reportRx TestFile

08 June, 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.

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.

|  |  |
| --- | --- |
|  | n=228 |
| **Status** |  |
| 0 | 63 (27.63) |
| 1 | 165 (72.37) |
| **Sex** |  |
| Male | 138 (60.53) |
| Female | 90 (39.47) |
| **age** |  |
| Mean (sd) | 62.45 (9.07) |
| Median (Min,Max) | 63 (39,82) |
| **AgeGroup** |  |
| (0,10] | 0 (0.00) |
| (10,20] | 0 (0.00) |
| (20,30] | 0 (0.00) |
| (30,40] | 3 (1.32) |
| (40,50] | 23 (10.09) |
| (50,60] | 68 (29.82) |
| (60,70] | 88 (38.60) |
| (70,80] | 44 (19.30) |
| (80,90] | 2 (0.88) |
| (90,100] | 0 (0.00) |
| **meal cal** |  |
| Mean (sd) | 928.78 (402.17) |
| Median (Min,Max) | 975 (96,2600) |
| Missing | 47 |
| **OneLevelFactor** |  |
| one level | 228 (100.00) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 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** |  |  |  | 0.131 |
| (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:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 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** |  |  |  | 1.000 |
| (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:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Full Sample (n=138) | Male (n=138) | Female (n=0) | p-value |
| **Status** |  |  |  | 1.000 |
| 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** |  |  |  | 1.000 |
| (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:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Full Sample (n=138) | Male (n=138) | Female (n=0) | p-value | StatTest |
| **AgeGroup** |  |  |  | 1.000 | 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** |  |  |  | 1.000 | 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 the following syntax. Unfortunately, this produces a NULL after each table when you knit to Word. This can be prevented by removing the print function wrapped around the rm\_covsum call, but then nothing will print if you knit to pdf …. So, if you are going to flip back and forth, leave the print command and do a find and replace on the resulting NULL words in the Word document.

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

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

NULL

|  |  |
| --- | --- |
|  | 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.

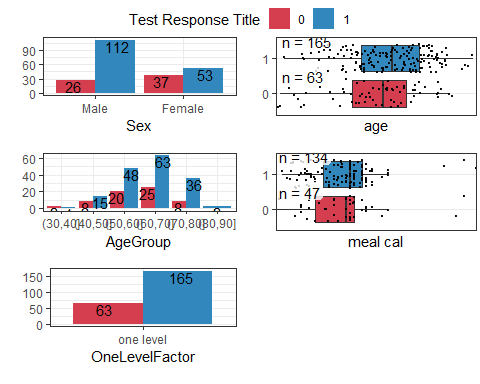


Figure 1.1: Associations between status and covariates in the lung data.

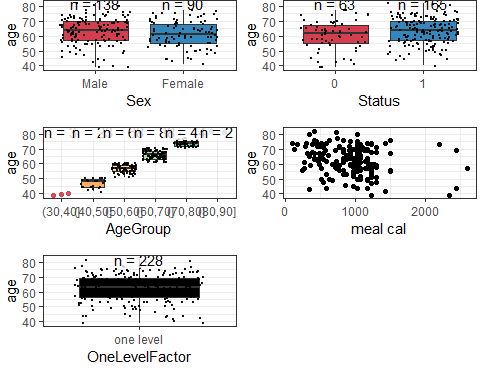


Figure 1.2: Associations between status and covariates in the lung data.

## 1.3 Tests for uvsum

### 1.3.1 Test logistic

Tables ??, ?? and ?? 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.

|  |  |  |  |
| --- | --- | --- | --- |
| Predictor | OR(95%CI) | p-value | N |
| **age** | 1.037 (1.005,1.071) | **0.025** | 228 |
| **Sex** |  | **<0.001** | 228 |
| Male | Reference |  | 138 |
| Female | 0.333 (0.183,0.605) |  | 90 |
| **wt.loss** | 1.006 (0.983,1.029) | 0.609 | 214 |

