

# Package ‘crosstable’

November 27, 2021

**Title** Crosstables for Descriptive Analyses

**Version** 0.3.2

**Description** Create descriptive tables for continuous and categorical variables.

Apply summary statistics and counting function, with or without a grouping variable, and create beautiful reports using 'rmarkdown' or 'officer'.

You can also compute statistical tests and effect sizes if needed.

**License** GPL-3

**URL** <https://danchaltiel.github.io/crosstable/>,

<https://github.com/DanChaltiel/crosstable/>

**BugReports** <https://github.com/DanChaltiel/crosstable/issues/>

**Depends** R (>= 3.1.0)

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<code>apply_labels</code>	<i>Batch set variable labels</i>
---------------------------	----------------------------------

---

### Description

This function is a copycat of from `expss` package v0.10.7 (slightly modified) to avoid having to depend on `expss`. See `expss::apply_labels()` for more documentation. Note that this version is not compatible with `data.table`.

### Usage

```
apply_labels(data, ..., warn_missing = FALSE)
```

### Arguments

<code>data</code>	<code>data.frame/list</code>
<code>...</code>	named arguments
<code>warn_missing</code>	if TRUE, throw a warning if some names are missing

### Value

An object of the same type as `data`, with labels

### Author(s)

Dan Chaltiel

### Examples

```
iris %>%
  apply_labels(Sepal.Length="Length of Sepal",
              Sepal.Width="Width of Sepal") %>%
  crosstable()
```

---

as_gt.crosstable	<i>Converts a crosstable object into a formatted gt table.</i>
------------------	--

---

### Description

Converts a crosstable object into a formatted gt table.

Method to convert an object to a gt table

Default method to convert an object to a gt table

### Usage

```
## S3 method for class 'crosstable'
as_gt(
  x,
  show_test_name = TRUE,
  by_header = NULL,
  keep_id = FALSE,
  generic_labels = list(id = ".id", variable = "variable", value = "value", total =
    "Total", label = "label", test = "test", effect = "effect"),
  ...
)

as_gt(x, ...)
```

## Default S3 method:  
as\_gt(x, ...)

### Arguments

x	object to be converted
show_test_name	in the test column, show the test name
by_header	a string to override the by header
keep_id	whether to keep the .id column
generic_labels	names of the crosstable default columns
...	arguments for custom methods

### Value

a formatted gt table

### Methods (by class)

- crosstable: For crosstables
- default: default function

**Author(s)**

Dan Chaltiel  
 Dan Chaltiel  
 Dan Chaltiel  
 Dan Chaltiel

**See Also**

[as\\_flextable.crosstable\(\)](#)  
[gt::gt\(\)](#)

**Examples**

```
xx = mtcars2 %>% dplyr::select(1:9)
crosstable(xx) %>% as_gt
crosstable(xx, by=am) %>% as_gt
crosstable(xx, by=cyl, test=TRUE, total=TRUE, effect=TRUE) %>%
  as_gt(keep_id=TRUE, show_test_name=FALSE, by_header="Cylinders")
```

---

as_workbook	<i>Converts a crosstable object into a formatted, savable openxlsx workbook.</i>
-------------	--

---

**Description**

Converts a crosstable object into a formatted, savable openxlsx workbook.

**Usage**

```
as_workbook(
  x,
  show_test_name = TRUE,
  by_header = NULL,
  keep_id = FALSE,
  generic_labels = list(id = ".id", variable = "variable", value = "value", total =
    "Total", label = "label", test = "test", effect = "effect"),
  ...
)
```

**Arguments**

x	the result of <a href="#">crosstable()</a> or a list of crosstables
show_test_name	in the test column, show the test name
by_header	a string to override the by header
keep_id	whether to keep the .id column
generic_labels	names of the crosstable default columns
...	unused

**Value**

an openxlsx workbook containing the crosstable(s)

**Author(s)**

Dan Chaltiel

**Examples**

```
library(openxlsx)
target = tempfile(fileext=".xlsx")

x=crosstable(mtcars2, c(mpg, vs, gear), total=TRUE, test=TRUE)
as_workbook(x, keep_id=TRUE) %>%
  saveWorkbook(file=target)
if(interactive()) browseURL(target)

target = tempfile(fileext=".xlsx")
x2=list(iris=crosstable(iris2), crosstable(mtcars2))
as_workbook(x2, keep_id=TRUE) %>%
  saveWorkbook(file=target)
if(interactive()) browseURL(target)
```

---

body\_add\_crosstable *Add a crosstable to an officer document*

---

**Description**

`body_add_crosstable()` adds such a flextable an officer document.

**Usage**

```
body_add_crosstable(
  doc,
  x,
  body_fontsize = NULL,
  header_fontsize = ceiling(body_fontsize * 1.2),
  padding_v = NULL,
  ...
)
```

**Arguments**

doc	a rdocx object, created by <code>officer::read_docx()</code>
x	a crosstable object
body_fontsize	fontsize of the body
header_fontsize	fontsize of the header

padding\_v        vertical padding of all table rows  
 ...              further arguments passed to [as\\_flextable.crosstable\(\)](#)

**Value**

The docx object doc

**Author(s)**

Dan Chaltiel

**Examples**

```
#Officer
library(officer)
mytable = crosstable(mtcars2)
doc = read_docx() %>%
  body_add_crosstable(mytable) %>%
  body_add_break %>%
  body_add_crosstable(mytable, compact=TRUE)

dfile = tempfile(fileext=".docx")
print(doc, target = dfile)
if(interactive()) browseURL(dfile)
```

---

body\_add\_crosstable\_footnote

*Adds a standard footnote explaining the abbreviations used in a crosstable*

---

**Description**

Use it below [body\\_add\\_crosstable\(\)](#). Footnote: Med: median, IQR: interquartile range, Std: standard deviation. Percentages are expressed in column.

**Usage**

```
body_add_crosstable_footnote(doc)
```

**Arguments**

doc              a rdocx object

**Value**

The docx object doc

**Author(s)**

Dan Chaltiel

---

 body\_add\_crosstable\_list

*Add a list of crosstables*


---

## Description

Add a list of crosstables in an officer document

## Usage

```
body_add_crosstable_list(doc, l, fun = "title2", ...)
```

```
body_add_flextable_list(doc, l, fun = "title2", ...)
```

## Arguments

doc	a rdocx object, created by <code>officer::read_docx()</code>
l	a named list of tables. Plain dataframes will be converted to flextables.
fun	a function to be used before each table, most likely to add some kind of title. Should be of the form <code>function(doc, .name)</code> where <code>.name</code> is the name of the current crosstable of the list. You can also pass "title2" to add the name as a title of level 2 between each table, "newline" to simply add a new line, or even NULL to not separate them (beware that the table might merge then).
...	arguments passed on to <code>body_add_crosstable()</code> or <code>body_add_flextable()</code>

## Value

The docx object doc

## Examples

```
library(officer)
ctl = list(iris2=crosstable(iris2, 1),
          mtcars2=crosstable(mtcars2, 1),
          "just a flextable"=flextable::flextable(mtcars2[1:5,1:5]))

myfun = function(doc, .name){
  doc %>%
    body_add_title(" This is table '{.name}' as a flex/crosstable", level=2) %>%
    body_add_normal("Here is the table:")
}

read_docx() %>%
  body_add_title("Separated by subtitle", 1) %>%
  body_add_crosstable_list(ctl, fun="title2") %>%
  body_add_title("Separated by new line", 1) %>%
  body_add_crosstable_list(ctl, fun="newline") %>%
  body_add_title("Separated using a custom function", 1) %>%
```



```
body_add_crosstable_list(ctl, fun=myfun, body_fontsize=8) %>%
write_and_open()
```

