

# Package ‘ezfun’

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**Title** Emily C. Zabor's functions

**Version** 0.1.3

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**Description** This package contains a number of functions that generate and format results of common procedures for clinical projects into table form for printing in R Markdown Word documents. A few basic utility functions for common procedures are also included.

**Depends** R (>= 3.1.0)

**License** GPL-2

**LazyData** TRUE

**Imports** survival, aod, cmprsk, clinfun, shiny, lme4

**RoxygenNote** 6.0.1

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bycont	<i>Table of one or more categorical variables by a single continuous variable</i>
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### Description

bycont takes a list of categorical variables and returns median(min, max) of the single continuous variable within each level of each categorical variable. Computes Kruskal-Wallis p-values.

### Usage

```
bycont(catvars, contvar, dat, pval = TRUE)
```

### Arguments

catvars	is a list of the categorical variables for the rows of the table e.g. list('Gene1', 'Gene2')
contvar	is the continuous variable you want summarized by each categorical variable. Must be in quotes.
dat	is the dataset to use for analysis
pval	takes the value TRUE or FALSE indicating whether p-values should be computed. Defaults to TRUE. When TRUE, Kruskal-Wallis p-values are produced.

### Value

Returns a dataframe

### Author(s)

Emily C Zabor <zabore@mskcc.org>

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ez_pal	<i>A custom color scale made by Emily Zabor, with help from Coolors app</i>
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### Description

Basically copying code from hrbrmstr/hrbrthemes colors.r

### Usage

```
ez_pal()
```

### Examples

```
library(scales)
scales::show_col(ez_pal()(9))
```

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lowerchar	<i>Convert to lowercase</i>
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**Description**

lowerchar converts the levels of character variables from upper or mixed case to lower case

**Usage**

```
lowerchar(dfname)
```

**Arguments**

dfname                    is the name of the dataframe on which to perform the action

**Value**

Nothing is returned from lowerchar, the action is simply performed on the columns of dataframe dfname

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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mvcoxres	<i>Format results from multivariable Cox regression model</i>
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**Description**

mvcoxres takes a multivariable Cox regression object and formats the resulting HR (95% CI) and p-values into a table

**Usage**

```
mvcoxres(mod)
```

**Arguments**

mod                    is a multivariable Cox regression object

**Value**

Returns a dataframe

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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mvcrres	<i>Format results from multivariable competing risks regression model</i>
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**Description**

mvcrres takes a multivariable competing risks regression object and puts the resulting HR (95% CI) and p-values into a table

**Usage**

```
mvcrres(mod)
```

**Arguments**

mod is a multivariable Cox regression object

**Value**

Returns a dataframe

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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mvlogitres	<i>Format results from multivariable Cox regression model</i>
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**Description**

mvlogitres takes a multivariable logistic regression object and formats the resulting OR (95% CI) and p-values into a table

**Usage**

```
mvlogitres(mod)
```

**Arguments**

mod is a multivariable logistic regression object from glm

**Value**

Returns a dataframe

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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`ph2simonApp`*Interactive Simon's 2-stage Shiny app*

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### Description

`ph2simonApp` is simply a Shiny interface for the `ph2simon` function from the `clinfun` package. No arguments need to be passed to the function.

### Usage

```
ph2simonApp()
```

### Value

The output includes 1) fields to enter the design parameters for the Simon 2-stage Phase II design, 2) R output with `ph2simon` results, 3) a paragraph interpreting the results, and 4) a plot of maximum versus expected number of patients indicating the optimal and minimax results.

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`scale_colour_ez`*Discrete color & fill scales based on the ez palette*

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### Description

See `ez_pal`.

### Usage

```
scale_colour_ez(...)
```

```
scale_color_ez(...)
```

```
scale_fill_ez(...)
```

### Arguments

... Other arguments passed on to `discrete_scale` to control name, limits, breaks, labels and so forth.

