한국인의 삶을 파악하라

- 2006~2015년까지 전국에서 7000여 가구를 선정하여 매년 추적 조사한 자료
- 데이터 셋 : Koweps_hpc10_2015_beta1.sav
  - 2016년도 발간한 복지패널 데이터 6,914가구, 16,664명에 대한 정보

In [1]:

```
install.packages("foreign")
```

```
Warning message:
"unable to access index for repository http://www.stats.ox.ac.uk/pub/RWin/bin/window
s/contrib/3.5: (http://www.stats.ox.ac.uk/pub/RWin/bin/windows/contrib/3.5:)
  URL 'http://www.stats.ox.ac.uk/pub/RWin/bin/windows/contrib/3.5/PACKAGES'를 열 수
 없습니다"

package 'foreign' successfully unpacked and MD5 sums checked

The downloaded binary packages are in
        C:₩Users₩WITHJS₩AppData₩Local₩Temp₩RtmpCgEfb6₩downloaded_packages
```

In [2]:

```
library(foreign)
library(dplyr)
library(ggplot2)
library(readxl)
```

```
Attaching package: 'dplyr'

The following objects are masked from 'package:stats':

    filter, lag

The following objects are masked from 'package:base':

    intersect, setdiff, setequal, union
```

In [3]:

```
dat_welfare <- read.spss(file="D:₩₩dataset₩₩R_Doit₩₩Koweps_hpc10_2015_beta1.sav", to.data.frame=T)
welfare <- dat_welfare
```

```
Warning message in read.spss(file = "D:₩₩dataset₩₩R_Doit₩₩Koweps_hpc10_2015_beta1.sa
v", :
"D:₩dataset₩R_Doit₩Koweps_hpc10_2015_beta1.sav: Compression bias (0) is not the usua
l value of 100"
```

데이터 탐색해 보기

- head(welfare)
- tail(welfare)

- View(welfare)
- dim(welfare)
- str(welfare)
- summary(welfare)

In [4]:

```
welfare <- rename(welfare,
                  sex=h10_g3,
                  birth=h10_g4,
                  marriage=h10_g10,
                  religion=h10_g11,
                  income=p1002_8aq1,
                  code_job=h10_eco9,
                  code_region=h10_reg7)
names(welfare)
```

'h10_id' 'h10_ind' 'h10_sn' 'h10_merkey' 'h_new' 'h10_cobf' 'h10_reg5'
'code_region' 'h10_din' 'h10_cin' 'h10_flag' 'p10_wgl' 'p10_wsl' 'p10_wgc' 'p10_wsc'
'h10_hc' 'nh1001_1' 'nh1001_2' 'h1001_1' 'h10_pind' 'h10_pid' 'h10_g1' 'h10_g2'
'sex' 'birth' 'h10_g6' 'h10_g7' 'h10_g8' 'h10_g9' 'marriage' 'religion' 'h10_g12'
'h1001_110' 'h1001_5aq1' 'h1001_5aq2' 'h1001_5aq3' 'h1001_5aq4' 'h10_med1'
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'c1007_4aq16' 'c1007_4aq17' 'c1007_4aq18' 'c1007_4aq19' 'c1007_4aq20'
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'h10_pers_income3' 'h10_pers_income4' 'h10_pers_income5'

In [7]:

```
welfare_m <- select(welfare, sex, birth, marriage, religion, income, code_job, code_region)
names(welfare_m)
```

'sex' 'birth' 'marriage' 'religion' 'income' 'code_job' 'code_region'

In [10]:

```
head(welfare_m,10)
```

sex	birth	marriage	religion	income	code_job	code_region
2	1936	2	2	NA	NA	1
2	1945	2	2	NA	NA	1
1	1948	2	2	120	942	1
1	1942	3	1	200	762	1
2	1923	2	1	NA	NA	1
1	1962	1	1	NA	530	1
2	1963	1	1	NA	NA	1
2	2003	0	1	NA	NA	1
1	1927	1	1	NA	NA	1
2	1934	1	1	NA	NA	1

미션 - 성별에 따른 월급 차이는 있을까?