---

body\_add\_gg2

*Alternative to `officer::body_add_gg()` which uses ggplot syntax*


---

## Description

Alternative to `officer::body_add_gg()` which uses ggplot syntax

## Usage

```
body_add_gg2(
  doc,
  value,
  width = 6,
  height = 5,
  units = getOption("crosstable_units", "in"),
  style = getOption("crosstable_style_image", doc$default_styles$paragraph),
  res = 300,
  ...
)
```

## Arguments

doc	an rdocx object
value	ggplot object
width, height	width and height. Can be abbreviated to w and h.
units	units for width and height
style	paragraph style
res	resolution of the png image in ppi (passed to the argument dpi of <code>ggplot2::ggsave()</code> )
...	other arguments to be passed to <code>ggplot2::ggsave()</code>

## Value

The docx object doc

## Author(s)

Dan Chaltiel

**Examples**

```

if(require("ggplot2") && capabilities(what = "png")){
  library(officer)
  p = ggplot(data = iris ) +
    geom_point(mapping = aes(Sepal.Length, Petal.Length))

  options(crosstable_units="cm")
  options(crosstable_style_image="centered")
  doc = read_docx() %>%
    body_add_normal("Text before") %>%
    body_add_gg2(p, w=14, h=10, scale=1.5) %>% #or units="cm" instead of using options
    body_add_normal("Text after")
  #write_and_open(doc)
}

```

---

body\_add\_img2

*Alternative to `officer::body_add_img()` which adds a units choice*


---

**Description**

Alternative to `officer::body_add_img()` which adds a units choice

**Usage**

```

body_add_img2(
  doc,
  src,
  width,
  height,
  units = getOption("crosstable_units", "in"),
  ...
)

```

**Arguments**

doc	an rdocx object
src	image filename, the basename of the file must not contain any blank.
width, height	width and height. Can be abbreviated to w and h.
units	units for width and height
...	other arguments to be passed to <code>officer::body_add_img()</code>

**Value**

The docx object doc

**Author(s)**

Dan Chaltiel

**See Also**[body\\_add\\_gg2\(\)](#)**Examples**

```
img.file = file.path( R.home("doc"), "html", "logo.jpg" )
if(file.exists(img.file)){
  library(officer)
  options(crosstable_units="cm")
  doc = read_docx() %>%
    body_add_normal("This is the R logo.") %>%
    body_add_img2(img.file, h=7.6, w=10, style="centered") #or units="cm" without options
  #write_and_open(doc)
}
```

---

body_add_legend	<i>Add a legend to a table or a figure</i>
-----------------	--

---

**Description**

Add a legend to a table or a figure in an officer document. Legends can be referred to using the @ref syntax in [body\\_add\\_normal\(\)](#) (see examples for some use cases). Table legends should be inserted before the table while figure legends should be inserted after the figure.

**Usage**

```
body_add_table_legend(
  doc,
  legend,
  bookmark = NULL,
  legend_style = getOption("crosstable_style_legend", doc$default_styles$paragraph),
  style = deprecated(),
  name_format = NULL,
  legend_name = "Table",
  seqfield = "SEQ Table \\* Arabic",
  par_before = FALSE,
  legacy = FALSE
)

body_add_figure_legend(
  doc,
  legend,
  bookmark = NULL,
  legend_style = getOption("crosstable_style_legend", doc$default_styles$paragraph),
  style = deprecated(),
  name_format = NULL,
  legend_name = "Figure",
```

```

seqfield = "SEQ Figure \\* Arabic",
par_after = FALSE,
legacy = FALSE
)

```

### Arguments

doc	a docx object
legend	the table legend. As with <code>glue::glue()</code> , expressions enclosed by braces will be evaluated as R code.
bookmark	the id of the bookmark. This is the id that should then be called in <code>body_add_normal()</code> using the "\\@ref(id)" syntax.
legend_style	style of of the whole legend. May depend on the docx template. However, if <code>name_format</code> is provided with a specific <code>font.size</code> , this size will apply to the whole legend for consistency.
style	deprecated in favor of <code>name_format</code> .
name_format	format of the legend's LHS ( <code>legend_name</code> + numbering) using <code>officer::fp_text_lite()</code> or <code>officer::fp_text()</code> . Default to <code>fp_text_lite(bold=TRUE)</code> in addition to the format defined in <code>legend_style</code> . Note that the reference to the bookmark will have the same specific format in the text.
legend_name	name before the numbering. Default to either "Table" or "Figure".
seqfield	Keep default. Otherwise, you may figure it out doing this: in a docx file, insert a table legend, right click on the inserted number and select "Toggle Field Codes". This argument should be the value of the field, with extra escaping.
par_before, par_after	should an empty paragraph be inserted before/after the legend?
legacy	use the old version of this function, if you cannot update <code>{officer}</code> to v0.4+

### Value

The docx object doc

### Warning

Be aware that you unfortunately cannot reference a bookmark more than once using this method.

Writing:

```
body_add_normal("Table \\@ref(iris_col1) is about flowers. I like this Table \\@ref(iris_col1).")
```

will prevent the numbering from applying.

### What to do if there is still no numbering?

During the opening of the document, MS Word might ask you to "update the fields", to which you should answer "Yes".

If it is not asked or if you answer "No", the legends added with `body_add_table_legend()` or `body_add_figure_legend()` might have no actual numbers displayed.

In this case, you have to manually update the references in MS Word: select all (Ctrl+A), then update (F9), sometimes twice. More info on <https://ardata-fr.github.io/officeverse/faq.html#update-fields>.

**Author(s)**

Dan Chaltiel

**Examples**

```

library(officer)
p=ggplot2::quickplot(x=Sepal.Length, y=Sepal.Width, color=Species, data=iris)
fp_italic = fp_text_lite(italic=TRUE, font.size=10)
x=read_docx() %>%
  body_add_normal("There is Table \@ref(iris_col1) and Table \@ref(iris_col2). ",
                  "The `iris` dataset is about flowers.") %>%
  body_add_normal() %>%
  body_add_table_legend("Iris dataset, column 1 (mean={round(mean(iris[[1]]), 2)}",
                        bookmark="iris_col1") %>%
  body_add_crosstable(crosstable(iris[1])) %>%
  body_add_normal() %>%
  body_add_table_legend("Iris dataset, column 2 (mean={round(mean(iris[[2]]), 2)}",
                        bookmark="iris_col2",
                        name_format=fp_italic, legend_style="Balloon Text") %>%
  body_add_crosstable(crosstable(iris[2])) %>%
  body_add_normal() %>%
  body_add_normal("There is also the figure \@ref(iris_fig)") %>%
  body_add_gg(p) %>%
  body_add_figure_legend("Iris plot", bookmark="iris_fig")
write_and_open(x)
#If asked to update fields, press "Yes". Otherwise press Ctrl+A then F9 twice for the references
#to appear.

```

---

body\_add\_list

*Add a list to an officer document*


---

**Description**

Add a list to an officer document

**Usage**

```
body_add_list(doc, value, ordered = FALSE, style = NULL, ...)
```

```
body_add_list_item(doc, value, ordered = FALSE, style = NULL, ...)
```

**Arguments**

doc	a docx object
value	a character (body_add_list()) or a string (body_add_list_item)
ordered	if TRUE, adds an ordered list, if FALSE, adds a bullet list

style specify the style manually, overriding ordered. A better way is to set options `crosstable_style_list_ordered` and `crosstable_style_list_unordered` globally.