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

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

### 1.3.2 Test Linear

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimate(95%CI) | p-value | N |
| **Status** |  | 0.610 | 214 |
| 0 | Reference |  | 62 |
| 1 | 1.01 (-2.90,4.92) |  | 152 |
| **Sex** |  | 0.059 | 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) | 0.182 | 171 |
| **age** | 0.05 (-0.14,0.25) | 0.579 | 214 |

### 1.3.3 Test coxph

|  |  |  |  |
| --- | --- | --- | --- |
|  | HR(99%CI) | p-value | N |
| **Sex** |  | **0.001** | 228 |
| Male | Reference |  | 138 |
| Female | 0.588 (0.382,0.904) |  | 90 |
| **ph.ecog** | 1.610 (1.202,2.155) | **<0.001** | 227 |
| **meal.cal** | 1.000 (0.999,1.000) | 0.593 | 181 |
| **age** | 1.019 (0.995,1.043) | **0.042** | 228 |

## Covariate HR(99%CI) p-value N  
## 1 Sex 0.00149122920488075 228  
## 2 Male Reference 138  
## 3 Female 0.59 (0.38,0.90) 90  
## 4 ph.ecog 1.61 (1.20,2.16) 2.69223354988985e-05 227  
## 5 meal.cal 1.00 (1.00,1.00) 0.592940173775584 181  
## 6 age 1.02 (1.00,1.04) 0.0418531313418108 228

### 1.3.4 Test ordinal

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

### 1.3.5 Test crr

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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) | 0.900 | 181 |
| **age** | 0.97 (0.95,0.99) | **0.028** | 228 |

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

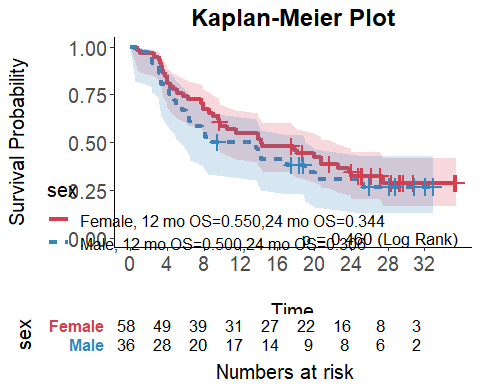
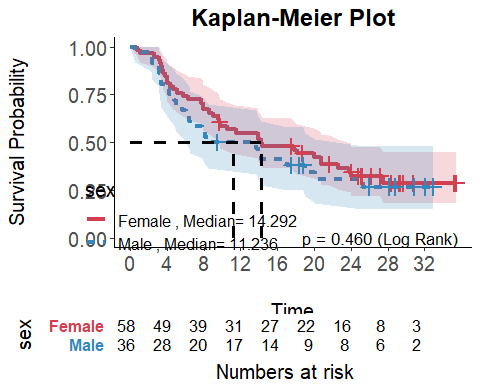
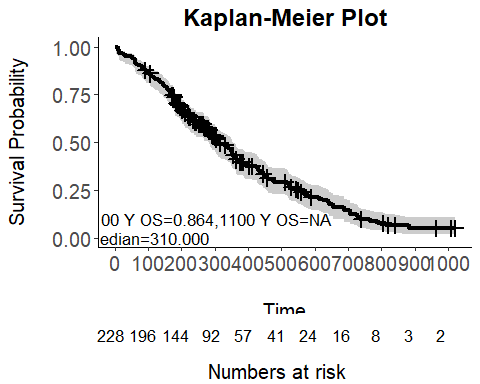
### 1.3.6 Test boxcox

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimate(90%CI) | p-value | N |
| **x0** | 6.2e-04 (-3.5e-03,4.8e-03) | 0.805 | 1000 |
| **x1** | 7.1e-03 (3e-03,0.01) | **0.004** | 1000 |

