reportRx TestFile

03 February, 2022

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# Introduction

Citations can be made like this for R packages ([Bel and Xu 2013](#ref-R-reportRx)), or ([R Core Team 2021](#ref-R-base)) for the R language itself. Other citations must match those found in your master bibfile. See ?rmdBibfile.

First, make some changes to the lung data (cancer in the newer version of survival)

data(cancer, package='survival')  
lung <- cancer  
  
lung <- lung %>%  
 mutate(  
 Status=factor(status-1),  
 Sex = factor(sex,labels = c('Male','Female')),  
 AgeGroup = cut(age, breaks=seq(0,100,10)),  
 OneLevelFactor = factor(x='one level')  
 ) %>%  
 arrange(Status)  
  
lung$x\_null = rnorm(nrow(lung))  
lung$x\_pred = c(rnorm(sum(lung$Status==0),0,1),  
 rnorm(sum(lung$Status==1),1,1))  
set.seed(1)  
test\_data = tibble(  
 y= rnorm(1000),  
 x0= geoR::rboxcox(1000, lambda=.5, mean=10, sd=2),  
 x1= x0+y  
)

# 1 Numbered Heading

## 1.1 Test covsum

Test Special characters in caption 80% $100.

|  |  |
| --- | --- |
| Covariate | n=228 |
| Status |  |
| 0 | 63 (28) |
| 1 | 165 (72) |
| Sex |  |
| Male | 138 (61) |
| Female | 90 (39) |
| age |  |
| Mean (sd) | 62.4 (9.1) |
| Median (Min,Max) | 63 (39,82) |
| AgeGroup |  |
| (0,10] | 0 (0) |
| (10,20] | 0 (0) |
| (20,30] | 0 (0) |
| (30,40] | 3 (1) |
| (40,50] | 23 (10) |
| (50,60] | 68 (30) |
| (60,70] | 88 (39) |
| (70,80] | 44 (19) |
| (80,90] | 2 (1) |
| (90,100] | 0 (0) |
| meal cal |  |
| Mean (sd) | 928.8 (402.2) |
| Median (Min,Max) | 975 (96,2600) |
| Missing | 47 |
| OneLevelFactor |  |
| one level | 228 (100) |

Summary sample statistics by Sex.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=228) | Male (n=138) | Female (n=90) | p-value |
| **Status** |  |  |  | **<0.001** |
| 0 | 63 (28) | 26 (19) | 37 (41) |  |
| 1 | 165 (72) | 112 (81) | 53 (59) |  |
| age |  |  |  | 0.057 |
| Mean (sd) | 62.4 (9.1) | 63.3 (9.1) | 61.1 (8.8) |  |
| Median (Min,Max) | 63 (39,82) | 64 (39,82) | 61 (41,77) |  |
| AgeGroup |  |  |  | 0.13 |
| (0,10] | 0 (0) | 0 (0) | 0 (0) |  |
| (10,20] | 0 (0) | 0 (0) | 0 (0) |  |
| (20,30] | 0 (0) | 0 (0) | 0 (0) |  |
| (30,40] | 3 (1) | 3 (2) | 0 (0) |  |
| (40,50] | 23 (10) | 11 (8) | 12 (13) |  |
| (50,60] | 68 (30) | 35 (25) | 33 (37) |  |
| (60,70] | 88 (39) | 58 (42) | 30 (33) |  |
| (70,80] | 44 (19) | 29 (21) | 15 (17) |  |
| (80,90] | 2 (1) | 2 (1) | 0 (0) |  |
| (90,100] | 0 (0) | 0 (0) | 0 (0) |  |
| **meal cal** |  |  |  | **0.022** |
| Mean (sd) | 928.8 (402.2) | 980.5 (413.3) | 840.7 (369.1) |  |
| Median (Min,Max) | 975 (96,2600) | 1025 (169,2600) | 925 (96,2450) |  |
| Missing | 47 | 24 | 23 |  |
| OneLevelFactor |  |  |  |  |
| one level | 228 (100) | 138 (100) | 90 (100) |  |

Make sure it still works when there are empty levels

In a covariate:

Summary sample statistics by Sex.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=228) | Male (n=138) | Female (n=90) | p-value |
| **Status** |  |  |  | **<0.001** |
| 0 | 63 (28) | 26 (19) | 37 (41) |  |
| 1 | 165 (72) | 112 (81) | 53 (59) |  |
| age |  |  |  | 0.057 |
| Mean (sd) | 62.4 (9.1) | 63.3 (9.1) | 61.1 (8.8) |  |
| Median (Min,Max) | 63 (39,82) | 64 (39,82) | 61 (41,77) |  |
| AgeGroup |  |  |  | 1 |
| (0,10] | 0 (0) | 0 (0) | 0 (0) |  |
| (10,20] | 0 (0) | 0 (0) | 0 (0) |  |
| (20,30] | 0 (0) | 0 (0) | 0 (0) |  |
| (30,40] | 3 (2) | 3 (2) | 0 (0) |  |
| (40,50] | 11 (8) | 11 (8) | 0 (0) |  |
| (50,60] | 35 (25) | 35 (25) | 0 (0) |  |
| (60,70] | 58 (42) | 58 (42) | 0 (0) |  |
| (70,80] | 29 (21) | 29 (21) | 0 (0) |  |
| (80,90] | 2 (1) | 2 (1) | 0 (0) |  |
| (90,100] | 0 (0) | 0 (0) | 0 (0) |  |
| Missing | 90 | 0 | 90 |  |
| **meal cal** |  |  |  | **0.022** |
| Mean (sd) | 928.8 (402.2) | 980.5 (413.3) | 840.7 (369.1) |  |
| Median (Min,Max) | 975 (96,2600) | 1025 (169,2600) | 925 (96,2450) |  |
| Missing | 47 | 24 | 23 |  |
| OneLevelFactor |  |  |  |  |
| one level | 228 (100) | 138 (100) | 90 (100) |  |

In the main covariate:

Summary sample statistics by Sex.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=138) | Male (n=138) | Female (n=0) | p-value |
| Status |  |  |  | 1 |
| 0 | 26 (19) | 26 (19) | 0 (0) |  |
| 1 | 112 (81) | 112 (81) | 0 (0) |  |
| age |  |  |  |  |
| Mean (sd) | 63.3 (9.1) | 63.3 (9.1) |  |  |
| Median (Min,Max) | 64 (39,82) | 64 (39,82) |  |  |
| AgeGroup |  |  |  | 1 |
| (0,10] | 0 (0) | 0 (0) | 0 (0) |  |
| (10,20] | 0 (0) | 0 (0) | 0 (0) |  |
| (20,30] | 0 (0) | 0 (0) | 0 (0) |  |
| (30,40] | 3 (2) | 3 (2) | 0 (0) |  |
| (40,50] | 11 (8) | 11 (8) | 0 (0) |  |
| (50,60] | 35 (25) | 35 (25) | 0 (0) |  |
| (60,70] | 58 (42) | 58 (42) | 0 (0) |  |
| (70,80] | 29 (21) | 29 (21) | 0 (0) |  |
| (80,90] | 2 (1) | 2 (1) | 0 (0) |  |
| (90,100] | 0 (0) | 0 (0) | 0 (0) |  |
| meal cal |  |  |  |  |
| Mean (sd) | 980.5 (413.3) | 980.5 (413.3) |  |  |
| Median (Min,Max) | 1025 (169,2600) | 1025 (169,2600) |  |  |
| Missing | 24 | 24 | 0 |  |
| OneLevelFactor |  |  |  |  |
| one level | 138 (100) | 138 (100) | 0 (0) |  |

The chi-square is the default setting, unless there are low counts, check that this works properly This should have two Chi-Sq tests:

Summary sample statistics by Sex.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=138) | Male (n=138) | Female (n=0) | p-value | StatTest |
| AgeGroup |  |  |  |  | Chi Sq |
| (0,10] | 0 (0) | 0 (0) | 0 (0) |  |  |
| (10,20] | 0 (0) | 0 (0) | 0 (0) |  |  |
| (20,30] | 0 (0) | 0 (0) | 0 (0) |  |  |
| (30,40] | 3 (2) | 3 (2) | 0 (0) |  |  |
| (40,50] | 11 (8) | 11 (8) | 0 (0) |  |  |
| (50,60] | 35 (25) | 35 (25) | 0 (0) |  |  |
| (60,70] | 58 (42) | 58 (42) | 0 (0) |  |  |
| (70,80] | 29 (21) | 29 (21) | 0 (0) |  |  |
| (80,90] | 2 (1) | 2 (1) | 0 (0) |  |  |
| (90,100] | 0 (0) | 0 (0) | 0 (0) |  |  |
| Status |  |  |  |  | Chi Sq |
| 0 | 26 (19) | 26 (19) | 0 (0) |  |  |
| 1 | 112 (81) | 112 (81) | 0 (0) |  |  |

Here age group should be analysed with a Fisher test:

Summary sample statistics by Sex.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=138) | Male (n=138) | Female (n=0) | p-value | StatTest |
| AgeGroup |  |  |  | 1 | Fisher Exact |
| (0,10] | 0 (0) | 0 (0) | 0 (0) |  |  |
| (10,20] | 0 (0) | 0 (0) | 0 (0) |  |  |
| (20,30] | 0 (0) | 0 (0) | 0 (0) |  |  |
| (30,40] | 3 (2) | 3 (2) | 0 (0) |  |  |
| (40,50] | 11 (8) | 11 (8) | 0 (0) |  |  |
| (50,60] | 35 (25) | 35 (25) | 0 (0) |  |  |
| (60,70] | 58 (42) | 58 (42) | 0 (0) |  |  |
| (70,80] | 29 (21) | 29 (21) | 0 (0) |  |  |
| (80,90] | 2 (1) | 2 (1) | 0 (0) |  |  |
| (90,100] | 0 (0) | 0 (0) | 0 (0) |  |  |
| Status |  |  |  | 1 | Fisher Exact |
| 0 | 26 (19) | 26 (19) | 0 (0) |  |  |
| 1 | 112 (81) | 112 (81) | 0 (0) |  |  |