... passed on to `officer::body_add_par()`

### Details

Ordered lists and bullet lists are not supported by the default officer template (see <https://github.com/davidgohel/officer/issues>). You have to manually set custom styles matching those list in a custom Word template file. Then, you can use either the `style` argument or `crosstable` options. See examples for more details.

### Value

The docx object `doc`

### Author(s)

Dan Chahiel

### Examples

```
## Not run:
#For this example to work, `my_template.docx` should include styles named
#`ordered_list` and `unordered_list`

library(officer)
library(crosstable)
options(crosstable_style_list_ordered="ordered_list")
options(crosstable_style_list_unordered="unordered_list")

read_docx("my_template.docx") %>%
  body_add_list(c("Numbered item 1", "Numbered item 2"), ordered = TRUE) %>%
  body_add_list_item("Numbered item 3", ordered = TRUE) %>%
  body_add_list(c("Bullet item 1", "Bullet item 2"), ordered = FALSE) %>%
  body_add_list_item("Bullet item 3", ordered = FALSE) %>%
  write_and_open()

## End(Not run)
```

---

body\_add\_normal

*Add a new paragraph with default style*

---

### Description

Add a new paragraph in an officer document with default style. Variables can be inserted as multiple strings (`paste()` style) or enclosed by braces (`glue()` style). References to any bookmark can be inserted using the syntax "`@ref(bookmark)`". See an example in [body\\_add\\_table\\_legend\(\)](#).

**Usage**

```
body_add_normal(doc, ..., .sep = "", squish = TRUE)
```

**Arguments**

doc	the doc object (created with the read_docx function of officer package)
...	one or several character strings, pasted using .sep. As with glue::glue(), expressions enclosed by braces will be evaluated as R code. If more than one variable is passed, all should be of length 1.
.sep	Separator used to separate elements.
squish	Whether to squish the result (remove trailing and repeated spaces). Default to TRUE. Allows to add multiline paragraph without breaking the string.

**Value**

a new doc object  
The docx object doc

**Author(s)**

Dan Chaltiel  
Dan Chaltiel

**Examples**

```
library(officer)
library(crosstable)

info_rows = c("Also, table iris has {nrow(iris)} rows.",
              "And table mtcars has {nrow(mtcars)} rows.")
doc = read_docx() %>%
  body_add_normal("Table iris has", ncol(iris), "columns.", .sep=" ") %>% #paste style
  body_add_normal("However, table mtcars has {ncol(mtcars)} columns") %>% #glue style
  body_add_normal(info_rows) #vector style
#write_and_open(doc)
```

---

body_add_title	<i>Add a title to an officer document</i>
----------------	---

---

**Description**

Add a title to an officer document

**Usage**

```
body_add_title(
  doc,
  value,
  level = 1,
  squish = TRUE,
  style = getOption("crosstable_style_heading", "heading")
)
```

**Arguments**

doc	the doc object (created with the read_docx function of officer package)
value	a character string
level	the level of the title. See styles_info(doc) to know the possibilities.
squish	Whether to squish the result (remove trailing and repeated spaces). Default to TRUE.
style	the name of the title style. See styles_info(doc) to know the possibilities.

**Value**

The docx object doc

**Author(s)**

Dan Chaltiel

**Examples**

```
library(officer)
library(crosstable)
library(dplyr)
doc = read_docx() %>%
  body_add_title("La table iris (nrow={nrow(iris)})", 1) %>%
  body_add_title("Description", 2) %>%
  body_add_normal("La table iris a ", ncol(iris), " colonnes.")
#write_and_open(doc)
```

---

body\_replace\_text\_at\_bkms

*Replace text on several bookmarks at once*

---

**Description**

Replace text on several bookmarks at once



**Usage**

```
body_replace_text_at_bkms(doc, ...)
```

**Arguments**

```
doc          a rdocx object
...          named
```

**Value**

The docx object doc

**Author(s)**

Dan Chaltiel

---

compact	<i>Generic function to compact a table (publication formatting)</i>
---------	---

---

**Description**

Generic function to compact a table (publication formatting)

**Usage**

```
## S3 method for class 'data.frame'
compact(
  data,
  name_from,
  name_to = "variable",
  wrap_cols = NULL,
  rtn_flextable = FALSE,
  ...
)

## S3 method for class 'crosstable'
compact(data, name_from = c("label", ".id"), name_to = "variable", ...)
```

**Arguments**

```
data          the object to compact
name_from     name of the column to be collapsed when compacting
name_to       name of the column that will receive the collapsed column. Will be created if it
              doesn't exist.
wrap_cols     name of the columns to wrap
rtn_flextable whether to return a formatted flextable() object or a simple data.frame
...          additional arguments (not used)
```

**Value**

a compacted data.frame

**Author(s)**

Dan Chaltiel

Dan Chaltiel

Dan Chaltiel

Dan Chaltiel

**Examples**

```
#dataframes
x=iris[c(1:5,51:55,101:105),]
compact(x, name_from="Species")
compact(x, name_from="Species", name_to="Petal.Length")

#crosstables
x=crosstable(mtcars2, c(disp, hp, am), by=vs, test=TRUE, effect=TRUE)
compact(x)
compact(x, name_from=".id")
```

---

confint_numeric	<i>Confidence interval of a numeric vector</i>
-----------------	--

---

**Description**

Not an S3 method, which might have conflicted with [stats::confint](#).

**Usage**

```
confint_numeric(object, level = 0.95, B = 0)
```

**Arguments**

object	a vector, numeric or equivalent (date, logical...)
level	the confidence level required
B	if >0, the number of bootstraps

**Value**

the vector [conf\_inf, conf\_sup]

**Author(s)**

Dan Chaltiel

**Examples**

```
confint_numeric(iris$Sepal.Length)
confint_numeric(mtcars2$hp_date)
confint_numeric(mtcars2$hp_date, level=0.99)
```

---

crosstable

*Easily describe datasets*


---

**Description**

Generate a descriptive table of all chosen columns, as contingency tables for categorical variables and as calculation summaries for numeric variables. If the `by` argument points to one or several categorical variables, `crosstable` will output a description of all columns for each level. Otherwise, if it points to a numeric variable, `crosstable` will calculate correlation coefficients with all other selected numeric columns. Finally, if it points to a `Surv` object, `crosstable` will describe the survival at different times.

Can be formatted as an HTML table using [as\\_flextable\(\)](#).

