samples. By default, all samples are taken to be from a single group. The group labels are taken from this argument, deprecated to 14 characters each.
`PointLabels`	A vector of length n specifying the point labels. By default, the point labels are taken to be the row names of `Data`.
`AxisLabels`	A vector of length p specifying the axis labels. By default, the axis labels are taken to be the column names of `Data`, deprecated to 14 characters each.
`excel`	Deprecated as from version 0.0-4.1.
`ExcelGroupsCol`	Deprecated as from version 0.0-4.1.

Details

`Biplots()` is the sole function of the **BiplotGUI** package. The function initialises the GUI for a particular data set. All further options are available from within the GUI. The GUI features themselves are documented in a separate manual available from the Help menu of the GUI. The manual is also included as a vignette to the package.

Due to the removal of the **xlsReadWrite** package from CRAN, the direct import of data from Excel 1997-2003 files has been deprecated as from **BiplotGUI** 0.0-4.1. As an alternative mechanism, consider the **RODBC** package.

At present, **BiplotGUI** is intended to be run under Windows. In Windows, it runs marginally better in SDI mode, rather than MDI mode.

Author(s)

Author: Anthony la Grange.

Maintainer: Niel le Roux <njlr@sun.ac.za>, http://biplotgui.r-forge.r-project.org/

References

Gower JC, Hand DJ (1996). *Biplots*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

Examples

```
data(Countries)

## Not run: Biplots(Data = Countries)

data(AntiqueFurniture)

## Not run: Biplots(Data = AntiqueFurniture[, -1],
        groups = AntiqueFurniture[, 1])
## End(Not run)

data(FighterAircraft)

## Not run: Biplots(Data = FighterAircraft)
```

`Countries` *Countries data set*

Description

Eight variables measured on the countries with the 15 largest economies by purchasing price parity (PPP) gross domesitic product (GDP) in 2007.

Usage

```
data(Countries)
```

Format

A data frame with 15 observations on the following 8 variables.

`GDP` Purchasing price parity (PPP) gross domestic product (GDP) per capita in 2007 US dollars. A numeric vector.

`HIV.Aids` HIV/Aids prevalence as a percentage of the population. A numeric vector.

`Life.exp.` Life expectancy in years. A numeric vector.

`Mil.` Military spending as a percentage of GDP. A numeric vector.

`Oil.cons.` Oil consumption in barrels per annum per capita. A numeric vector.

`Pop.` Population in millions. A numeric vector.

`Tel.` Number of fixed line telephones per 1000 people. A numeric vector.

`Unempl.` Percentage unemployed. A numeric vector.

Details

The data have been derived largely from the 2007 CIA World Factbook, and are intended for illustrative purposes only.

Source

Agency C (2007). *The World Factbook: 2007, CIA's 2006*, Potomac Books, Washington, DC, USA.

Examples

```
## Not run: Biplots(data=Countries)
```

`FighterAircraft` *Fighter aircraft data set*

Description

Four variables measured on 21 types of US fighter aircraft.

Usage

```
data(FighterAircraft)
```

Format

A data frame with 21 observations on the following 4 variables.

`SPR` Specific power, proportional to power per unit weight. A numeric vector.

`RGF` Flight range factor. A numeric vector.

`PLF` Payload as a fraction of gross weight. A numeric vector.

`SLF` Sustained load factor. A numeric vector.

Details

Measurements of four variables on 21 of 22 types of US fighter aircraft extracted by Cook and Weisberg (1982) from a report by Stanley and Miller (1979).

Source

Stanley W, Miller M (1979). Measuring technological change in jet fighter aircraft. *Technical Report R-2249-AF*, RAND Corporation, Santa Monica, CA, USA.

References

Cook, R. D. and Weisberg, S. (1982). *Residuals and influence in regression*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

Gower, J. C. and Hand, D.J. (1996). *Biplots*. Monographs on Statistics and Applied Probability. Chapman & Hall, London, UK.

Examples

```
## Not run: data(FighterAircraft)
```

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