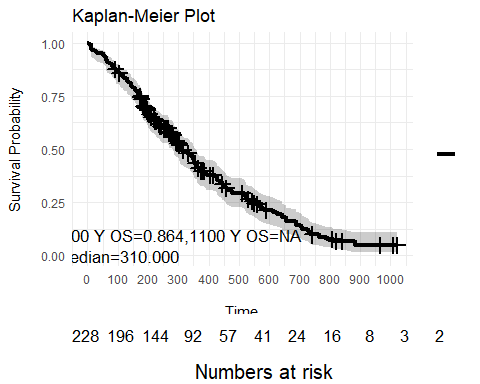
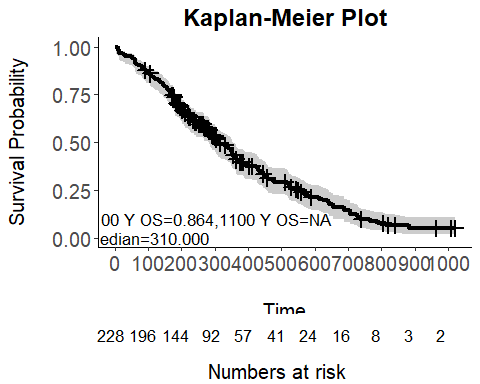
### 1.3.7 Test geeglm

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 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"

|  |  |  |
| --- | --- | --- |
|  | HR(95%CI) | p-value |
| **RT QA** |  | 0.985 |
| No | Reference |  |
| Yes | 1.00 (0.63,1.56) |  |
| **Chemo Yes No** |  | **0.015** |
| No | Reference |  |
| Yes | 0.49 (0.27,0.87) |  |

### 2.3.1 Test with glm

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | OR(95%CI) | p-value | Global p-value | N |
| **wt loss** | 1.00 (0.97,1.02) | 1.000 |  | 214 |
| **Sex** |  | **0.002** |  |  |
| Male | Reference |  |  | 128 |
| Female | 0.31 (0.16,0.58) |  |  | 86 |
| **AgeGroup** |  |  | 0.841 |  |
| (30,40] | Reference |  |  | 3 |
| (40,50] | 7.23 (0.53,98.89) | 0.576 |  | 22 |
| (50,60] | 8.52 (0.68,106.08) | 0.576 |  | 63 |
| (60,70] | 7.93 (0.66,95.39) | 0.576 |  | 82 |
| (70,80] | 14.77 (1.13,192.73) | 0.280 |  | 42 |
| (80,90] | 1.2e+07 (0e+00,Inf) | 1.000 |  | 2 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimate(95%CI) | p-value | N |
| **age** | 0.03 (-0.16,0.23) | 0.745 | 214 |
| **Sex** |  | 0.068 |  |
| Male | Reference |  | 128 |
| Female | -3.38 (-7.00,0.25) |  | 86 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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) | 0.128 |  |
| **treatment** |  |  | 1.000 |
| 1 | Reference |  |  |
| 2 | 1.00 (0.68,1.48) | 1.000 |  |
| 3 | 1.00 (0.68,1.48) | 1.000 |  |

### 2.3.2 Test with glm, linear

|  |  |  |
| --- | --- | --- |
|  | Estimate(95%CI) | p-value |
| **Sex** |  | 0.068 |
| Male | Reference |  |
| Female | -3.38 (-7.00,0.25) |  |
| **age** | 0.03 (-0.16,0.23) | 0.745 |

### 2.3.3 Test with lm

|  |  |  |
| --- | --- | --- |
|  | Estimate(95%CI) | p-value |
| **Status** |  | 0.991 |
| 0 | Reference |  |
| 1 | -0.02 (-4.09,4.05) |  |
| **Sex** |  | 0.229 |
| Male | Reference |  |
| Female | -3.38 (-7.12,0.36) |  |
| **age** | 0.03 (-0.16,0.23) | 0.991 |

### 2.3.4 Test with lme

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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 |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 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