**Usage**

```
crosstable(
  data,
  cols = NULL,
  ...,
  by = NULL,
  total = c("none", "row", "column", "both"),
  percent_pattern = "{n} ({p_row})",
  percent_digits = 2,
  num_digits = 1,
  showNA = c("ifany", "always", "no"),
  label = TRUE,
  funs = c(` ` = cross_summary),
  funs_arg = list(),
  cor_method = c("pearson", "kendall", "spearman"),
  unique_numeric = 3,
  date_format = NULL,
  times = NULL,
  followup = FALSE,
  test = FALSE,
  test_args = crosstable_test_args(),
  effect = FALSE,
  effect_args = crosstable_effect_args(),
  margin = c("row", "column", "cell", "none", "all"),
  .vars
)

is.crosstable(x)
```

**Arguments**

<code>data</code>	A <code>data.frame</code>
<code>cols</code>	The variables to describe. Can be a character or name vector, a <code>tidyselect</code> helper, a <code>(lambda)</code> function that returns a logical, or a formula. See examples or <code>vignette("crosstable-selection")</code> for more details.
<code>...</code>	Unused. All parameters after this one must be named.
<code>by</code>	The variable to group on. Character or name.
<code>total</code>	one of <code>["none", "row", "column" or "both"]</code> to indicate whether to add total rows and/or columns. Default to none.
<code>percent_pattern</code>	Pattern used to describe proportions in categorical data. Syntax uses a <code>glue::glue()</code> specification, see section below for more details. Default to <code>"{n} ({p_col})"</code> if <code>by</code> is null and <code>"{n} ({p_row})"</code> if it is not.
<code>percent_digits</code>	Number of digits for percentages.
<code>num_digits</code>	Number of digits for numeric summaries.
<code>showNA</code>	Whether to show NA in categorical variables (one of <code>c("if any", "always", "no")</code> , like in <code>table()</code> ).
<code>label</code>	Whether to show labels. See <code>import_labels()</code> or <code>set_label()</code> for how to add labels to the dataset columns.
<code>funcs</code>	Functions to apply to numeric variables. Default to <code>cross_summary()</code> .
<code>funcs_arg</code>	Additional parameters for <code>funcs</code> , e.g. <code>digits</code> (the number of decimal places) for the default <code>cross_summary()</code> . Ultimately, these arguments are passed to <code>format_fixed()</code> .
<code>cor_method</code>	One of <code>c("pearson", "kendall", "spearman")</code> to indicate which correlation coefficient is to be used.
<code>unique_numeric</code>	The number of non-missing different levels a variable should have to be considered as numeric.
<code>date_format</code>	if <code>x</code> is a vector of Date or POSIXt, the format to apply (see <code>strptime</code> for formats)
<code>times</code>	When using formula with <code>survival::Surv()</code> objects, which times to summarize.
<code>followup</code>	When using formula with <code>survival::Surv()</code> objects, whether to display follow-up time.
<code>test</code>	Whether to perform tests.
<code>test_args</code>	See <code>crosstable_test_args</code> to override default testing behaviour.
<code>effect</code>	Whether to compute a effect measure.
<code>effect_args</code>	See <code>crosstable_effect_args</code> to override default behaviour.
<code>margin</code>	Deprecated in favor of <code>percent_pattern</code> . One of <code>["row", "column", "cell", "none", or "all"]</code> . Default to row.
<code>.vars</code>	Deprecated in favor of <code>cols</code> .
<code>x</code>	a numeric vector to format

**Value**

A data.frame/tibble of class crosstable

**percent\_pattern**

The percent\_pattern argument is a single string that uses the glue syntax, where variables are put in double curly braces (`{{x}}`). Count is expressed as `{{n}}` and proportions as `{{p_row}}`, `{{p_col}}`, and `{{p_cell}}`, depending on which way they are calculated.

For each proportion, a confidence interval is also calculated using **Wilson score** and can be expressed as `{{p_XXX_inf}}` and `{{p_XXX_sup}}`. See examples for practical applications.

**Author(s)**

Dan Chaltiel

**See Also**

<https://danchaltiel.github.io/crosstable/>, `as_flextable`, `import_labels`

**Examples**

```
#whole table
crosstable(iris)
crosstable(mtcars)
crosstable(mtcars2)

#tidyselection, custom functions
library(dplyr)
crosstable(mtcars2, c(ends_with("t"), starts_with("c")), by=vs,
           funs=c(mean, quantile), funs_arg=list(probs=c(.25,.75)))

#margin and totals, multiple by
crosstable(mtcars2, c(displ, cyl), by=c(am, vs),
           margin=c("row", "col"), total = "both")

#predicate selection, correlation, effect calculation
crosstable(mtcars2, where(is.numeric), by=hp, effect=TRUE)

#lambda selection & statistical tests
crosstable(mtcars2, ~is.numeric(.) && mean(.)>50, by=vs, test=TRUE)

#Dates
mtcars2$my_date = as.Date(mtcars2$hp, origin="2010-01-01") %>% set_label("Some nonsense date")
crosstable(mtcars2, my_date, by=vs, date_format="%d/%m/%Y")

#Survival data (using formula syntax)
library(survival)
crosstable(am1, Surv(time, status) ~ x, times=c(0,15,30,150), followup=TRUE)

#Patterns
crosstable(mtcars2, vs, by=am, percent_digits=0,
```

```

percent_pattern="{n} ({p_col} / {p_row})"
crosstable(mtcars2, vs, by=am, percent_digits=0,
percent_pattern="N={n} \np[95%CI] = {p_col} [{p_col_inf}; {p_col_sup}]")
str_high="n>5"; str_lo="n<=5"
crosstable(mtcars2, vs, by=am, percent_digits=0,
percent_pattern="col={p_col}, row={p_row} ({ifelse(n<5, str_lo, str_high)})")

```

---

crosstable\_effect\_args

*Default arguments for calculating and displaying effects in [crosstable\(\)](#)*

---

## Description

This helper function provides default parameters for defining how the effect sizes should be computed. It belongs to the `effect_args` argument of the `crosstable()` function. See [effect\\_summary](#), [effect\\_tabular](#), and [effect\\_survival](#) for more insight.

## Usage

```
crosstable_effect_args()
```

## Value

A list with testing parameters:

- `effect_summarize` - a function of three arguments (continuous variable, grouping variable and `conf_level`), used to compare continuous variable. Returns a list of five components: `effect` (the effect value(s)), `ci` (the matrix of confidence interval(s)), `effect.name` (the interpretation(s) of the effect value(s)), `effect.type` (the description of the measure used) and `conf_level` (the confidence interval level). See [diff\\_mean\\_auto\(\)](#), [diff\\_mean\\_student\(\)](#), [diff\\_mean\\_boot\(\)](#), or [diff\\_median\(\)](#) for some examples of such functions. Users can provide their own function.
- `effect_tabular` - a function of three arguments (two categorical variables and `conf_level`) used to measure the associations between two factors. Returns a list of five components: `effect` (the effect value(s)), `ci` (the matrix of confidence interval(s)), `effect.name` (the interpretation(s) of the effect value(s)), `effect.type` (the description of the measure used) and `conf_level` (the confidence interval level). See [effect\\_odds\\_ratio\(\)](#), [effect\\_relative\\_risk\(\)](#), or [effect\\_risk\\_difference\(\)](#) for some examples of such functions. Users can provide their own function.
- `effect_survival` - a function of two argument (a formula and `conf_level`), used to measure the association between a censored and a factor. Returns the same components as created by `effect_summarize`. See [effect\\_survival\\_coxph\(\)](#). Users can provide their own function.
- `effect_display` - a function to format the effect. See [display\\_effect\(\)](#).
- `conf_level` - the desired confidence interval level
- `digits` - the decimal places

**Author(s)**

Dan Chaltiel

---

crosstable_options	<i>Options for the package crosstable</i>
--------------------	---

---

**Description**

Use this function to manage your crosstable parameters globally while taking advantage of auto-completion. Use [crosstable\\_peek\\_options\(\)](#) to see which option is currently set.

