

Package ‘survout’

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Type Package

Title Excel Conversion of R Survival Analysis Output

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Description Simple and quick method of exporting the most often used survival analysis results to an Excel sheet.

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Imports cmprsk, dplyr, openxlsx, stats, survival, tibble

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crisk_cat	<i>Modify the Output for Uni-variable and Multi-variable Competing Risk Analysis (Categorical Only)</i>
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Description

This function generates a table of competing risk analysis result with number of patients, number of event, number of competing event,

Usage

```
crisk_cat(  
  csurv,  
  cevent,  
  cvars,  
  gnames,  
  month = 0,  
  y1 = TRUE,  
  y2 = TRUE,  
  y5 = TRUE  
)
```

Arguments

csurv	the duration of follow-up time in months.
cevent	the status indicator, which is generally 0 = alive, 1 = event, 2 = other event
cvars	a vector, which has the variable's values (categorical only)
gnames	a text string, which is the name of the variable.
month	a number to get the month-rate of competing risk.
y1	logical value indicating whether the 1-year competing risk rate should be reported.
y2	logical value indicating whether the 2-year competing risk rate should be reported.
y5	logical value indicating whether the 5-year competing risk rate should be reported.

Value

a tibble of competing risk analysis output.

Examples

```
Dat <- MASS::Melanoma  
Dat$time <- Dat$time/30.5  
output <- risk_cat(Dat$time, Dat$status, Dat$ulcer, "ulcer")
```

crisk_con	<i>Modify the Output for Uni-variable and Multi-variable Competing Risk Analysis (Continuous and Ordinal Only)</i>
-----------	--

Description

This function generates a table of competing risk analysis result with HR (95% Confidence Interval), P value.

Usage

```
crisk_con(csurv, cevent, cvars, gnames)
```

Arguments

csurv	the duration of follow-up time in months.
cevent	the status indicator, which is generally 0 = alive, 1 = event, 2 = other event
cvars	a matrix, which has the variables' values (continuous and ordinal only)
gnames	a text vector, which are the names of the variables.

Value

a dataframe containing HRs (with 95% Confidence Intervals) and P values

Examples

```
Dat <- MASS::Melanoma
Dat$time <- Dat$time/30.5
X <- cbind(Dat$age, Dat$thickness)
Gnames <- c('age', 'thickness')
output <- risk_con(Dat$time, Dat$status, X, Gnames)
```

crisk_multi	<i>Modify the Output for a Multi-variable Competing Risk Analysis .</i>
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Description

Create a table with the general multi-variable competing risk analysis results, including the HR (95 percent CI), P value.

Usage

```
crisk_multi(dat, csurv, cevent, convars = NULL, catvars = NULL)
```

Arguments

dat	a data.frame in which to interpret the variables.
csurv	this is the follow up time.
cevent	the status indicator, normally 0=alive, 1=dead.
convars	a vector of con variable names.
catvars	a vector of cat variable names.

Value

a tibble of competing risk analysis output.

Examples

```
Dat <- MASS::Melanoma
Dat$time <- Dat$time/30.5
con_var <- c("age", "thickness")
cat_var <- c("sex", "ulcer")
multi_out <- crisk_multi(Dat, "time", "status", catvars = cat_var, convars = con_var)
```

crisk_multiuni	<i>Modify the Output for Multiple Uni-variable Competing Risk Analysis</i>
----------------	--

Description

This function generates a table of competing risk analysis result with number of patients, number of event, number of competing event,

Usage

```
crisk_multiuni(
  dat,
  csurv,
  cevent,
  catvars = NULL,
  convars = NULL,
  ordvars = NULL,
  y1 = TRUE,
  y2 = TRUE,
  y5 = TRUE,
  month = 0
)
```

Arguments

dat	a data.frame in which to interpret the variables.
csurv	this is the follow up time.
cevent	the status indicator, normally 0=alive, 1=dead.
catvars	a vector of cat variable names.
convars	a vector of con variable names.
ordvars	a vector of ordinal variable names.
y1	logical value indicating whether the 1-year competing risk rate should be reported.
y2	logical value indicating whether the 2-year competing risk rate should be reported.
y5	logical value indicating whether the 5-year competing risk rate should be reported.
month	a number to get the month-rate of competing risk.