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sdp	<i>Get p-value from survdiff()</i>
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**Description**

sdp returns the p-value from the survdiff function

**Usage**

```
sdp(sd)
```

**Arguments**

sd is a survdiff object

**Value**

Returns a p-value rounded to 3 digits or "<.001" if the p-value is <.001

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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tab1	<i>Table 1</i>
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**Description**

tab1 takes lists of continuous and/or categorical variables and returns Median (spread) for continuous variables and N (%) for categorical variables. Produces a table with both an overall column and columns by another variable.

**Usage**

```
tab1(contvars, catvars, byvar, dat, col = TRUE, spread = "range",
     pval = TRUE, fisher = TRUE)
```

**Arguments**

contvars	is a list of the continuous variables you want in the rows e.g. list('Age'). Can be NULL.
catvars	is a list of the categorical variables you want in the rows e.g. list('Gender','Race'). Can be NULL.
byvar	is the categorical variable you want to tabulate by across the columns (needs to be in quotes). Can be NULL.
dat	is the dataset to use for analysis
col	takes the value TRUE or FALSE indicating whether you want column percent (TRUE, default) or row percent (FALSE)

spread	takes the value "range" or "iqr" indicating whether you want (min, max) or (Q1, Q3) in summaries of continuous variables. Defaults to "range".
pval	takes the value TRUE or FALSE indicating whether p-values should be included. Defaults to TRUE. If TRUE, <code>kruskal.test</code> p-values are produced for continuous variables and either <code>fisher.test</code> or <code>chisq.test</code> p-values are produced for categorical variables. See <code>param</code> for testing details for categorical variables.
fisher	takes the value TRUE or FALSE. If TRUE, <code>fisher.test</code> p-values are produced. If FALSE, <code>chisq.test</code> p-values are produced.

### Value

Returns a dataframe. If there are warnings or errors from `kruskal.test`, `fisher.test`, or `chisq.test` then NA is returned in place of the p-value.

### Author(s)

Emily C Zabor <zabore@mskcc.org>

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tab1_re	<i>Table 1 with random effects model p-values</i>
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### Description

`tab1_re` takes lists of continuous and/or categorical variables and returns Median (spread) for continuous variables and N (%) for categorical variables. Produces a table with both an overall column and columns by another variable. For a binary by variable only, it produces p-values from a random effects model.

### Usage

```
tab1_re(contvars, catvars, byvar, re, dat, col = TRUE, spread = "range")
```

### Arguments

contvars	is a list of the continuous variables you want in the rows e.g. <code>list('Age')</code> . Can be NULL.
catvars	is a list of the categorical variables you want in the rows e.g. <code>list('Gender','Race')</code> . Can be NULL.
byvar	is the categorical variable you want to tabulate by across the columns (needs to be in quotes). MUST BE 0/1 since it will be used as the outcome variable in <code>glmer</code> .
dat	is the dataset to use for analysis
col	takes the value TRUE or FALSE indicating whether you want column percent (TRUE, default) or row percent (FALSE)
spread	takes the value "range" or "iqr" indicating whether you want (min, max) or (Q1, Q3) in summaries of continuous variables. Defaults to "range".

### Value

Returns a dataframe. If there are warnings or errors from `glmer` then NA is returned in place of the p-value.

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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tabna	<i>Cross-tabulation with useNA = "ifany"</i>
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**Description**

tabna is an implementation of table with argument useNA = "ifany"

**Usage**

```
tabna(...)
```

**Arguments**

... the function takes any standard arguments to table

**Details**

See the help file for table for detailed information about possible arguments to the function

**Value**

tabna returns a contingency table with NAs included, if any

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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theme_ezbasic	<i>Basic theme preferences for ggplot</i>
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**Description**

Basic theme preferences for ggplot

**Usage**

```
theme_ezbasic()
```



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todate	<i>Convert to date format</i>
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### Description

todate converts any POSIXct format variables in the dataframe to date format

### Usage

```
todate(dfname)
```

### Arguments

dfname                      is the name of the dataframe on which to perform the action

### Details

Note that this function will mainly apply to dataframes imported using the read\_excel function from the readxl package. Dataframes imported using, for example, read.csv instead will have dates in character format and therefore todate will not apply.