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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) |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 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 coxph

|  |  |  |
| --- | --- | --- |
|  | HR(95%CI) | p-value |
| **age** | 0.99 (0.97,1.01) | 0.293 |
| **sex** |  | 0.177 |
| Female | Reference |  |
| Male | 1.53 (0.83,2.82) |  |
| **baseline ctdna** | 1.00 (1.00,1.00) | **0.040** |
| **l size** | 1.00 (0.99,1.00) | 0.662 |
| **change ctdna group** |  | **<0.001** |
| Decrease from baseline | Reference |  |
| Increase from baseline | 3.23 (1.65,6.33) |  |

## coef exp(coef) se(coef)  
## age -0.0119147418 0.9881560 0.0113375176  
## sexMale 0.4233976431 1.5271414 0.3138070666  
## baseline\_ctdna 0.0003607587 1.0003608 0.0001756328  
## l\_size -0.0014063674 0.9985946 0.0032136337  
## change\_ctdna\_groupIncrease from baseline 1.1726892426 3.2306690 0.3429083162  
## z Pr(>|z|)  
## age -1.0509128 0.2932986634  
## sexMale 1.3492292 0.1772633732  
## baseline\_ctdna 2.0540511 0.0399707443  
## l\_size -0.4376253 0.6616579263  
## change\_ctdna\_groupIncrease from baseline 3.4198332 0.0006265954

## coef exp(coef) se(coef) z Pr(>|z|)  
## baseline\_ctdna 0.0002997685 1.0003 0.000127769 2.346175 0.01896719

## Analysis of Deviance Table  
## Cox model: response is Surv(os\_time, os\_status)  
## Terms added sequentially (first to last)  
##   
## loglik Chisq Df Pr(>|Chi|)   
## NULL -257.78   
## baseline\_ctdna -255.73 4.1072 1 0.0427 \*  
## ---  
## Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

### 2.3.7 Test crr

|  |  |  |  |
| --- | --- | --- | --- |
|  | HR(95%CI) | p-value | N |
| **x1** | 1.31 (0.57,2.98) | 0.530 | 200 |
| **x2** | 0.95 (0.45,2.00) | 0.880 | 200 |
| **x3** | 1.32 (0.63,2.79) | 0.460 | 200 |

### 2.3.8 Test geeglm

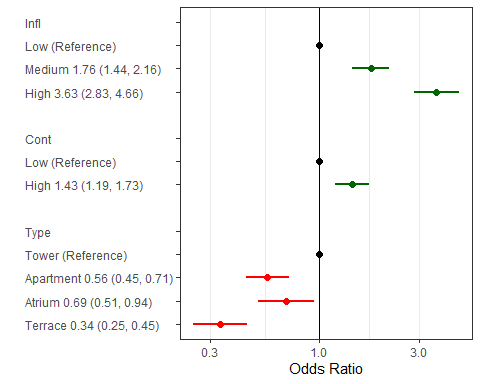
##   
## Call:  
## geeglm(formula = weight ~ Time + Diet, family = gaussian("identity"),   
## data = BodyWeight, id = Rat, corstr = "ar1")  
##   
## Coefficients:  
## Estimate Std.err Wald Pr(>|W|)   
## (Intercept) 243.5067 5.3184 2096.30 < 2e-16 \*\*\*  
## Time 0.5770 0.0864 44.60 2.41e-11 \*\*\*  
## 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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 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=gaussian("identity"), corstr="ar1")  
summary(gee1)  
mvsum(model=gee1,data=dietox)