If you need to run an rm\_ function in a loop, you need to use this structure: Unfortunately, this produces a NULL after each table. I haven’t figured out how to fix this yet, but it is on the todo list!

pander::panderOptions('knitr.auto.asis', FALSE)  
  
for (v in names(lung)[1:2]){  
 cat("\n")  
 print(rm\_covsum(data=lung,covs=v))  
 cat("\n")  
}

Summary sample statistics.

|  |  |
| --- | --- |
| Covariate | n=228 |
| inst |  |
| Mean (sd) | 11.1 (8.3) |
| Median (Min,Max) | 11 (1,33) |
| Missing | 1 |

NULL

Summary sample statistics.

|  |  |
| --- | --- |
| Covariate | n=228 |
| time |  |
| Mean (sd) | 305.2 (210.6) |
| Median (Min,Max) | 255.5 (5.0,1022.0) |

NULL

pander::panderOptions('knitr.auto.asis', TRUE)

## 1.2 Test plotuv

Figure 1.1 shows the bivariate relationships between the response and covariates. Figure referencing works only when a figure caption is provided in the chunk options. Note that underscores and not allowed in the chunk names, only hyphens.

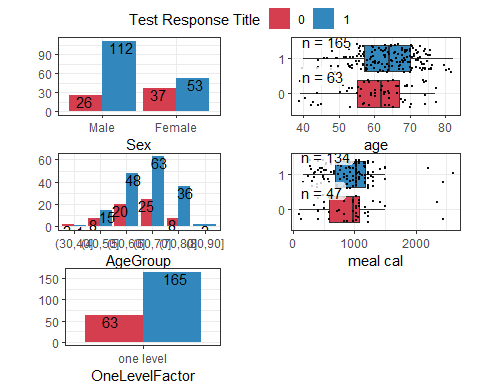


Figure 1.1: Associations between status and covariates in the lung data.

## 1.3 Tests for uvsum

### 1.3.1 Test logistic

Tables 1.1, 1.2 and 1.3 display the logistic regression results with different confidence interval widths. If the document in knit to pdf, the chank-lable option will not be used, instead the name of the chunk will be used in cross-referening. For Word tables the chunk label needs to be added into the function call.

Table 1.1: Univariate analysis of predictors of Status.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | OR(95%CI) | p-value | N |
| **age** | **1.04 (1.00,1.07)** | **0.025** | **228** |
| **Sex** |  | **<0.001** | **228** |
| Male | Reference |  | 138 |
| Female | 0.33 (0.18,0.61) |  | 90 |
| wt loss | 1.01 (0.98,1.03) | 0.61 | 214 |

Table 1.2: Univariate analysis of predictors of Status.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | OR(90%CI) | p-value | N |
| **age** | **1.04 (1.01,1.07)** | **0.025** | **228** |

Table 1.3: Univariate analysis of predictors of Status.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | OR(99%CI) | p-value | N |
| **age** | **1.04 (0.99,1.08)** | **0.025** | **228** |

### 1.3.2 Test Linear

Univariate analysis of predictors of wt loss.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | p-value | N |
| Status |  | 0.61 | 214 |
| 0 | Reference |  | 62 |
| 1 | 1.01 (-2.90,4.92) |  | 152 |
| Sex |  | 0.058 | 214 |
| Male | Reference |  | 128 |
| Female | -3.45 (-7.04,0.14) |  | 86 |
| **ph ecog** | **3.42 (0.99,5.85)** | **0.006** | **213** |
| meal cal | -3.3e-03 (-8.3e-03,1.6e-03) | 0.18 | 171 |
| age | 0.05 (-0.14,0.25) | 0.58 | 214 |

Univariate analysis of predictors of wt loss.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | Estimate(90%CI) | p-value | N |
| age | 0.05 (-0.11,0.22) | 0.58 | 214 |

### 1.3.3 Test coxph

Univariate analysis of predictors of survival.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | HR(99%CI) | p-value | N |
| **Sex** |  | **0.001** | **228** |
| Male | Reference |  | 138 |
| Female | 0.59 (0.38,0.90) |  | 90 |
| **ph ecog** | **1.61 (1.20,2.16)** | **<0.001** | **227** |
| meal cal | 1.00 (1.00,1.00) | 0.59 | 181 |
| **age** | **1.02 (1.00,1.04)** | **0.042** | **228** |

### 1.3.4 Test crr

See Appendix

### 1.3.5 Test ordinal

Univariate analysis of predictors of cyl.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | OR(90%CI) | p-value | N |
| **qsec** | **0.43 (0.27,0.68)** | **0.003** | **32** |

### 1.3.6 Test crr

Univariate analysis of predictors of survival.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | HR(90%CI) | p-value | N |
| **Sex** |  | **<0.001** | **228** |
| Male | Reference |  | 138 |
| Female | 2.49 (1.64,3.79) |  | 90 |
| **ph ecog** | **0.54 (0.40,0.72)** | **<0.001** | **227** |
| meal cal | 1.00 (1.00,1.00) | 0.9 | 181 |
| **age** | **0.97 (0.95,0.99)** | **0.028** | **228** |

Univariate analysis of predictors of survival.