### Value

Nothing is returned from todate, the action is simply performed on the columns of dataframe dfname

### Author(s)

Emily C Zabor <zabore@mskcc.org>

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uvcoxph	<i>Table of univariable Cox regression results</i>
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### Description

uvcoxph takes lists of continuous and/or categorical variables, runs a univariable coxph model for each, and puts the resulting HR (95% CI) and p-value into a table suitable for printing in a Word R Markdown file.

### Usage

```
uvcoxph(contvars, catvars, event, time, dat)
```

### Arguments

contvars	is a list of the continuous variables you want in the rows e.g. list('Age')
catvars	is a list of the categorical variables you want in the rows e.g. list('Gender','Race')
event	is the event indicator (needs to be in quotes)
time	is the survival time variables (needs to be in quotes)
dat	is the dataset for analysis

**Value**

Returns a dataframe. If there are warnings or errors from coxph then blank rows are returned.

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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uvcrr	<i>Table of univariable competing risks regression results</i>
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**Description**

uvcrr takes lists of continuous and/or categorical variables, runs a univariable crr model for each, and puts the resulting HR (95% CI) and p-value into a table suitable for printing in a Word R Markdown file.

**Usage**

```
uvcrr(contvars, catvars, event, time, dat)
```

**Arguments**

contvars	is a list of the continuous variables you want in the rows e.g. list('Age')
catvars	is a list of the categorical variables you want in the rows e.g. list('Gender','Race')
event	is the event indicator (needs to be in quotes)
time	is the survival time variables (needs to be in quotes)
dat	is the dataset for analysis

**Details**

uvcrr uses all function defaults to crr. For example, the failure code is set to 1. See the help file for crr for additional details.

**Value**

Returns a dataframe. If there are warnings or errors from crr then blank rows are returned.

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

uvlm

*Table of univariable linear regression results***Description**

uvlm takes lists of continuous and/or categorical variables, calls `lm` to run a linear regression model for each, and returns a table with Est (SE) and p-value for each variable that is suitable for printing in a Word R Markdown file.

**Usage**

```
uvlm(contvars, catvars, out, dat)
```

**Arguments**

contvars	is a list of the continuous variables you want in the rows e.g. <code>list('Age')</code>
catvars	is a list of the categorical variables you want in the rows e.g. <code>list('Gender','Race')</code>
out	is the continuous outcome variable (needs to be in quotes)
dat	is the dataset for analysis

**Value**

Returns a dataframe. If there are warnings or errors from `lm` then blank rows are returned.

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

uvlogit

*Table of univariable logistic regression results***Description**

uvlogit takes lists of continuous and/or categorical variables, calls `glm` to run a logistic regression model for each, and returns a table with OR (95 Word R Markdown file).

**Usage**

```
uvlogit(contvars, catvars, out, dat)
```

**Arguments**

contvars	is a list of the continuous variables you want in the rows e.g. <code>list('Age')</code>
catvars	is a list of the categorical variables you want in the rows e.g. <code>list('Gender','Race')</code>
out	is the binary outcome variable. Must be coded 0/1. (needs to be in quotes)
dat	is the dataset for analysis

**Value**

Returns a dataframe. If there are warnings or errors from `glm` then blank rows are returned.

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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uvsurv	<i>Table of univariable survival analysis results</i>
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**Description**

uvsurv takes lists of continuous and/or categorical variables. For continuous variables, `coxph` returns HR (95% CI) and log-rank p-values. For categorical variables, `coxph` returns HR (95% CI) and log-rank p-values and `survfit` produces median survival (95% CI) and a survival estimate at a specified time. Results are put into a table suitable for printing in a Word R Markdown file.

**Usage**

```
uvsurv(contvars, catvars, event, time, test, dat)
```

**Arguments**

contvars	is a list of the continuous variables you want in the rows e.g. <code>list('Age')</code>
catvars	is a list of the categorical variables you want in the rows e.g. <code>list('Gender','Race')</code>
event	is the survival event indicator (needs to be in quotes)
time	is the survival time variable (needs to be in quotes)
test	is the timepoint you would like to estimate, in whatever units the survival time is in
dat	is the dataset to use for analysis

**Value**

Returns a dataframe

**Author(s)**

Emily C Zabor <zabore@mskcc.org>

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