## 2.5 Test forestplot2



## 2.6 Combining uvsum and mvsum tables

Linear models

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Unadjusted Estimate(95%CI) | N | p | Adjusted Estimate(95%CI) | N (adj) | p (adj) |
| **Status** |  | 214 | 0.610 |  |  | 0.461 |
| 0 | Reference | 62 |  | Reference | 47 |  |
| 1 | 1.01 (-2.90,4.92) | 152 |  | -1.76 (-6.47,2.95) | 123 |  |
| **Sex** |  | 214 | 0.059 |  |  | **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 | 0.182 | -3.9e-03 (-9.1e-03,1.2e-03) | 170 | 0.131 |
| **AgeGroup** |  | 214 | 0.368 |  |  | 0.293 |
| (30,40] | Reference | 3 |  | Reference | 2 |  |
| (40,50] | 11.29 (-4.64,27.22) | 22 | 0.164 | 14.84 (-5.00,34.67) | 18 | 0.142 |
| (50,60] | 13.79 (-1.50,29.09) | 63 | 0.077 | 13.46 (-5.80,32.72) | 46 | 0.170 |
| (60,70] | 11.87 (-3.34,27.08) | 82 | 0.126 | 10.26 (-9.03,29.56) | 67 | 0.295 |
| (70,80] | 11.10 (-4.37,26.56) | 42 | 0.159 | 9.76 (-10.13,29.64) | 35 | 0.334 |
| (80,90] | 23.33 (-0.29,46.96) | 2 | 0.053 | 22.97 (-3.72,49.66) | 2 | 0.091 |

Logistic models

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 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 | **0.002** |
| **meal cal** | 1.00 (1.00,1.00) | 181 | 0.750 | 1.00 (1.00,1.00) | 180 | 0.937 |
| **AgeGroup** |  | 228 | 0.297 |  |  |  |
| (30,40] | Reference | 3 |  |  |  |  |
| (40,50] | 3.75 (0.29,47.99) | 23 | 0.310 |  |  |  |
| (50,60] | 4.80 (0.41,55.99) | 68 | 0.211 |  |  |  |
| (60,70] | 5.04 (0.44,58.10) | 88 | 0.195 |  |  |  |
| (70,80] | 9.00 (0.72,111.83) | 44 | 0.087 |  |  |  |
| (80,90] |  | 2 |  |  |  |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Unadjusted OR(95%CI) | N | p | Adjusted OR(95%CI) | N (adj) | p (adj) |
| **Sex** |  | 228 | **<0.001** |  |  | **<0.001** |
| Male | Reference | 138 |  | Reference | 128 |  |
| Female | 0.33 (0.18,0.61) | 90 |  | 0.31 (0.16,0.58) | 86 |  |
| **wt loss** | 1.01 (0.98,1.03) | 214 | 0.609 | 1.00 (0.97,1.02) | 214 | 0.834 |
| **AgeGroup** |  | 228 | 0.297 |  |  | 0.280 |
| (30,40] | Reference | 3 |  | Reference | 3 |  |
| (40,50] | 3.75 (0.29,47.99) | 23 | 0.310 | 7.23 (0.53,98.89) | 22 | 0.138 |
| (50,60] | 4.80 (0.41,55.99) | 68 | 0.211 | 8.52 (0.68,106.08) | 63 | 0.096 |
| (60,70] | 5.04 (0.44,58.10) | 88 | 0.195 | 7.93 (0.66,95.39) | 82 | 0.103 |
| (70,80] | 9.00 (0.72,111.83) | 44 | 0.087 | 14.77 (1.13,192.73) | 42 | **0.040** |
| (80,90] |  | 2 |  | 1.2e+07 (0e+00,Inf) | 2 | 0.987 |

## 2.7 Combining Tables with nestTable

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | OR(95%CI) | Global p-value | p-value | N |
| **Model 1** |  |  |  |  |
| wt loss | 1.00 (0.98,1.02) |  | 0.973 | 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) |  | 0.834 | 214 |
| Sex |  |  | <0.001 |  |
| Male | Reference |  |  | 128 |
| Female | 0.31 (0.16,0.58) |  |  | 86 |
| AgeGroup |  | 0.280 |  |  |
| (30,40] | Reference |  |  | 3 |
| (40,50] | 7.23 (0.53,98.89) |  | 0.138 | 22 |
| (50,60] | 8.52 (0.68,106.08) |  | 0.096 | 63 |
| (60,70] | 7.93 (0.66,95.39) |  | 0.103 | 82 |
| (70,80] | 14.77 (1.13,192.73) |  | 0.040 | 42 |
| (80,90] | 1.2e+07 (0e+00,Inf) |  | 0.987 | 2 |