**Usage**

```
crosstable_options(  
  reset = FALSE,  
  crosstable_zero_percent,  
  crosstable_verbosity_autotesting,  
  crosstable_verbosity_duplicate_cols,  
  crosstable_wrap_id,  
  crosstable_only_round,  
  crosstable_units,  
  crosstable_peek_docx,  
  crosstable_compact_padding,  
  crosstable_total,  
  crosstable_percent_pattern,  
  crosstable_percent_digits,  
  crosstable_num_digits,  
  crosstable_showNA,  
  crosstable_label,  
  crosstable_funs,  
  crosstable_funs_arg,  
  crosstable_cor_method,  
  crosstable_unique_numeric,  
  crosstable_date_format,  
  crosstable_times,  
  crosstable_followup,  
  crosstable_test_arg,  
  crosstable_effect_args,  
  crosstable_keep_id,  
  crosstable_autofit,  
  crosstable_compact,  
  crosstable_remove_header_keys,  
  crosstable_show_test_name,  
  crosstable_padding_v,  
  crosstable_header_show_n,  
  crosstable_fontsize_body,
```

```

crosstable_fontsize_header,
crosstable_fontsize_subheaders,
crosstable_normal_squish,
crosstable_title_squish,
crosstable_style_normal,
crosstable_style_character,
crosstable_style_strong,
crosstable_style_image,
crosstable_style_legend,
crosstable_style_heading,
crosstable_style_list_ordered,
crosstable_style_list_unordered
)

```

### Arguments

**reset**                    if TRUE, set all these options back to default  
**crosstable\_zero\_percent**                    set to TRUE so that proportions are not displayed if n==0  
**crosstable\_verbosity\_autotesting**                    one of default, quiet, or verbose  
**crosstable\_verbosity\_duplicate\_cols**                    one of default, quiet, or verbose.  
**crosstable\_wrap\_id**                    if id contains no spaces, wrap it with this maximum number of characters.  
**crosstable\_only\_round**                    default argument for [format\\_fixed\(\)](#)  
**crosstable\_units**                    default units in [body\\_add\\_gg2\(\)](#) and [body\\_add\\_img2\(\)](#)  
**crosstable\_peek\_docx**                    behavior of [peek\(\)](#), which will open a docx if TRUE (default) and an xlsx if FALSE  
**crosstable\_compact\_padding**                    in flextables, left-padding for non-headers rows when compact=TRUE.  
**crosstable\_total**                    For setting [crosstable\(\)](#) arguments globally.  
**crosstable\_percent\_pattern**                    For setting [crosstable\(\)](#) arguments globally.  
**crosstable\_percent\_digits**                    For setting [crosstable\(\)](#) arguments globally.  
**crosstable\_num\_digits**                    For setting [crosstable\(\)](#) arguments globally.  
**crosstable\_showNA**                    For setting [crosstable\(\)](#) arguments globally.  
**crosstable\_label**                    For setting [crosstable\(\)](#) arguments globally.



crosstable_funs	For setting <code>crosstable()</code> arguments globally.
crosstable_funs_arg	For setting <code>crosstable()</code> arguments globally.
crosstable_cor_method	For setting <code>crosstable()</code> arguments globally.
crosstable_unique_numeric	For setting <code>crosstable()</code> arguments globally.
crosstable_date_format	For setting <code>crosstable()</code> arguments globally.
crosstable_times	For setting <code>crosstable()</code> arguments globally.
crosstable_followup	For setting <code>crosstable()</code> arguments globally.
crosstable_test_arg	For setting <code>crosstable()</code> arguments globally.
crosstable_effect_args	For setting <code>crosstable()</code> arguments globally.
crosstable_keep_id	For setting <code>as_flextable()</code> arguments globally.
crosstable_autofit	For setting <code>as_flextable()</code> arguments globally.
crosstable_compact	For setting <code>as_flextable()</code> arguments globally.
crosstable_remove_header_keys	For setting <code>as_flextable()</code> arguments globally.
crosstable_show_test_name	For setting <code>as_flextable()</code> arguments globally.
crosstable_padding_v	For setting <code>as_flextable()</code> arguments globally.
crosstable_header_show_n	For setting <code>as_flextable()</code> arguments globally.
crosstable_fontsize_body	For setting <code>as_flextable()</code> arguments globally.
crosstable_fontsize_header	For setting <code>as_flextable()</code> arguments globally.
crosstable_fontsize_subheaders	For setting <code>as_flextable()</code> arguments globally. Subheaders are only considered when <code>compact=TRUE</code> .
crosstable_normal_squish	Should you squish text in normal paragraphs?
crosstable_title_squish	Should you squish text in headers paragraphs?
crosstable_style_normal	For specifying styles used in your officer template.

`crosstable_style_character`  
For specifying styles used in your officer template.

`crosstable_style_strong`  
For specifying styles used in your officer template.

`crosstable_style_image`  
For specifying styles used in your officer template.

`crosstable_style_legend`  
For specifying styles used in your officer template.

`crosstable_style_heading`  
For specifying styles used by headings on different levels. Levels will be pasted in the end (e.g. use "title" if your level 2 heading style is "title2").

`crosstable_style_list_ordered`, `crosstable_style_list_unordered`  
For specifying styles used by lists in the rdocx template. Needed for `body_add_list()` to work.

**Value**

Nothing, called for its side effects

---

`crosstable_peek_options`

*See which crosstable option is currently set.*

---

**Description**

See which crosstable option is currently set.

**Usage**

```
crosstable_peek_options(keep_null = FALSE)
```

**Arguments**

`keep_null`      set to TRUE to get a list

**Value**

A named list of crosstable options

---

crosstable\_test\_args *Default arguments for calculating and displaying tests in [crosstable\(\)](#)*

---

## Description

This is the starting point for refining the testing algorithm used in `crosstable`. Users can provide their own functions for `test.~`.

## Usage

```
crosstable_test_args()
```

## Value

A list with testing parameters:

- `test_summarize` - a function of two arguments (continuous variable and grouping variable), used to compare continuous variable. Must return a list of two components: `p.value` and method. See [test\\_summarize\\_auto](#) or [test\\_summarize\\_linear\\_contrasts](#) for some examples of such functions.
- `test_tabular` - a function of two arguments (two categorical variables), used to test association between two categorical variables. Must return a list of two components: `p.value` and method. See [test\\_tabular\\_auto](#) for example.
- `test_correlation` - a function of three arguments (two continuous variables plus the correlation method), used to test association between two continuous variables. Like `cor.test`, it must return a list of at least `estimate`, `p.value`, and `method`, with also `conf.int` optionally. See [test\\_correlation\\_auto](#) for example.
- `test_survival` - a function of one argument (the formula `surv~by`), used to compare survival estimations. Must return a list of two components: `p.value` and method. See [test\\_survival\\_logrank](#) for example.
- `test_display` - function used to display the test result. See [display\\_test](#).
- `plim` - number of digits for the p value
- `show_method` - whether to display the test name (logical)

## Author(s)

Dan Chaltiel

## See Also

[test\\_summarize\\_auto](#), [test\\_tabular\\_auto](#), [test\\_survival\\_logrank](#), [test\\_summarize\\_linear\\_contrasts](#), [display\\_test](#)

## Examples

```
library(dplyr)
my_test_args=crosstable_test_args()
my_test_args$test_summarize = test_summarize_linear_contrasts
iris %>%
  mutate(Petal.Width.qt = paste0("Q", ntile(Petal.Width, 5)) %>% ordered()) %>%
  crosstable(Petal.Length ~ Petal.Width.qt, test=TRUE, test_args = my_test_args)
```

---

cross_summary	<i>Summarize a numeric vector</i>
---------------	-----------------------------------

---

## Description

Summarize a numeric vector with min, max, mean, sd, median, IQR, n and missings.