Value

a tibble of competing risk analysis output.

Examples

```
Dat <- MASS::Melanoma
Dat$time <- Dat$time/30.5
Dat$ulcer <- as.factor(Dat$ulcer)
con_var <- c("age")
ord_var <- c("ulcer")
cat_var <- c("sex")
uni_out <- crisk_multiuni(Dat, "time", "status", cat_var, con_var, ord_var)
```

crisk_ord	<i>Modify the Output for Uni-variable and Multi-variable Competing Risk Analysis (Ordinal Only)</i>
-----------	---

Description

This function generates a table of competing risk analysis result with number of patients, number of event, number of competing event,

Usage

```
crisk_ord(
  csurv,
  cevent,
  cvars,
  gnames,
  month = 0,
  y1 = TRUE,
  y2 = TRUE,
  y5 = TRUE
)
```

Arguments

csurv	the duration of follow-up time in months.
cevent	the status indicator, which is generally 0 = alive, 1 = event, 2 = other event
cvars	a vector, which has the variable's values (ordinal only)
gnames	a text string, which is the name of the variable.
month	a number to get the month-rate of competing risk.
y1	logical value indicating whether the 1-year competing risk rate should be reported.
y2	logical value indicating whether the 2-year competing risk rate should be reported.
y5	logical value indicating whether the 5-year competing risk rate should be reported.

Value

a tibble of competing risk analysis output.

Examples

```
Dat <- MASS::Melanoma
Dat$time <- Dat$time/30.5
output <- risk_ord(Dat$time, Dat$status, as.factor(Dat$year), "year")
```

factor2ind

Make An Integer Matrix Out of A Factor Variable.

Description

Create an indicator matrix of dimension $\text{length}(x) \times (\text{nlevels}(x)-1)$ with the column corresponding to the baseline level removed (by default the first level is used as baseline).

Usage

```
factor2ind(x, baseline)
```

Arguments

x a variable.
baseline a string indicating the reference level.

Value

a matrix

Examples

```
x = gl(4, 2, labels = c("A", "B", "C", "D"))  
factor2ind(x)  
factor2ind(x, "C")
```

p2excel

Export the A Single Dataframe to An Excel Sheet

Description

The function saves a dataframe into an excel sheet with a predetermined format.

Usage

```
p2excel(  
  tabname = "Default",  
  datastable,  
  tablename = "Default",  
  filename = "Default.xlsx"  
)
```

Arguments

tabname a string with the tab's name.
datastable the dataframe that will be exported to Excel.
tablename a string containing the table label and title, which will appear as the first row
filename the name of the spreadsheet

Value

a spreadsheet containing an exported tables

p2excel_pre

Prepare to Export the Dataframe to An Excel Sheet.

Description

The function saves the dataframe as a tab and prepares it for output into an excel sheet with a predetermined format.

Usage

```
p2excel_pre(tabname = "Default", datastable, tablename = "Default", filename)
```

Arguments

tabname	a string with the tab's name.
datastable	the dataframe that will be exported to Excel.
tablename	a string containing the table label and title, which will appear as the first row
filename	the name of the spreadsheet

Value

a spreadsheet containing all of the exported tables

Examples

```
Dat <- survival::lung
results <- surv_uni_cat(Dat, "time", "status", "sex", report_index = TRUE)
wb <- openxlsx::createWorkbook()
wb <- p2excel_pre("survival_results",results,"Table 1. Overall Survival anlysis",wb)
## Not run:
## saveWorkbook(wb, file = "os.xlsx", overwrite = TRUE)
## End(Not run)
```

surv_multi

Modify the Output for a Multi-variable Survival Analysis.