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | HR(95%CI) | p-value | N |
| **age** | **0.97 (0.94,1.00)** | **0.028** | **228** |

### 1.3.7 Test boxcox

Univariate analysis of predictors of y.

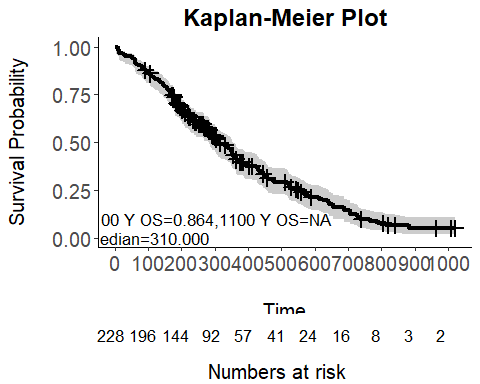
|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | Estimate(90%CI) | p-value | N |
| x0 | 6.2e-04 (-3.5e-03,4.8e-03) | 0.81 | 1000 |
| **x1** | **7.1e-03 (3e-03,0.01)** | **0.004** | **1000** |

### 1.3.8 Test geeglm

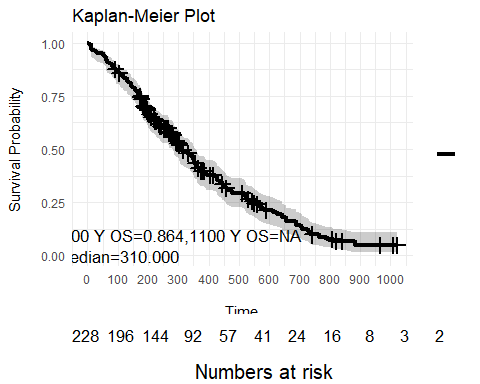
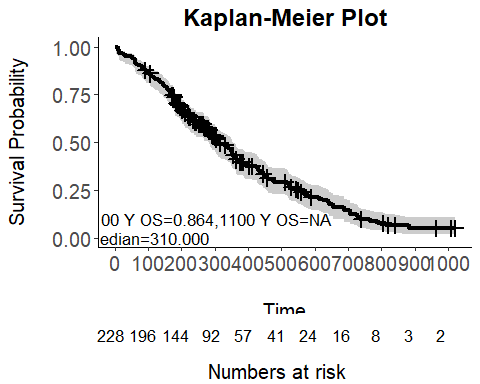
Univariate analysis of predictors of weight.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | p-value | Global p-value | N |
| **Time** | **0.58 (0.41,0.75)** |  | **<0.001** | **176** |
| **Diet** |  |  | **<0.001** | **176** |
| 1 | Reference |  |  | 88 |
| 2 | 223.31 (162.43,284.18) | <0.001 |  | 44 |
| 3 | 266.19 (245.76,286.62) | <0.001 |  | 44 |

# 2 KM plit with confidence intervals



## 2.1 modify a KM plot



# Unnumbered Heading

## 2.2 Test etsum

To get nice output from rm\_etsum you must set results='asis' in the chunk options

otherwise you get this:

##   
## There are 228 patients. There were 165 (72\%) events. The median and range of the follow-up times is 255.5 (5-1022) days. The KM median event time is 310 with 95\% confidence Interval (285,363). The first and last event times occurred at 5 and 883 days respectively. The 365,720 and 883 day probabilities of 'survival' and their 95\% confidence intervals are 41 (34-49),12 (8-20) and 5 (2-12) percent.

when you want this:

**Male:**  There are 138 patients. There were 112 (81%) events. The median and range of the follow-up times is 224 (11-1022) months. The KM median event time is 270 with 95% confidence Interval (212,310). The first and last event times occurred at 5 and 765 months respectively. The 1,2 and 3 month probabilities of ‘survival’ and their 95% confidence intervals are 100 (100-100),100 (100-100) and 100 (100-100) percent.

**Female:**  There are 90 patients. There were 53 (59%) events. The median and range of the follow-up times is 292.5 (5-965) months. The KM median event time is 426 with 95% confidence Interval (348,550). The first and last event times occurred at 11 and 883 months respectively. The 1,2 and 3 month probabilities of ‘survival’ and their 95% confidence intervals are 100 (100-100),100 (100-100) and 100 (100-100) percent.