## Usage

```
cross_summary(x, dig = 1, ...)
```

## Arguments

x	a numeric vector
dig	number of digits
...	params to pass on to <a href="#">format_fixed()</a> : zero_digits and only_round

## Value

a list of named functions

## Author(s)

Dan Chaltiel, David Hajage

## Examples

```
cross_summary(iris$Sepal.Length)
cross_summary(iris$Petal.Width, dig=3)
cross_summary(mtcars2$hp_date)
cross_summary(mtcars2$qsec_posix, date_format="%d/%m %H:%M")
```

---

display_effect	<i>Default function to display the effect</i>
----------------	---

---

**Description**

User can provide their own custom version in [crosstable\\_effect\\_args\(\)](#)

**Usage**

```
display_effect(effect, digits = 4)
```

**Arguments**

effect	effect
digits	digits

**Value**

a character vector

**Author(s)**

Dan Chaltiel

---

display_test	<i>Default function to display a test result</i>
--------------	--

---

**Description**

Default function to display a test result

**Usage**

```
display_test(test, digits = 4, method = TRUE)
```

**Arguments**

test	test
digits	number of digits
method	display method

**Value**

a string

**Author(s)**

Dan Chaltiel

---

docx_bookmarks2	<i>List Word bookmarks, including the ones in header and footer</i>
-----------------	---

---

**Description**

This is a correction of `officer::docx_bookmarks()`. See [this PR](#).

**Usage**

```
docx_bookmarks2(
  x,
  return_vector = FALSE,
  target = c("all", "header", "body", "footer")
)
```

**Arguments**

x	an rdocx object
return_vector	use TRUE for compatibility with <code>officer::docx_bookmarks()</code>
target	one of <code>c("all", "header", "body", "footer")</code>

**Value**

a list with all bookmarks

**Author(s)**

Dan Chaltiel

---

effect_summary	<i>Effect measure for association between one continuous and one categorical variable</i>
----------------	---

---

**Description**

User can either use or extend these functions to configure effect calculation.

**Usage**

```
diff_mean_auto(x, by, conf_level = 0.95, R = 500)
diff_mean_boot(x, by, conf_level = 0.95, R = 500)
diff_median_boot(x, by, conf_level = 0.95, R = 500)
diff_mean_student(x, by, conf_level = 0.95)
```

**Arguments**

x	numeric vector
by	categorical vector (of exactly 2 unique levels)
conf_level	confidence interval level
R	number of bootstrap replication

**Value**

A list with five components: effect, ci, effect.name, effect.type, and conf\_level

**Functions**

- `diff_mean_auto`: (**Default**) calculate a specific "difference in means" effect based on normality (Shapiro or Anderson test) and variance homogeneity (Bartlett test)
- `diff_mean_boot`: calculate a "difference in means" effect with a bootstrapped CI using standard deviation
- `diff_median_boot`: calculate a "difference in medians" effect with a bootstrapped CI using quantiles#'
- `diff_mean_student`: calculate a "difference in means" effect using t.test confidence intervals

**Author(s)**

Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage

**See Also**

[crosstable\\_effect\\_args\(\)](#)

---

effect_survival	<i>Effect measure for association between one censored variable and one categorical variable</i>
-----------------	--

---

**Description**

Effect measure for association between one censored variable and one categorical variable

**Usage**

```
effect_survival_coxph(x, by, conf_level = 0.95)
```

**Arguments**

x	survival vector (made using <code>survival::Surv()</code> )
by	categorical vector (of exactly 2 unique levels)
conf_level	confidence interval level

**Value**

a list with two components: p.value and method

**Author(s)**

Dan Chaltiel, David Hajage

---

effect_tabular	<i>Effect measure for association between two categorical variables</i>
----------------	---

---

**Description**

User can either use or extend these functions to configure effect calculation.

**Usage**

```
effect_odds_ratio(x, by, conf_level = 0.95)
```

```
effect_relative_risk(x, by, conf_level = 0.95)
```

```
effect_risk_difference(x, by, conf_level = 0.95)
```

**Arguments**

x	categorical vector (character, factor, ...)
by	categorical vector (of exactly 2 unique levels)
conf_level	confidence interval level

**Value**

A list with five components: effect, ci, effect.name, effect.type, and conf\_level

**Functions**

- `effect_odds_ratio`: (**Default**) calculate the odds ratio
- `effect_relative_risk`: calculate the relative risk
- `effect_risk_difference`: calculate the risk difference



**Author(s)**

Dan Chaltiel, David Hajage

Dan Chaltiel, David Hajage

Dan Chaltiel, David Hajage

**See Also**[crosstable\\_effect\\_args\(\)](#)


---

format_fixed	<i>Format numbers with the exact same number of decimals, including trailing zeros</i>
--------------	--

---

**Description**

Format numbers with the exact same number of decimals, including trailing zeros

**Usage**

```
format_fixed(
  x,
  digits = 1,
  zero_digits = 1,
  date_format = NULL,
  percent = FALSE,
  only_round = getOption("crosstable_only_round", FALSE),
  ...
)
```

**Arguments**

x	a numeric vector to format
digits	number of decimals
zero_digits	number of significant digits for values rounded to 0 (can be set to NULL to keep the original 0 value)
date_format	if x is a vector of Date or POSIXt, the format to apply (see <a href="#">strptime</a> for formats)
percent	if TRUE, format the values as percentages
only_round	if TRUE, format_fixed simply returns the rounded value. Can be set globally with <code>options("crosstable_only_round"=TRUE)</code> .
...	unused

**Value**

a character vector of formatted numbers

**Author(s)**

Dan Chaltiel

**Examples**

```
x = c(1, 1.2, 12.78749, pi, 0.00000012)
format_fixed(x, digits=3) #default zero_digits=1
format_fixed(x, digits=3, zero_digits=2)
format_fixed(x, digits=3, zero_digits=NULL)

x_sd = sd(iris$Sepal.Length/10000, na.rm=TRUE)
format_fixed(x_sd, dig=6)
format_fixed(x_sd, dig=3, zero_digits=2) #default only_round=FALSE
format_fixed(x_sd, dig=3, zero_digits=2, only_round=TRUE)
options("crosstable_only_round"=TRUE)
format_fixed(x_sd, dig=3, zero_digits=2) #override default
options("crosstable_only_round"=NULL)

x2 = mtcars$mpg/max(mtcars$mpg)
x2 = c(0.01, 0.1001, 0.500005, 0.00000012)
format_fixed(x2, percent=TRUE, dig=6)
```

---

generate\_autofit\_macro

*Generate a macro file for autofitting*


---

**Description**

This function generates a file that can be imported into MS Word in order to use a macro for autofitting all tables in a document at once. This macro file should be imported only once per computer.

**Usage**

```
generate_autofit_macro()
```

**Value**

Nothing, called for its side effects

**Installation**

- In the R console, run `generate_autofit_macro()` to generate the file `crosstable_autofit.bas` in your working directory.
- In MS Word, press `Alt+F11` to open the VB Editor.
- In the Editor, go to `File > Import` or press `Ctrl+M` to open the import dialog, and import `crosstable_autofit.bas`. There should now be a "CrosstableMacros" module in the "Normal" project.

- Run the macro, either from the VB Editor or from View > Macros > View Macros > Run.

This process will make the macro accessible from any Word file on this computer. Note that, in the Editor, you can also drag the module to your document project to make the macro accessible only from this file. The file will have to be named with the docm extension though.