Description

Create a table with the general multi-variable survival analysis results, including the HR (95 percent CI), P value.

Usage

```
surv_multi(...)
```

Arguments

... arguments will be passed to coxph

Value

a dataframe containing coxph output that includes variable names, HRs (95

Examples

```
Dat <- survival::lung
surv_multi(survival::Surv(time, status) ~ as.factor(sex) + age + meal.cal, data = Dat)
```

surv_multiuni

Modify the Output for Multiple Uni-variable Survival Analysis

Description

This function generates a table with the general survival analysis results, including the number of total patients, the number of events, the estimated median, the 1,2,5 year rate, the HR (95 percent confidence interval), the P value, the AIC, and the C index. This function just modifies the output table's format.

Usage

```
surv_multiuni(
  dat,
  stime,
  sevent,
  catvars = NULL,
  convars = NULL,
  y1 = TRUE,
  y2 = TRUE,
  y5 = TRUE,
  medianCI = FALSE,
  report_index = FALSE
)
```

Arguments

dat	a dat.frame.
stime	the duration of follow-up time in months.
sevent	the status indicator, which is generally 0 = alive, 1 = dead.
catvars	a vector of categorical variable names.
convars	a vector of continuous variables names.
y1	logical value indicating whether the 1-year survival rate should be reported.

y2	logical value indicating whether the 2-year survival rate should be reported.
y5	logical value indicating whether the 5-year survival rate should be reported.
medianCI	logical value indicating whether the 95 percent confidence interval of projected median survival should be reported.
report_index	logical value indicating if to report the show AIC and C index.

Value

A tibble of survival output

Examples

```
Dat <- survival::lung
convars <- c("age", "meal.cal")
catvars <- c("sex")
surv_multiuni(Dat, "time", "status", catvars, convars, medianCI = TRUE)
```

surv_uni_cat

Modify the Survival Output for a Categorical Variable.

Description

This function generates a table with the general survival analysis results, including the number of total patients, the number of events, the estimated median, the 1,2,5 year rate, the HR (95 percent confidence interval), the P value, the AIC, and the C index. This function just modifies the output table's format.

Usage

```
surv_uni_cat(
  dat,
  stime,
  sevent,
  svar,
  month = 0,
  medianCI = TRUE,
  y1 = TRUE,
  y2 = TRUE,
  y5 = TRUE,
  report_index = FALSE
)
```

Arguments

dat	a data.frame.
stime	the duration of follow-up time in months.
sevent	the status indicator, which is generally 0 = alive, 1 = dead.
svar	a variable name.
month	a number to get the month-rate of survival.
medianCI	logical value indicating whether the 95 percent confidence interval of projected median survival should be reported.
y1	logical value indicating whether the 1-year survival rate should be reported.
y2	logical value indicating whether the 2-year survival rate should be reported.
y5	logical value indicating whether the 5-year survival rate should be reported.
report_index	logical value indicating if to report the show AIC and C index.

Value

a tibble of survival output

Examples

```
Dat <- survival::lung
surv_uni_cat(Dat, "time", "status", "sex", report_index = TRUE)
```

surv_uni_con

Modify the Survival Output for a Continuous Variable.

Description

This function generates a table with the general survival analysis results, including the number of total patients, the number of events, the P value, the AIC, and the C index. This function just modifies the output table's format.

Usage

```
surv_uni_con(dat, stime, sevent, svar, report_index = FALSE)
```

Arguments

dat	a data.frame.
stime	the duration of follow-up time in months.
sevent	the status indicator, which is generally 0 = alive, 1 = dead.
svar	a variable name.
report_index	logical value indicating if to report the show AIC and C index.

Value

a tibble of survival results.

Examples

```
Dat <- survival::lung  
surv_uni_con(Dat, "time", "status", "age", report_index = TRUE)
```

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