## 2.3 Test mvsum

Comments from Susie 8 Oct

## 'data.frame': 354 obs. of 7 variables:  
## $ RT\_QA : chr "No" "Yes" "Yes" "Yes" ...  
## $ Chemo\_Yes\_No: chr "No" "No" "No" "Yes" ...  
## $ OS : int 1 0 0 0 0 1 1 0 0 0 ...  
## $ OStime : num 0.698 5.963 3.261 0.739 7.192 ...  
## $ LC : int 2 0 0 0 0 2 2 0 0 0 ...  
## $ LCtime : num 0.698 5.963 3.261 0.739 7.192 ...  
## $ T\_7 : chr "T3" "T1" "T1" "T4" ...

##   
## No Yes   
## 43 311

## [1] "character"

##   
## No Yes   
## 144 210

## [1] "character"

|  |  |  |
| --- | --- | --- |
| Covariate | HR(95%CI) | Global p-value |
| RT QA |  |  |
| No | Reference |  |
| Yes | 1.00 (0.63,1.56) |  |
| Chemo Yes No |  |  |
| No | Reference |  |
| Yes | 0.49 (0.27,0.87) |  |

### 2.3.1 Test with glm

Global p-values were adjusted according to the holm method.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | OR(95%CI) | p-value | Global p-value | N |
| wt loss | 1.00 (0.97,1.02) |  | 0.83 | 214 |
| **Sex** |  |  | **<0.001** |  |
| Male | Reference |  |  | 128 |
| Female | 0.31 (0.16,0.58) |  |  | 86 |
| AgeGroup |  |  | 0.56 |  |
| (30,40] | Reference |  |  | 3 |
| (40,50] | 7.23 (0.53,98.89) | 0.14 |  | 22 |
| (50,60] | 8.52 (0.68,106.08) | 0.096 |  | 63 |
| (60,70] | 7.93 (0.66,95.39) | 0.1 |  | 82 |
| (70,80] | 14.77 (1.13,192.73) | 0.04 |  | 42 |
| (80,90] | 1.2e+07 (0e+00,Inf) | 0.99 |  | 2 |

Global p-values were adjusted according to the holm method.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | OR(95%CI) | p-value | Global p-value | N |
| wt loss | 1.00 (0.97,1.02) |  | 0.83 | 214 |
| **Sex** |  |  | **<0.001** |  |
| Male | Reference |  |  | 128 |
| Female | 0.31 (0.16,0.58) |  |  | 86 |
| AgeGroup |  |  | 0.56 |  |
| (30,40] | Reference |  |  | 3 |
| (40,50] | 7.23 (0.53,98.89) | 0.14 |  | 22 |
| (50,60] | 8.52 (0.68,106.08) | 0.096 |  | 63 |
| (60,70] | 7.93 (0.66,95.39) | 0.1 |  | 82 |
| (70,80] | 14.77 (1.13,192.73) | 0.04 |  | 42 |
| (80,90] | 1.2e+07 (0e+00,Inf) | 0.99 |  | 2 |

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | Global p-value | N |
| age | 0.03 (-0.16,0.23) | 0.75 | 214 |
| Sex |  | 0.068 |  |
| Male | Reference |  | 128 |
| Female | -3.38 (-7.00,0.25) |  | 86 |

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | RR(95%CI) | p-value | Global p-value |
| outcome |  |  | 0.065 |
| 1 | Reference |  |  |
| 2 | 0.63 (0.43,0.94) | 0.025 |  |
| 3 | 0.75 (0.51,1.09) | 0.13 |  |
| treatment |  |  | 1 |
| 1 | Reference |  |  |
| 2 | 1.00 (0.68,1.48) | 1 |  |
| 3 | 1.00 (0.68,1.48) | 1 |  |

### 2.3.2 Test with glm, linear

|  |  |  |
| --- | --- | --- |
| Covariate | Estimate(95%CI) | Global p-value |
| Sex |  | 0.066 |
| Male | Reference |  |
| Female | -3.38 (-7.00,0.25) |  |
| age | 0.03 (-0.16,0.23) | 0.75 |

### 2.3.3 Test with lm

Global p-values were adjusted according to the hochberg method.

|  |  |  |
| --- | --- | --- |
| Covariate | Estimate(95%CI) | Global p-value |
| Status |  | 0.99 |
| 0 | Reference |  |
| 1 | -0.02 (-4.09,4.05) |  |
| Sex |  | 0.23 |
| Male | Reference |  |
| Female | -3.38 (-7.12,0.36) |  |
| age | 0.03 (-0.16,0.23) | 0.99 |

### 2.3.4 Test with lme

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | p-value | Global p-value |
| **Time** | **0.36 (0.18,0.54)** |  | **<0.001** |
| **Diet** |  |  | **<0.001** |
| 1 | Reference |  |  |
| 2 | 200.67 (151.67,249.66) | <0.001 |  |
| 3 | 252.07 (203.08,301.07) | <0.001 |  |
| **Time:Diet** |  |  | **<0.001** |
| Time:2 | 0.61 (0.29,0.92) | <0.001 |  |
| Time:3 | 0.30 (-0.01,0.61) | 0.061 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | p-value | Global p-value | N |
| **Time** | **0.36 (0.18,0.54)** |  | **<0.001** | **176** |
| **Diet** |  |  | **<0.001** |  |
| 1 | Reference |  |  | 88 |
| 2 | 200.67 (151.67,249.66) | <0.001 |  | 44 |
| 3 | 252.07 (203.08,301.07) | <0.001 |  | 44 |
| **Time:Diet** |  |  | **<0.001** |  |
| Time:2 | 0.61 (0.29,0.92) | <0.001 |  | 44 |
| Time:3 | 0.30 (-0.01,0.61) | 0.061 |  | 44 |