Check - what happens if the columns aren’t sorted?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | OR(95%CI) | Global p-value | p-value | N |
| **Model 1** |  |  |  |  |
| wt loss | 1.00 (0.98,1.02) |  | 0.973 | 214 |
| Sex |  |  | <0.001 |  |
| Female | 0.32 (0.17,0.60) |  |  | 86 |
| **Model 2** |  |  |  |  |
| wt loss | 1.00 (0.97,1.02) |  | 0.834 | 214 |
| Sex |  |  | <0.001 |  |
| Male | Reference |  |  | 128 |
| Female | 0.31 (0.16,0.58) |  |  | 86 |
| AgeGroup |  | 0.280 |  |  |
| (30,40] | Reference |  |  | 3 |
| (40,50] | 7.23 (0.53,98.89) |  | 0.138 | 22 |
| (50,60] | 8.52 (0.68,106.08) |  | 0.096 | 63 |
| (60,70] | 7.93 (0.66,95.39) |  | 0.103 | 82 |
| (70,80] | 14.77 (1.13,192.73) |  | 0.040 | 42 |
| (80,90] | 1.2e+07 (0e+00,Inf) |  | 0.987 | 2 |

# 3 covsum and missing values

Add some more examples here…

No Missing Values

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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** |  |  |  | 0.266 | 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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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** |  |  |  | 0.266 | 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

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Unadjusted Estimate(95%CI) | N | p | Adjusted Estimate(95%CI) | N (adj) | p (adj) |
| **Sex** |  | 214 | 0.059 |  |  |  |
| Male | Reference | 128 |  |  |  |  |
| Female | -3.45 (-7.04,0.14) | 86 |  |  |  |  |
| **ph ecog** | 3.42 (0.99,5.85) | 213 | **0.006** |  |  |  |
| **meal cal** | -3.3e-03 (-8.3e-03,1.6e-03) | 171 | 0.182 | -3.3e-03 (-8.3e-03,1.6e-03) | 171 | 0.182 |
| **AgeGroup** |  | 214 | 0.368 |  |  |  |
| (30,40] | Reference | 3 |  |  |  |  |
| (40,50] | 11.29 (-4.64,27.22) | 22 | 0.164 |  |  |  |
| (50,60] | 13.79 (-1.50,29.09) | 63 | 0.077 |  |  |  |
| (60,70] | 11.87 (-3.34,27.08) | 82 | 0.126 |  |  |  |
| (70,80] | 11.10 (-4.37,26.56) | 42 | 0.159 |  |  |  |
| (80,90] | 23.33 (-0.29,46.96) | 2 | 0.053 |  |  |  |

# 6 Reporting p-values

## Estimate Std. Error t value Pr(>|t|)  
## (Intercept) 3.1222 0.6574 4.749 0.0000  
## x1 0.4301 0.1603 2.683 0.0112  
## x2 0.9400 0.3373 2.787 0.0086  
## c1little 1.4628 0.3451 4.239 0.0002  
## c2B 2.3707 0.4185 5.665 0.0000  
## c2C 3.8661 0.4069 9.500 0.0000

## Sum.Sq Df F.value Pr..F.  
## x1 7.454 1 7.199 0.0112  
## x2 8.042 1 7.767 0.0086  
## c1 18.604 1 17.968 0.0002  
## c2 94.693 2 45.728 0.0000  
## Residuals 35.204 34 NA NA

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimate(95%CI) | p-value | Global p-value |
| **x1** | 0.4301 (0.1043,0.7559) | **0.0112** |  |
| **x2** | 0.9400 (0.2546,1.6254) | **0.0086** |  |
| **c1** |  | **0.0002** |  |
| big | Reference |  |  |
| little | 1.4628 (0.7615,2.1642) |  |  |
| **c2** |  |  | **<0.0001** |
| A | Reference |  |  |
| B | 2.3707 (1.5202,3.2212) | **<0.0001** |  |
| C | 3.8661 (3.0391,4.6931) | **<0.0001** |  |