- 변수 : 성별, 월급
- 성별, 월급 평균표 만들기
- 그래프 확인

In [12]:

```
str(welfare_m)
```

```
'data.frame':   16664 obs. of  7 variables:
 $ sex        : num  2 2 1 1 2 1 2 2 1 2 ...
 $ birth      : num  1936 1945 1948 1942 1923 ...
 $ marriage   : num  2 2 2 3 2 1 1 0 1 1 ...
 $ religion   : num  2 2 2 1 1 1 1 1 1 1 ...
 $ income     : num  NA NA 120 200 NA NA NA NA NA NA ...
 $ code_job   : num  NA NA 942 762 NA 530 NA NA NA NA ...
 $ code_region: num  1 1 1 1 1 1 1 1 1 1 ...
 - attr(*, "variable.labels")= Named chr  "가구 패널 ID(h10_id)" "가구생성차수(h10_i
nd)" "가구분리일련번호(h10_sn)" "패널간 가구머지 키변수(h10_merkey)" ...
  ..- attr(*, "names")= chr  "h10_id" "h10_ind" "h10_sn" "h10_merkey" ...
```

01 성별 검토

In [13]:

```
class(welfare_m$sex)
```

'numeric'

In [14]:

```
table(welfare_m$sex)
```

```
   1    2
7578 9086
```

- 1: 남자
- 2: 여자
- 9: 응답 없음.

만약 존재할 수 있으므로, 결측치 처리해야함.

In [15]:

```
welfare_m$sex <- ifelse(welfare_m$sex == 9, NA, welfare_m$sex)
table(is.na(welfare_m$sex))  # 결측치 확인
```

```
FALSE
16664
```

변수 1(남자), 2(여자)로 전처리

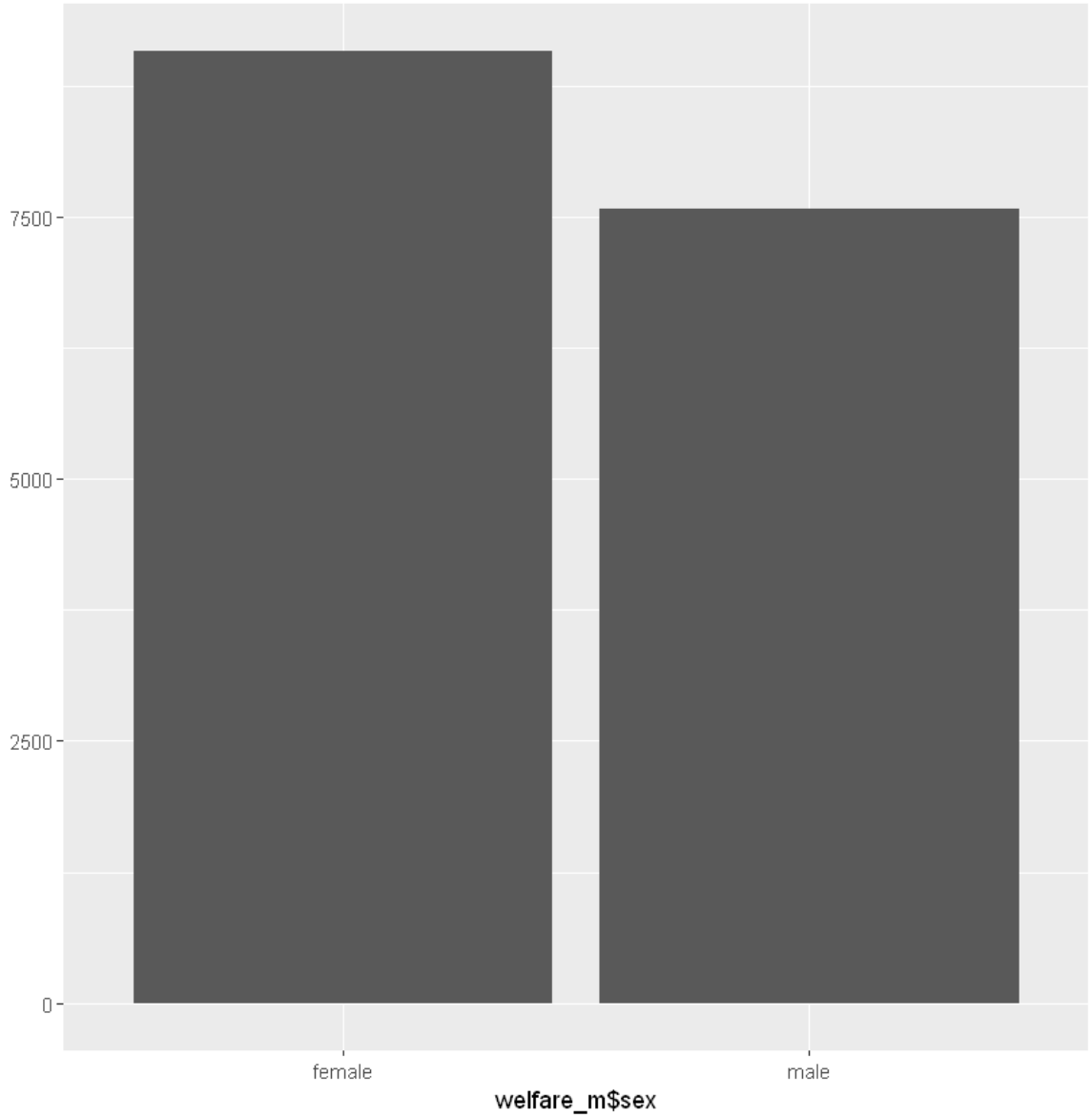
In [18]:

```
welfare_m$sex <- ifelse(welfare_m$sex == 1, "male", "female")
table(welfare_m$sex)
```

```
female   male
  9086   7578
```