### 2.3.5 Test with polr

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | OR(95%CI) | p-value | Global p-value |
| **Infl** |  |  | **<0.001** |
| Low | Reference |  |  |
| Medium | 1.76 (1.44,2.16) | <0.001 |  |
| High | 3.63 (2.83,4.66) | <0.001 |  |
| **Type** |  |  | **<0.001** |
| Tower | Reference |  |  |
| Apartment | 0.56 (0.45,0.71) | <0.001 |  |
| Atrium | 0.69 (0.51,0.94) | 0.018 |  |
| Terrace | 0.34 (0.25,0.45) | <0.001 |  |
| **Cont** |  |  | **<0.001** |
| Low | Reference |  |  |
| High | 1.43 (1.19,1.73) |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | OR(95%CI) | p-value | Global p-value | N |
| **Infl** |  |  | **<0.001** |  |
| Low | Reference |  |  | 24 |
| Medium | 1.76 (1.44,2.16) | <0.001 |  | 24 |
| High | 3.63 (2.83,4.66) | <0.001 |  | 24 |
| **Type** |  |  | **<0.001** |  |
| Tower | Reference |  |  | 18 |
| Apartment | 0.56 (0.45,0.71) | <0.001 |  | 18 |
| Atrium | 0.69 (0.51,0.94) | 0.018 |  | 18 |
| Terrace | 0.34 (0.25,0.45) | <0.001 |  | 18 |
| **Cont** |  |  | **<0.001** |  |
| Low | Reference |  |  | 36 |
| High | 1.43 (1.19,1.73) |  |  | 36 |

### 2.3.6 Test crr

|  |  |  |  |
| --- | --- | --- | --- |
| Covariate | HR(95%CI) | Global p-value | N |
| x1 | 1.31 (0.57,2.98) | 0.53 | 200 |
| x2 | 0.95 (0.45,2.00) | 0.88 | 200 |
| x3 | 1.32 (0.63,2.79) | 0.46 | 200 |

### 2.3.7 Test geeglm

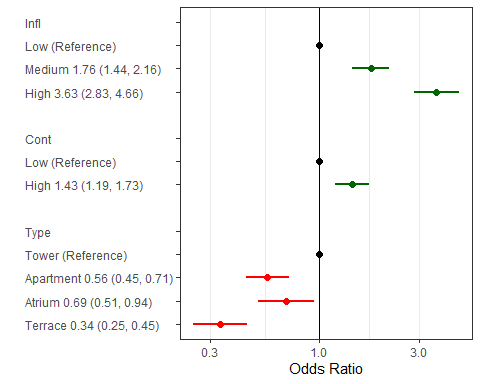
##   
## Call:  
## geeglm(formula = weight ~ Time + Diet, family = gaussian("identity"),   
## data = BodyWeight, id = Rat, corstr = "ar1")  
##   
## Coefficients:  
## Estimate Std.err Wald Pr(>|W|)   
## (Intercept) 243.5067 5.3184 2096.30 < 2e-16 \*\*\*  
## Time 0.5770 0.0864 44.60 2.41e-11 \*\*\*  
## Diet2 223.7082 30.8353 52.63 4.02e-13 \*\*\*  
## Diet3 266.9057 10.4153 656.71 < 2e-16 \*\*\*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Correlation structure = ar1   
## Estimated Scale Parameters:  
##   
## Estimate Std.err  
## (Intercept) 1158 671.1  
## Link = identity   
##   
## Estimated Correlation Parameters:  
## Estimate Std.err  
## alpha 0.9849 0.007559  
## Number of clusters: 16 Maximum cluster size: 11

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | p-value | Global p-value | N |
| **Time** | **0.58 (0.41,0.75)** |  | **<0.001** | **176** |
| **Diet** |  |  | **<0.001** |  |
| 1 | Reference |  |  | 88 |
| 2 | 223.71 (162.84,284.57) | <0.001 |  | 44 |
| 3 | 266.91 (246.35,287.46) | <0.001 |  | 44 |

## 2.4 TO DO fix- bug

library(geepack)  
data(dietox)  
dietox$Cu <- as.factor(dietox$Cu)  
mf <- formula(Weight ~ Cu \* (Time + I(Time^2) + I(Time^3)))  
gee1 <- geeglm(mf, data=dietox, id=Pig, family=poisson("identity"), corstr="ar1")  
summary(gee1)  
mvsum(gee1,data=dietox)

