Tables & Equations

1 Library

```
library(tidyverse)
library(stargazer) # for reg table
library(MASS) # for data
library(gapminder)# for data
```

2 Tables

2.1 Regression table with `stargazer()`

We will use 25.8 An Example

```
# ols
m0 <- lm(low ~ smoke + race + ht + ui + ftv + age + lwt,
         data = birthwt)
# logit
m1 <- glm(low ~ smoke + race + ht + ui + ftv + age + lwt,
          data = birthwt,
          family = binomial(link = "logit"))
# probit
m2 <- glm(low ~ smoke + race + ht + ui + ftv + age + lwt,
          data = birthwt,
          family = binomial(link = "probit"))
```

```
stargazer::stargazer(m0, m1, m2,
                     type = "latex", # "html" for html
                     title = "Results",
                     header = FALSE,
                     label = "tab:regression1")
```

2.2 Stat table with `kable()`

We will use the `gapminder::gapminder` data.

```
df <- gapminder::gapminder %>%
  filter(year >= 2000) %>%
  group_by(year, continent) %>%
  summarise(mean_life_exp = mean(lifeExp)) %>%
  pivot_wider(
    names_from = year,
    values_from = mean_life_exp
  )
```

```
knitr::kable(df,
             booktabs = TRUE,
             caption = 'Simple Stat Table')
```

Table 1: Results

	Dependent variable:		
	low		
	OLS	*logistic*	*probit*
	(1)	(2)	(3)
smoke	0.186***	1.041***	0.635***
	(0.071)	(0.391)	(0.228)
race	0.081**	0.471**	0.281**
	(0.039)	(0.213)	(0.124)
ht	0.377***	1.851***	1.110***
	(0.137)	(0.690)	(0.414)
ui	0.188**	0.867*	0.537**
	(0.092)	(0.451)	(0.274)
ftv	0.005	0.056	0.026
	(0.031)	(0.169)	(0.100)
age	−0.004	−0.027	−0.017
	(0.006)	(0.035)	(0.021)
lwt	−0.002**	−0.014**	−0.008**
	(0.001)	(0.007)	(0.004)
Constant	0.424*	−0.118	−0.087
	(0.230)	(1.264)	(0.744)
Observations	189	189	189
R^2	0.139		
Adjusted R^2	0.105		
Log Likelihood		−103.362	−103.143
Akaike Inf. Crit.		222.724	222.285
Residual Std. Error	0.439 (df = 181)		
F Statistic	4.167*** (df = 7; 181)		
Note:			*p<0.1; **p<0.05; ***p<0.01

Table 2: Simple Stat Table

continent	2002	2007
Africa	53.32523	54.80604
Americas	72.42204	73.60812
Asia	69.23388	70.72848
Europe	76.70060	77.64860
Oceania	79.74000	80.71950

3 Cross Ref

Table 1 presents blah blah; Table 2 presents blah blah.

4 Dynamic Number

We will work with the logit model `m1`. Suppose you want to extract the coefficient of age.

Note that there are many ways to achieve it. I just present some examples.

4.1 Using `broom`

```
broom::tidy(m1)
```

```
## # A tibble: 8 x 5
##   term        estimate std.error statistic p.value
##   <chr>          <dbl>     <dbl>     <dbl>   <dbl>
## 1 (Intercept)  -0.118    1.26      -0.0930 0.926
## 2 smoke         1.04     0.391      2.66   0.00785
## 3 race          0.471    0.213      2.21   0.0270
## 4 ht            1.85     0.690      2.68   0.00727
## 5 ui            0.867    0.451      1.92   0.0547
## 6 ftv           0.0555   0.169      0.328  0.743
## 7 age          -0.0269   0.0355    -0.760  0.447
## 8 lwt          -0.0135   0.00655   -2.06   0.0390
```

```
broom::tidy(m1)[7,2]# returns a tibble
```

```
## # A tibble: 1 x 1
##   estimate
##      <dbl>
## 1  -0.0269
```

```
broom::tidy(m1)[7,2] %>% pull() # returns a vector
```

```
## [1] -0.02694362
```

- The coefficient of age is -0.0269436167314961
- The coefficient of age is -0.0269436

We can use `round()` to round the number. For example `round()` with `digits = 3` gives the following

- The coefficient of age is -0.027

4.2 Using base R

```
summary(m1)
```

```
##
## Call:
## glm(formula = low ~ smoke + race + ht + ui + ftv + age + lwt,
##     family = binomial(link = "logit"), data = birthwt)
##
## Deviance Residuals:
##     Min       1Q   Median       3Q      Max
## -1.7426  -0.8398  -0.5698   1.0367   2.1293
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept) -0.117505   1.263702  -0.093  0.92592
## smoke        1.040777   0.391484   2.659  0.00785 **
## race         0.471209   0.213123   2.211  0.02704 *
## ht           1.851441   0.689782   2.684  0.00727 **
## ui           0.866535   0.451031   1.921  0.05470 .
## ftv          0.055545   0.169155   0.328  0.74263
## age         -0.026944   0.035468  -0.760  0.44746
## lwt         -0.013512   0.006547  -2.064  0.03901 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for binomial family taken to be 1)
##
##     Null deviance: 234.67  on 188  degrees of freedom
## Residual deviance: 206.72  on 181  degrees of freedom
## AIC: 222.72
##
## Number of Fisher Scoring iterations: 4
```

```
summary(m1)$coefficients[7, 1] # returns a vector
```

```
## [1] -0.02694362
```

- The coefficient of age is -0.0269436
- The coefficient of age is -0.0269436

5 Equations

5.1 inline equation: `$ equation $`

In physics, the mass-energy equivalence is stated by the equation $E = mc^2$, discovered in 1905 by Albert Einstein.

5.2 display equation : `$$ equation $$`

In physics, the mass-energy equivalence is stated by the equation

$$E = mc^2,$$

discovered in 1905 by Albert Einstein.

5.3 Cross Ref

$$y = X\beta + u \tag{1}$$

$$(x + a)^n = \sum_{k=0}^{n} \binom{n}{k} x^k a^{n-k} \tag{2}$$

See equations (1) and (2).