In [19]:

```
qplot(welfare_m$sex)
```



02 월급 검토

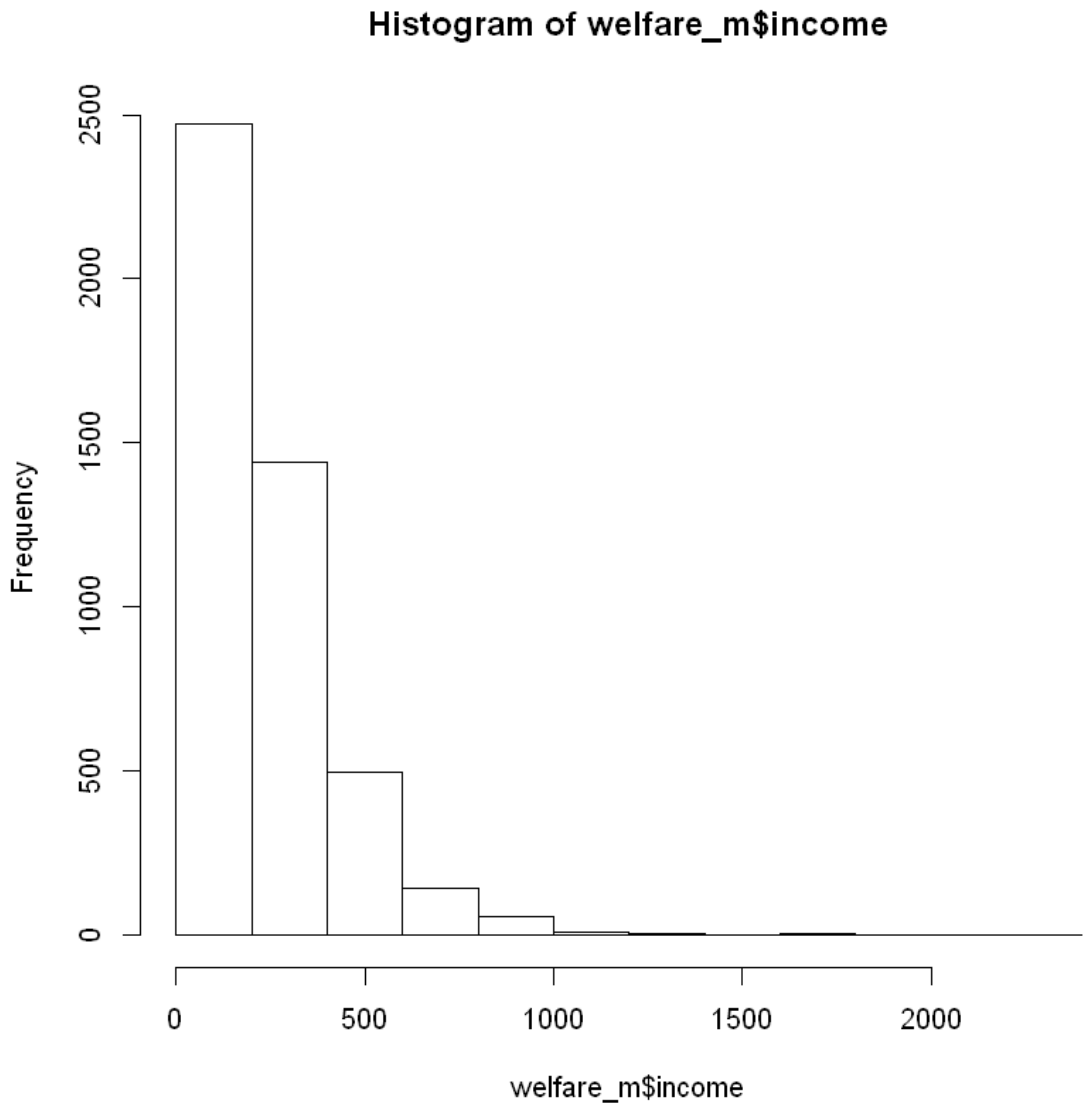
In [20]:

```
names(welfare_m)
```

'sex' 'birth' 'marriage' 'religion' 'income' 'code_job' 'code_region'

In [21]:

```
hist(welfare_m$income)
```



In [22]:

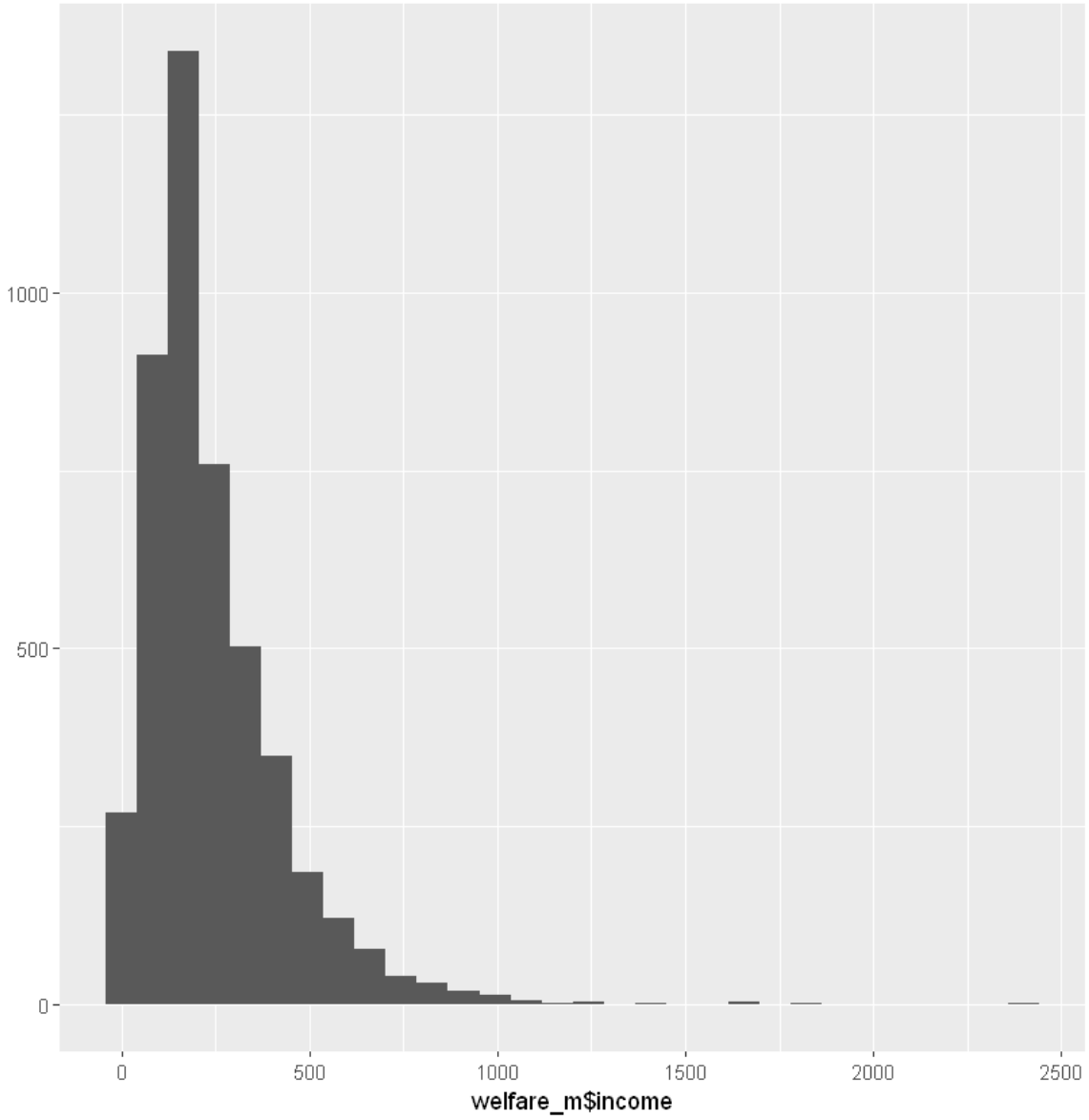
```
summary(welfare_m$income)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
    0.0   122.0   192.5   241.6   316.6  2400.0   12030
```