## 2.5 Test forestplot2



## 2.6 Combining uvsum and mvsum tables

Linear models

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Covariate | Unadjusted Estimate(95%CI) | N | p | Adjusted Estimate(95%CI) | N (adj) | p (adj) |
| Status |  | 214 | 0.61 |  |  | 0.46 |
| 0 | Reference | 62 |  | Reference | 47 |  |
| 1 | 1.01 (-2.90,4.92) | 152 |  | -1.76 (-6.47,2.95) | 123 |  |
| **Sex** |  | **214** | **0.058** |  |  | **0.004** |
| Male | Reference | 128 |  | Reference | 105 |  |
| Female | -3.45 (-7.04,0.14) | 86 |  | -6.46 (-10.78,-2.15) | 65 |  |
| **ph ecog** | **3.42 (0.99,5.85)** | **213** | **0.006** | **3.70 (0.73,6.67)** | **170** | **0.015** |
| meal cal | -3.3e-03 (-8.3e-03,1.6e-03) | 171 | 0.18 | -3.9e-03 (-9.1e-03,1.2e-03) | 170 | 0.13 |
| AgeGroup |  | 214 | 0.37 |  |  | 0.29 |
| (30,40] | Reference | 3 |  | Reference | 2 |  |
| (40,50] | 11.29 (-4.64,27.22) | 22 | 0.16 | 14.84 (-5.00,34.67) | 18 | 0.14 |
| (50,60] | 13.79 (-1.50,29.09) | 63 | 0.077 | 13.46 (-5.80,32.72) | 46 | 0.17 |
| (60,70] | 11.87 (-3.34,27.08) | 82 | 0.13 | 10.26 (-9.03,29.56) | 67 | 0.3 |
| (70,80] | 11.10 (-4.37,26.56) | 42 | 0.16 | 9.76 (-10.13,29.64) | 35 | 0.33 |
| (80,90] | 23.33 (-0.29,46.96) | 2 | 0.053 | 22.97 (-3.72,49.66) | 2 | 0.091 |

Logistic models

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Covariate | Unadjusted OR(95%CI) | N | p | Adjusted OR(95%CI) | N (adj) | p (adj) |
| **Sex** |  | **228** | **<0.001** |  |  | **0.003** |
| Male | Reference | 138 |  | Reference | 113 |  |
| Female | 0.33 (0.18,0.61) | 90 |  | 0.34 (0.17,0.70) | 67 |  |
| **ph ecog** | **2.17 (1.39,3.38)** | **227** | **<0.001** | **2.27 (1.36,3.78)** | **180** | **0.001** |
| meal cal | 1.00 (1.00,1.00) | 181 | 0.75 | 1.00 (1.00,1.00) | 180 | 0.94 |
| AgeGroup |  | 228 | 0.3 |  |  |  |
| (30,40] | Reference | 3 |  |  |  |  |
| (40,50] | 3.75 (0.29,47.99) | 23 | 0.31 |  |  |  |
| (50,60] | 4.80 (0.41,55.99) | 68 | 0.21 |  |  |  |
| (60,70] | 5.04 (0.44,58.10) | 88 | 0.19 |  |  |  |
| (70,80] | 9.00 (0.72,111.83) | 44 | 0.087 |  |  |  |
| (80,90] |  | 2 |  |  |  |  |

## 2.7 Combining Tables with nestTable

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | OR(95%CI) | p-value | Global p-value | N |
| **Model 1** |  |  |  |  |
| wt loss | 1.00 (0.98,1.02) |  | 0.97 | 214 |
| Sex |  |  | <0.001 |  |
| Male | Reference |  |  | 128 |
| Female | 0.32 (0.17,0.60) |  |  | 86 |
| **Model 2** |  |  |  |  |
| wt loss | 1.00 (0.97,1.02) |  | 0.83 | 214 |
| Sex |  |  | <0.001 |  |
| Male | Reference |  |  | 128 |
| Female | 0.31 (0.16,0.58) |  |  | 86 |
| AgeGroup |  |  | 0.28 |  |
| (30,40] | Reference |  |  | 3 |
| (40,50] | 7.23 (0.53,98.89) | 0.14 |  | 22 |
| (50,60] | 8.52 (0.68,106.08) | 0.096 |  | 63 |
| (60,70] | 7.93 (0.66,95.39) | 0.1 |  | 82 |
| (70,80] | 14.77 (1.13,192.73) | 0.04 |  | 42 |
| (80,90] | 1.2e+07 (0e+00,Inf) | 0.99 |  | 2 |

# 3 covsum and missing values

Add some more examples here…

No Missing Values

Summary sample statistics by Transmission.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=32) | Automatic (n=19) | Manual (n=13) | p-value | StatTest |
| **mpg** |  |  |  | **0.002** | **Wilcoxon Rank Sum** |
| Mean (sd) | 20.1 (6.0) | 17.1 (3.8) | 24.4 (6.2) |  |  |
| Median (Min,Max) | 19.2 (10.4,33.9) | 17.3 (10.4,24.4) | 22.8 (15.0,33.9) |  |  |
| **Cylinders** |  |  |  | **0.009** | **Fisher Exact** |
| 4 | 11 (34) | 3 (16) | 8 (62) |  |  |
| 6 | 7 (22) | 4 (21) | 3 (23) |  |  |
| 8 | 14 (44) | 12 (63) | 2 (15) |  |  |
| qsec |  |  |  | 0.27 | Wilcoxon Rank Sum |
| Mean (sd) | 17.8 (1.8) | 18.2 (1.8) | 17.4 (1.8) |  |  |
| Median (Min,Max) | 17.7 (14.5,22.9) | 17.8 (15.4,22.9) | 17.0 (14.5,19.9) |  |  |