### Author(s)

Dan Chaltiel

---

get_label	<i>Get label if wanted and available, or default (name) otherwise</i>
-----------	---

---

### Description

Get label if wanted and available, or default (name) otherwise

### Usage

```
get_label(x, default = names(x), object = FALSE, simplify = TRUE)
```

### Arguments

x	labelled object. If x is a list/data.frame, get_label() will return the labels of all children recursively
default	value returned if there is no label. Default to names(x).
object	if x is a list/data.frame, object=TRUE will force getting the labels of the object instead of the children
simplify	if x is a list and object=FALSE, simplify the result to a vector

### Value

A character vector if simplify==TRUE, a list otherwise

### Author(s)

Dan Chaltiel

### See Also

[set\\_label\(\)](#), [import\\_labels\(\)](#), [remove\\_label\(\)](#), [Hmisc::label\(\)](#), [expss::var\\_lab\(\)](#)

**Examples**

```

xx=mtcars2 %>%
  set_label("The mtcars2 dataset", object=TRUE)
xx$cyl=remove_label(xx$cyl)

#vectors
get_label(xx$mpg) #label="Miles/(US) gallon"
get_label(xx$cyl) #default to NULL (as names(xx$cyl)==NULL)
get_label(xx$cyl, default="Default value")

#data.frames
get_label(xx)
get_label(xx, object=TRUE)
data.frame(name=names(xx), label=get_label(xx, default=NA)) #cyl is NA

#lists
get_label(list(xx$cyl, xx$mpg))
get_label(list(foo=xx$cyl, bar=xx$mpg))
get_label(list(foo=xx$cyl, bar=xx$mpg), default="Default value")

```

---

import\_labels

*Import labels*


---

**Description**

import\_labels imports labels from a data.frame (data\_label) to another one (.tbl). Works in synergy with [save\\_labels\(\)](#).

save\_labels saves the labels from a data.frame in a temporary variable that can be retrieve by import\_labels.

**Usage**

```

import_labels(
  .tbl,
  data_label,
  name_from = "name",
  label_from = "label",
  verbose_name = FALSE,
  verbose_label = FALSE,
  verbose = deprecated()
)

save_labels(.tbl)

```

**Arguments**

.tbl            the data.frame to be labelled

data_label	a data.frame from which to import labels. If missing, the function will take the labels from the last dataframe on which <code>save_labels()</code> was called.
name_from	in data_label, which column to get the variable name (default to name)
label_from	in data_label, which column to get the variable label (default to label)
verbose_name	if TRUE, displays a warning if a variable name is not found in data_label
verbose_label	if TRUE, displays a warning if a label is not found in .tbl
verbose	deprecated

**Value**

A dataframe, as .tbl, with labels  
 .tbl invisibly. Used only for its side effects.

**Author(s)**

Dan Chaitiel  
 Dan Chaitiel

**See Also**

[get\\_label\(\)](#), [set\\_label\(\)](#), [remove\\_label\(\)](#), [save\\_labels\(\)](#)

**Examples**

```
#import the labels from a data.frame to another
iris_label = data.frame(
  name=c("Sepal.Length", "Sepal.Width",
        "Petal.Length", "Petal.Width", "Species"),
  label=c("Length of Sepals", "Width of Sepals",
         "Length of Petals", "Width of Petals", "Specie name")
)
iris %>%
  import_labels(iris_label) %>%
  crosstable

#save the labels, use some dplyr label-removing function, then retrieve the labels
library(dplyr)
mtcars2 %>%
  save_labels() %>%
  transmute(dispatch=as.numeric(dispatch)+1) %>%
  import_labels(verbose_label=FALSE) %>% #
  crosstable(dispatch)
```

---

iris2

*Modified iris dataset*

---

## Description

Modified iris dataset so:

- every column is labelled (using label attribute from expss package, compatible with Hmisc package)
- Species column is considered as factor

See [iris](#) for more informations on the original "Edgar Anderson's Iris Data" dataset.

## Usage

```
iris2
```

## Format

A data frame with 150 observations on 5 variables with labels.

## Source

```
library(dplyr)
iris2 = iris %>%
  mutate_at("Species", factor) %>%
  expss::apply_labels( #I also could have used [import_labels] or even `Hmisc::label`
    Species = "Specie",
    Sepal.Length = "Length of Sepal",
    Sepal.Width = "Width of Sepal",
    Petal.Length = "Length of Petal",
    Petal.Width = "Width of Petal"
  ) %>%
  as_tibble()
```

## Examples

```
library(crosstable)
ct=crosstable(iris2, by=Species)
ct
as_flextable(ct)
```

---

mtcars2	<i>Modified mtcars dataset</i>
---------	--------------------------------

---

## Description

Modified mtcars dataset so:

- every column is labelled (using label attribute from expss package, compatible with Hmisc package)
- gear and cyl columns are considered as numerical factors
- vs and am columns are considered as character vector

See [mtcars](#) for more informations on the original "Motor Trend Car Road Tests" dataset.

## Usage

```
mtcars2
```

## Format

A data frame with 32 observations on 11 variables with labels.

## Source

```
library(dplyr)
mtcars2 = mtcars %>%
  mutate(vs=ifelse(vs==0, "vshaped", "straight"),
         am=ifelse(am==0, "auto", "manual")) %>%
  mutate_at(c("cyl", "gear"), factor) %>%
  expss::apply_labels( #I also could have used [import_labels] or even `Hmisc::label`
    mpg="Miles/(US) gallon",
    cyl="Number of cylinders",
    disp="Displacement (cu.in.)",
    hp="Gross horsepower",
    drat="Rear axle ratio",
    wt="Weight (1000 lbs)",
    qsec="1/4 mile time",
    vs="Engine",
    am="Transmission",
    gear="Number of forward gears",
    carb="Number of carburetors"
  )
```

## Examples

```
library(crosstable)
ct=crosstable(mtcars2, by=vs)
ct
as_flextable(ct)
```

---

N	<i>Return the number of non NA observations</i>
---	---

---

**Description**

Return the number of non NA observations

**Usage**

N(x)

**Arguments**

x                    a vector

**Value**

integer, number of non NA observations

**Author(s)**

David Hajage

---

na	<i>Return the number of NA observations</i>
----	---

---

**Description**

Return the number of NA observations

**Usage**

na(x)

**Arguments**

x                    a vector

**Value**

integer, number of NA observations

**Author(s)**

David Hajage



---

peek	<i>Open a crosstable in a temporary document</i>
------	--

---

**Description**

This eases copy-pasting

**Usage**

```
peek(x, docx = getOption("crosstable_peek_docx", TRUE), ...)
```

**Arguments**

x	a crosstable
docx	if true, peek as a docx, else, peek as xlsx
...	passed on to <code>as_flextable.crosstable()</code> or to <code>as_workbook()</code>

**Value**

Nothing, called for its side effects

**Author(s)**

Dan Chaltiel

---

plim	<i>Format p values (alternative to <a href="#">format.pval()</a>)</i>
------	---

---

**Description**

Format p values (alternative to [format.pval\(\)](#))

**Usage**

```
plim(p, digits = 4)
```

**Arguments**

p	p values
digits	number of digits

**Value**

formatted p values

**Author(s)**

David Hajage

**See Also**

[format.pval\(\)](https://stackoverflow.com/a/23018806/3888000), <https://stackoverflow.com/a/23018806/3888000>

---

remove\_labels

*Remove all label attributes.*

---

**Description**

Use `remove_labels()` to remove the label from an object or to recursively remove all the labels from a collection of objects (such as a list or a `data.frame`).