## Estimate Std. Error t value Pr(>|t|)  
## (Intercept) 0.9932 1.0353 0.9594 0.3444  
## x1 0.3646 0.1510 2.4152 0.0214  
## x2 0.8757 0.3140 2.7888 0.0087  
## x3 0.4350 0.1709 2.5455 0.0158  
## c1little 1.3860 0.3217 4.3088 0.0001  
## c2B 2.3487 0.3885 6.0462 0.0000  
## c2C 4.1013 0.3888 10.5489 0.0000

## LR.Chisq Df Pr..Chisq.  
## x1 5.833 1 0.0157  
## x2 7.777 1 0.0053  
## x3 6.479 1 0.0109  
## c1 18.565 1 0.0000  
## c2 112.623 2 0.0000

## (Intercept) x1 x2 x3 c1little c2B   
## 3.374e-01 1.574e-02 5.301e-03 1.093e-02 1.657e-05 1.536e-09   
## c2C   
## 7.027e-26

## (Intercept) x1 x2 x3 c1little c2B   
## 3.441e-01 2.125e-02 8.604e-03 1.562e-02 1.325e-04 7.502e-07   
## c2C   
## 2.917e-12

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimate(95%CI) | p-value | Global p-value |
| **x1** | 0.3646 (0.0575,0.6718) | **0.0214** |  |
| **x2** | 0.8757 (0.2368,1.5145) | **0.0087** |  |
| **x3** | 0.4350 (0.0873,0.7826) | **0.0158** |  |
| **c1** |  | **0.0001** |  |
| big | Reference |  |  |
| little | 1.3860 (0.7316,2.0405) |  |  |
| **c2** |  |  | **<0.0001** |
| A | Reference |  |  |
| B | 2.3487 (1.5584,3.1391) | **<0.0001** |  |
| C | 4.1013 (3.3103,4.8923) | **<0.0001** |  |

## Estimate Std. Error z value Pr(>|z|)  
## (Intercept) -3.4516 2.2959 -1.5034 0.1327  
## x1 -0.1320 0.3199 -0.4127 0.6799  
## x2 1.2438 0.7340 1.6946 0.0902  
## x3 0.2434 0.3783 0.6435 0.5199

## LR.Chisq Df Pr..Chisq.  
## x1 0.1698 1 0.6803  
## x2 3.2117 1 0.0731  
## x3 0.4282 1 0.5129

|  |  |  |
| --- | --- | --- |
|  | OR(95%CI) | p-value |
| **x1** | 0.8763 (0.4682,1.6404) | 0.6799 |
| **x2** | 3.4689 (0.8230,14.6210) | 0.0902 |
| **x3** | 1.2756 (0.6077,2.6773) | 0.5199 |

## coef exp(coef) se(coef) z Pr(>|z|)  
## x1 -1.128 0.3237 0.2797 -4.032 1e-04  
## x2 -1.741 0.1754 0.5636 -3.089 2e-03  
## c1little -2.733 0.0650 0.6104 -4.477 0e+00  
## c2B -2.496 0.0824 0.6483 -3.850 1e-04  
## c2C -5.096 0.0061 0.9141 -5.575 0e+00

## LR.Chisq Df Pr..Chisq.  
## x1 21.054 1 0.0000  
## x2 9.907 1 0.0016  
## c1 24.674 1 0.0000  
## c2 45.213 2 0.0000

|  |  |  |  |
| --- | --- | --- | --- |
|  | HR(95%CI) | p-value | Global p-value |
| **x1** | 0.3237 (0.1871,0.5601) | **0.0001** |  |
| **x2** | 0.1754 (0.0581,0.5293) | **0.0020** |  |
| **c1** |  | **<0.0001** |  |
| big | Reference |  |  |
| little | 0.0650 (0.0197,0.2151) |  |  |
| **c2** |  |  | **<0.0001** |
| A | Reference |  |  |
| B | 0.0824 (0.0231,0.2936) | **0.0001** |  |
| C | 6.121e-03 (1.02e-03,0.0367) | **<0.0001** |  |