Adding in some extra rows with missing values on Cylinders and mpg

Summary sample statistics by Transmission.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Covariate | Full Sample (n=52) | Automatic (n=29) | Manual (n=23) | p-value | StatTest |
| **mpg** |  |  |  | **0.002** | **Wilcoxon Rank Sum** |
| Mean (sd) | 20.1 (6.0) | 17.1 (3.8) | 24.4 (6.2) |  |  |
| Median (Min,Max) | 19.2 (10.4,33.9) | 17.3 (10.4,24.4) | 22.8 (15.0,33.9) |  |  |
| Missing | 20 | 10 | 10 |  |  |
| **Cylinders** |  |  |  | **0.009** | **Fisher Exact** |
| 4 | 11 (34) | 3 (16) | 8 (62) |  |  |
| 6 | 7 (22) | 4 (21) | 3 (23) |  |  |
| 8 | 14 (44) | 12 (63) | 2 (15) |  |  |
| Missing | 20 | 10 | 10 |  |  |
| qsec |  |  |  | 0.27 | Wilcoxon Rank Sum |
| Mean (sd) | 17.8 (1.8) | 18.2 (1.8) | 17.4 (1.8) |  |  |
| Median (Min,Max) | 17.7 (14.5,22.9) | 17.8 (15.4,22.9) | 17.0 (14.5,19.9) |  |  |
| Missing | 20 | 10 | 10 |  |  |

# 4 References

Bel, Ryan Del, and Wei Xu. 2013. *reportRx: Tools for Automatically Generating Reproducible Clinical Report*. <https://CRAN.R-project.org/package=reportRx>.

R Core Team. 2021. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.

# 5 Appendix

## 5.1 Comparing p-values

P-values agree between

Univariate analysis of predictors of wt loss.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Covariate | Estimate(95%CI) | p-value | Global p-value | N |
| status | 1.01 (-2.90,4.92) |  | 0.61 | 214 |
| Status |  |  | 0.61 | 214 |
| 0 | Reference |  |  | 62 |
| 1 | 1.01 (-2.90,4.92) |  |  | 152 |
| sex | -3.45 (-7.04,0.14) |  | 0.058 | 214 |
| Sex |  |  | 0.058 | 214 |
| Male | Reference |  |  | 128 |
| Female | -3.45 (-7.04,0.14) |  |  | 86 |
| **ph ecog** | **3.42 (0.99,5.85)** |  | **0.006** | **213** |
| **ECOG** |  |  | **0.041** | **213** |
| 0 | Reference |  |  | 61 |
| 1 | 4.59 (0.50,8.69) | 0.028 |  | 106 |
| 2 | 6.51 (1.51,11.52) | 0.011 |  | 45 |
| 3 | 14.00 (-11.68,39.68) | 0.28 |  | 1 |

With lm:

##   
## Call:  
## lm(formula = wt.loss ~ Sex, data = lung)  
##   
## Residuals:  
## Min 1Q Median 3Q Max   
## -31.77 -8.22 -3.22 5.78 56.78   
##   
## Coefficients:  
## Estimate Std. Error t value Pr(>|t|)   
## (Intercept) 11.22 1.15 9.72 <2e-16 \*\*\*  
## SexFemale -3.45 1.82 -1.90 0.059 .   
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1  
##   
## Residual standard error: 13.1 on 212 degrees of freedom  
## (14 observations deleted due to missingness)  
## Multiple R-squared: 0.0167, Adjusted R-squared: 0.012   
## F-statistic: 3.59 on 1 and 212 DF, p-value: 0.0594

With t-test (using the default of non-homogenous variance):

##   
## Welch Two Sample t-test  
##   
## data: wt.loss by Sex  
## t = 1.9, df = 181, p-value = 0.06  
## alternative hypothesis: true difference in means between group Male and group Female is not equal to 0  
## 95 percent confidence interval:  
## -0.1531 7.0557  
## sample estimates:  
## mean in group Male mean in group Female   
## 11.219 7.767

## [1] 0.06044

With t-test using the pooled variance:

##   
## Two Sample t-test  
##   
## data: wt.loss by Sex  
## t = 1.9, df = 212, p-value = 0.06  
## alternative hypothesis: true difference in means between group Male and group Female is not equal to 0  
## 95 percent confidence interval:  
## -0.1383 7.0410  
## sample estimates:  
## mean in group Male mean in group Female   
## 11.219 7.767

## [1] 0.05942