This can be useful with functions reacting badly to labelled objects.

**Usage**

```
remove_labels(x)
```

**Arguments**

x                    object to unlabel

**Value**

An object of the same type as `x`, with no labels

**Author(s)**

Dan Chaltiel

**See Also**

[get\\_label](#), [set\\_label](#), [import\\_labels](#), [expss::unlab](#)

**Examples**

```
mtcars2 %>% remove_labels %>% crosstable(mpg) #no label
mtcars2$hp %>% remove_labels %>% get_label() #NULL
```

---

`rename_dataframe_with_labels`*Rename every column of a dataframe with its label*

---

**Description**

Rename every column of a dataframe with its label

**Usage**

```
rename_dataframe_with_labels(df)
```

**Arguments**

`df` a data.frame

**Value**

A dataframe, as `df`, which names are copied from the label attribute

**Author(s)**

Dan Chaltiel

**Examples**

```
library(dplyr)
mtcars2 %>%
  select(1:5) %>%
  rename_dataframe_with_labels()
```

---

`set_label`*Set the "label" attribute of an object*

---

**Description**

Set the "label" attribute of an object

Copy the label from one variable to another

**Usage**

```
set_label(x, value, object = FALSE)
```

```
copy_label_from(x, from)
```

**Arguments**

x	the variable to label
value	value of the label. If x is a list/data.frame, all the labels will be set recursively
object	if x is a list/data.frame, object=TRUE will force setting the labels of the object instead of the children
from	the variable whose label must be copied

**Value**

An object of the same type as x, with labels

An object of the same type as x, with the label of from

**Author(s)**

Dan Chaltiel

Dan Chaltiel

**See Also**

[get\\_label\(\)](#), [import\\_labels\(\)](#), [remove\\_label\(\)](#)

**Examples**

```
library(dplyr)
mtcars %>%
  mutate(mpg2=set_label(mpg, "Miles per gallon"),
         mpg3=mpg %>% copy_label_from(mpg2)) %>%
  crosstable(c(mpg, mpg2, mpg3))
mtcars %>%
  copy_label_from(mtcars2[,1:11]) %>%
  crosstable(c(mpg, vs))
```

---

summaryFunctions

*Summary functions*

---

**Description**

Summary functions to use with [crosstable\(\)](#) or anywhere else.

**Usage**

```
meansd(x, na.rm = TRUE, dig = 2, ...)
meanCI(x, na.rm = TRUE, dig = 2, level = 0.95, format = TRUE, ...)
mediqr(x, na.rm = TRUE, dig = 2, format = TRUE, ...)
minmax(x, na.rm = TRUE, dig = 2, ...)
nna(x)
```

**Arguments**

x	a numeric vector
na.rm	TRUE as default
dig	number of digits
...	params to pass on to <a href="#">format_fixed()</a> : <ul style="list-style-type: none"> <li>• <code>zero_digits</code> (default=1): the number of significant digits for values rounded to 0 (set to NULL to keep the original 0 value)</li> <li>• <code>only_round</code> (default=FALSE): use <a href="#">round()</a> instead of <a href="#">format_fixed()</a></li> </ul>
level	the confidence level required
format	a sugar argument. If FALSE, the function returns a list instead of a formatted string

**Value**

a character vector

**Functions**

- `meansd`: returns mean and std error
- `meanCI`: returns mean and confidence interval
- `mediqr`: returns median and IQR
- `minmax`: returns minimum and maximum
- `nna`: returns number of observations and number of missing values

**Fixed format**

These functions use [format\\_fixed\(\)](#) which allows to have trailing zeros after rounded values. In the case when the output of rounded values is zero, the use of the `zero_digits` argument allows to keep some significant digits for this specific case only.

**Author(s)**

Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage  
Dan Chaltiel, David Hajage

**See Also**

[format\\_fixed\(\)](#)

**Examples**

```
meansd(iris$Sepal.Length, dig=3)
meanCI(iris$Sepal.Length)
minmax(iris$Sepal.Length, dig=3)
mediqr(iris$Sepal.Length, dig=3)
nna(iris$Sepal.Length)

#arguments for format_fixed
x = iris$Sepal.Length/10000 #closer to zero

meansd(x, dig=3)
meansd(x, dig=3, zero_digits=NULL) #or NA
meansd(x, dig=3, only_round=TRUE)
options("crosstable_only_round"=TRUE)
meansd(x, dig=3, zero_digits=2)
options("crosstable_only_round"=NULL)
meanCI(mtcars2$x_date)

#dates
x = as.POSIXct(mtcars$qsec*3600*24 , origin="2010-01-01")
meansd(x)
minmax(x, date_format="%d/%m/%Y")
```

---

test\_correlation\_auto *test for correlation coefficients*

---

**Description**

test for correlation coefficients

**Usage**

```
test_correlation_auto(x, by, method)
```

**Arguments**

x	vector
by	another vector
method	"pearson", "kendall", or "spearman"

**Value**

the correlation test with appropriate method

**Author(s)**

Dan Chaltiel, David Hajage

---

test\_summarize\_auto    *test for mean comparison*

---

**Description**

Compute a oneway.test (with equal or unequal variance) or a kruskal.test as appropriate.

**Usage**

```
test_summarize_auto(x, g)
```

**Arguments**

x	vector
g	another vector

**Value**

a list with two components: p.value and method

**Author(s)**

Dan Chaltiel, David Hajage

test\_summarize\_linear\_contrasts

*Test for linear trend across ordered factor with contrasts*

---

### Description

Test for linear trend across ordered factor with contrasts

### Usage

```
test_summarize_linear_contrasts(x, y)
```

### Arguments

x	vector
y	ordered factor

### Value

a list with two components: p.value and method

### Author(s)

Dan Chaltiel

### Examples

```
library(dplyr)
my_test_args=crosstable_test_args()
my_test_args$test_summarize = test_summarize_linear_contrasts
iris %>%
  mutate(Petal.Width.qt = paste0("Q", ntile(Petal.Width, 5)) %>% ordered()) %>%
  crosstable(Petal.Length ~ Petal.Width.qt, test=TRUE, test_args = my_test_args)
```

---

test\_survival\_logrank *test for survival comparison*

---

### Description

Compute a logrank test

### Usage

```
test_survival_logrank(formula)
```



**Arguments**

formula            a formula

**Value**

a list with two components: p.value and method

**Author(s)**

Dan Chaltiel, David Hajage

---

test\_tabular\_auto        *test for contingency table*

---

**Description**

Compute a chisq.test, a chisq.test with correction of continuity or a fisher test as appropriate

**Usage**

test\_tabular\_auto(x, y)

**Arguments**

x                    vector  
y                    another vector

**Value**

a list with two components: p.value and method

**Author(s)**

Dan Chaltiel, David Hajage

---

write_and_open	<i>Alternative to default officer print() function. Write the file and try to open it right away.</i>
----------------	---

---

### Description

As it tests if the file is writable, this function also prevents `officer:::print.rdocx()` to abort the RStudio session.

### Usage

```
write_and_open(doc, docx.file)
```

### Arguments

doc	the docx object
docx.file	the name of the target file. If missing or NULL, the doc will open in a temporary file.

### Value

Nothing, called for its side effects

### Author(s)

Dan Chaltiel

### Examples

```
library(officer)
library(crosstable)
mytable = crosstable(mtcars2)
doc = read_docx() %>%
  body_add_crosstable(mytable)

write_and_open(doc)
## Not run:
write_and_open(doc, "example.docx")

## End(Not run)
```

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