In [23]:

```
### 자세히 보자.
qplot(welfare_m$income)
```

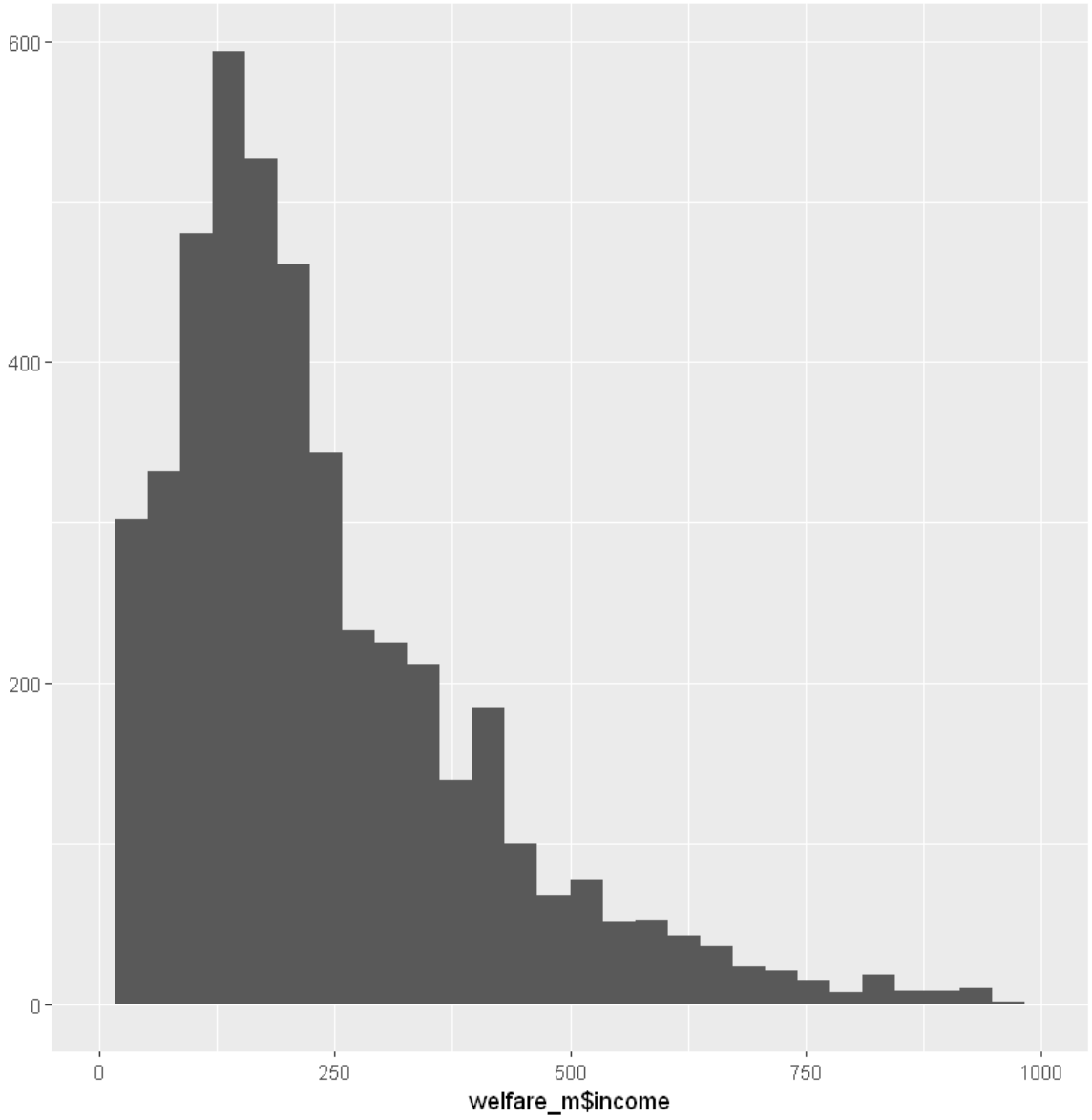
```
`stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
Warning message:
"Removed 12030 rows containing non-finite values (stat_bin)."
```



In [24]:

```
### 자세히 보자.
qplot(welfare_m$income) + xlim(0,1000)
```

```
`stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
Warning message:
"Removed 12051 rows containing non-finite values (stat_bin)."
```



NA를 전처리

In [25]:

```
summary(welfare_m$income)
```

```
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
    0.0   122.0   192.5   241.6   316.6  2400.0   12030
```

In [26]:

```
### 모름/무응답 = 9999
### 범위 1~9998 이므로 0도 결측치 처리
welfare_m$income <- ifelse(welfare_m$income %in% c(0,9999), NA, welfare$income)
table(is.na(welfare_m$income))
```

```
FALSE  TRUE
 4620 12044
```

성별에 따른 월급 차이 분석

In [27]:

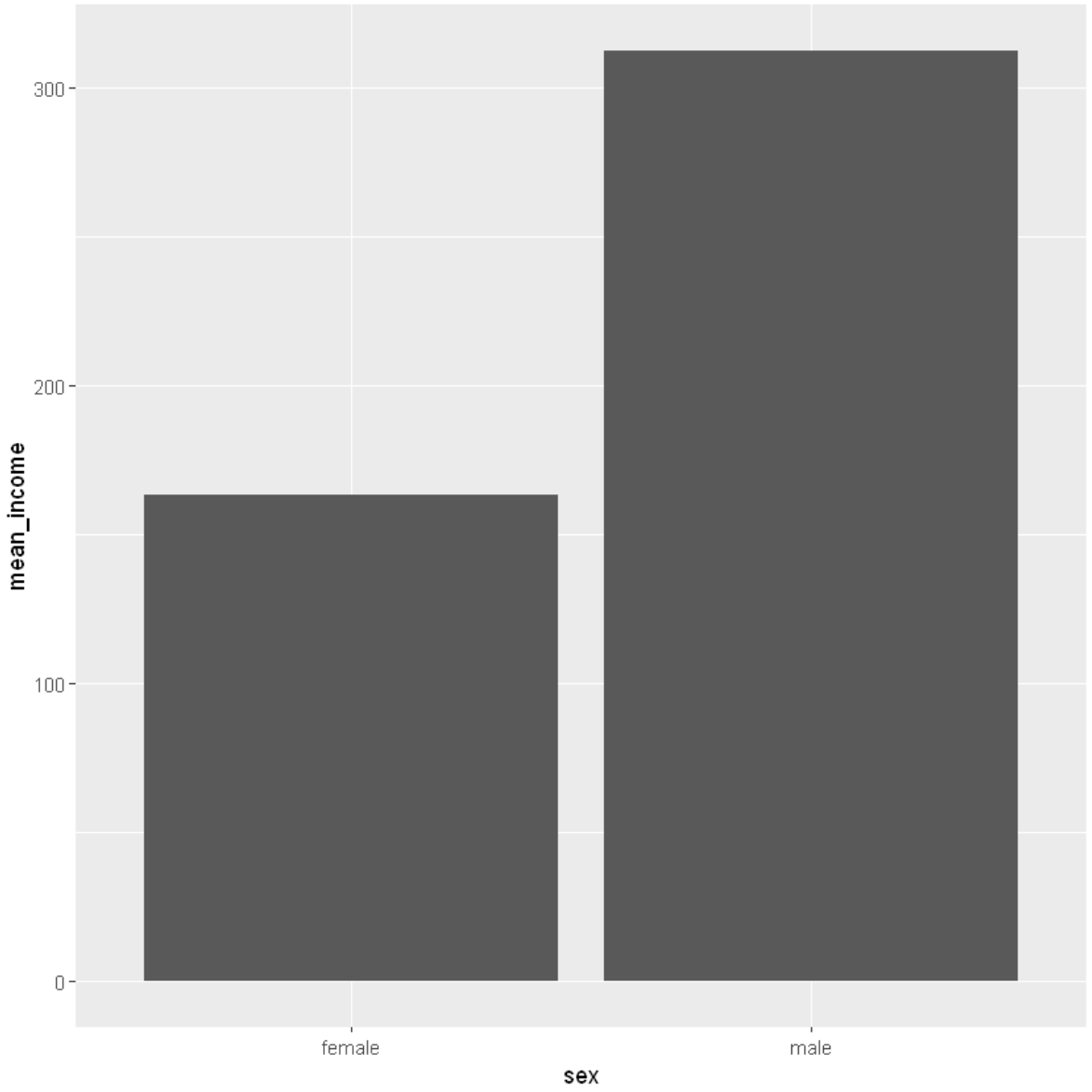
```
sex_income <- welfare_m %>% filter(!is.na(income)) %>%
                            group_by(sex) %>%
                            summarise(mean_income = mean(income))

sex_income
```

sex	mean_income
female	163.2471
male	312.2932

- 월급 평균은 남자가 312만원, 여자는 163만원으로 평균적으로 여성보다 남성의 월급이 약 150만원 많다.

In [28]:

```
ggplot(data = sex_income, aes(x=sex, y=mean_income)) + geom_col()
```



함수	설명
geom_point()	산점도
geom_col()	막대 그래프, X축, Y축을 모두 설정
geom_bar()	막대 그래프, X축만 설정, Y축은 해당 데이터의 수량
geom_line()	선 그래프
geom_boxplot()	박스 그래프

In [ ]:

```
```