psyntur: : CHEAT SHEET (LEVEL 4 UG)

Introduction

The `psyntur` package provides functions and data-sets that are helpful for teaching statistics and data analysis.

This cheat cheat provides the key functions used in Level 4 undergraduate psychology.

Data-sets

The package contains 8 data sets for teaching.

dataset	description
ansur	Data on height, weight, handedness from men and women, different ages and races
faithfulfaces	Ratings from facial photo and actual faithfulness
jobsatisfaction	Job satisfaction scores by gender and education
pairedsleep	Effect of two soporific drugs
schizophrenia	Sex differences in age of onset of schizophrenia
selfesteem	Self-esteem data with time (3 time points)
selfesteem2	Self-esteem data with time (3 time points) and treatment (2 groups)
selfesteem2_long	Long format of selfesteem2
vizverb	Visual versus verbal perception and responses

Describe

Apply summary functions to columns to create a new table of summary statistics. A by grouping variable can be used to calculate summary statistics for each sub-group.

summary function

```
describe(data = faithfulfaces,
         by = face_sex,
         avg = mean(faithful),
         stddev = sd(faithful))
```

Data frame — **Grouping variable** — **Function arguments**

MISSING DATA

Most descriptive functions (i.e., **sum()**, **mean()**, **sd()**) rely on complete data.

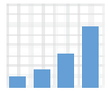
For variables with missing data use **_xna** at end of descriptive function e.g., **sum_xna()**, **mean_xna()**

Visualisation

Three plotting options are available in the pysntur package. They share three common optional extras listed below. Optional extras specific to plot type are listed within example code.

option	description
by =	Optional variable (usually categorical), visualisation is grouped by categories
xlab =	Label of x-axis (defaults to x variable name)
ylab =	Label of y-axis (defaults to y variable name)

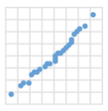
HISTOGRAM



```
histogram(data = schizophrenia,
          x = age,
          bins = 20)
```

Number of bins

SCATTERPLOT



```
scatterplot(data = faithfulfaces,
            x = trustworthy,
            y = faithful,
            best_fit_line = TRUE)
```

Show line of best fit

BOXPLOT

```
tukeyboxplot(data = vizverb,
             y = time,
             x = task,
             jitter = TRUE)
```

x is optional grouping variable

Show data as jitter points

Inferential Tests

Many of the inferential statistics used in Level 4 are not contained within psyntur package, but are instead part of base R.

For completion base r functions are also provided below for level 4.

psyntur:: INDEPENDENT SAMPLES T-TEST

```
t_test(trustworthy ~ face_sex,
       data = faithfulfaces
```

psyntur:: PAIRED SAMPLES T-TEST

```
paired_ t_test(y1, y2
               data = faithfulfaces
```

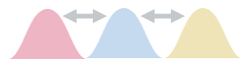
base:: CORRELATION

```
cor.test(faithfulfaces$trustworthy,
         faithfulfaces$faithful)
```

base:: SIMPLE LINEAR REGRESSION

```
lm(data = faithfulfaces,
   faithful ~ trustworthy)
```

base:: ONE WAY ANOVA



```
aov(data = selfesteem2,
    score ~ time)
```