

Math130Project

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Introduction

The depression data set is a study of depression in the adult residents of Los Angeles County that includes 294 observations with 37 variables. I am going to explore the correlation between depression and two variables, these variables I will be looking at are income (INCOME) and gender (SEX) My research question is: Is there a possible correlation between amount of income and depression? And is there one gender that suffers most from depression?

```
knitr::opts_chunk$set(fig.width=6, fig.height=4)
library(dplyr)
```

```
##
## 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
```

```
library(ggplot2)
```

```
depress <- read.delim("Depress.txt")
dim(depress)
```

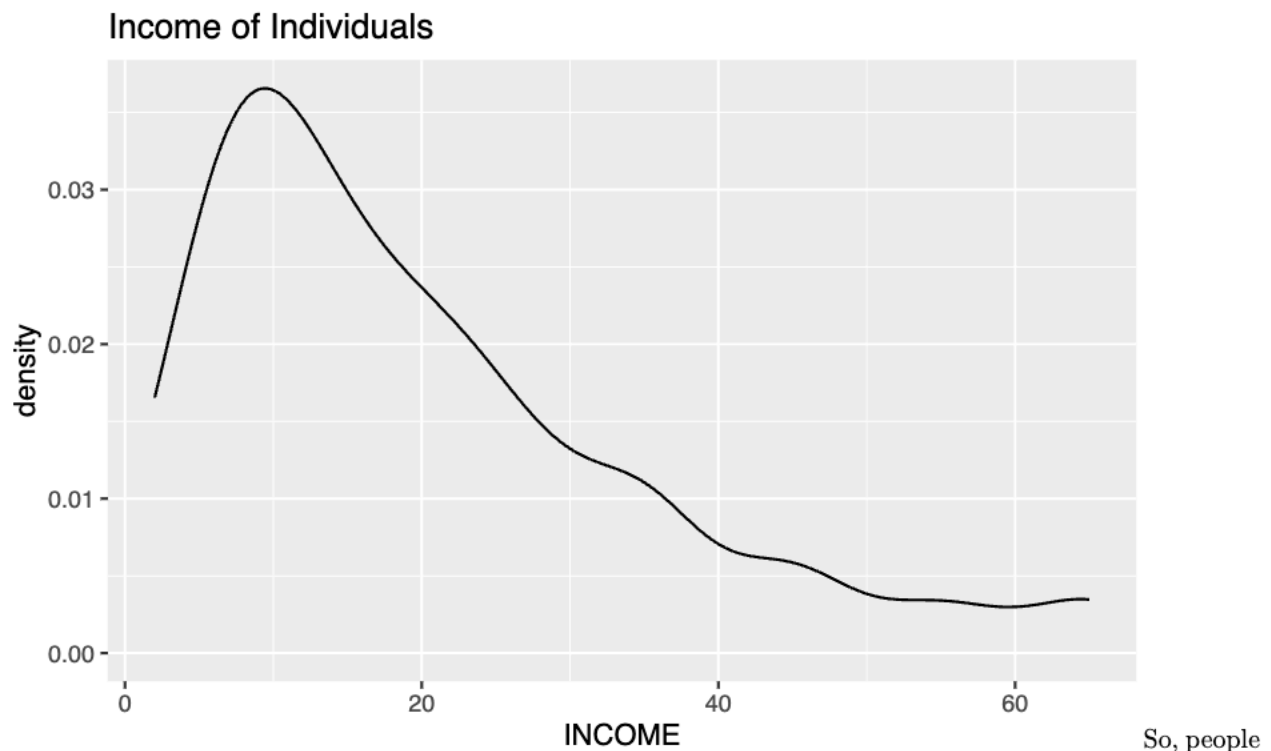
```
## [1] 294 37
```

Income

```
summary(depress$INCOME)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      2.00   9.00   15.00   20.57   28.00   65.00
```

```
ggplot(data = depress, aes(INCOME)) + geom_density() + ggtitle("Income of Individuals")
```



with lower incomes are more likely to be depressed.

Gender

```
depress$sexrename <- factor(depress$SEX, labels = c("male", "female"))
summary(depress$SEX)
```

```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      1.000   1.000   2.000   1.622   2.000   2.000
```

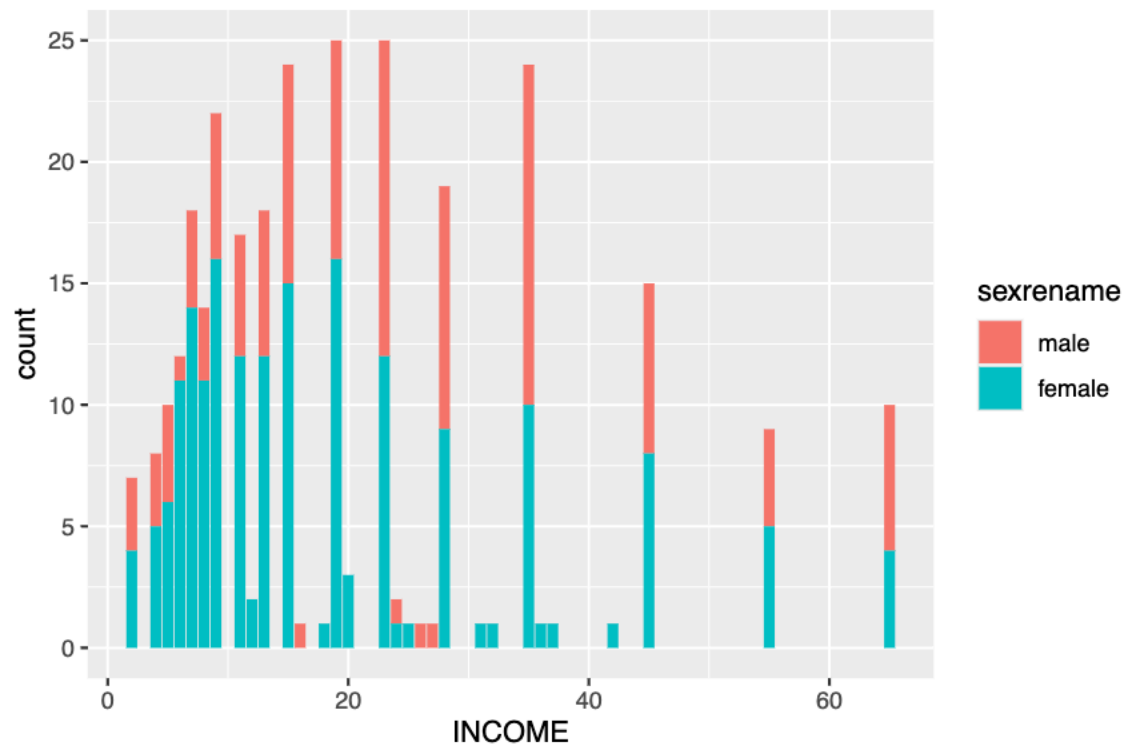
```
table(depress$sexrename)
```

```
##
##   male female
##    111    183
```

So, women are more likely to experience depression than men

Bivariate Income and Gender

```
ggplot(depress, aes(x = INCOME, fill = sexrename)) + geom_bar()
```



Looks like men are more likely to earn larger incomes and women are more vulnerable to both low income and depression.

Conclusion

Our original question was “Is there a correlation between amount of income and depression? And is there one gender that suffers most from depression?”, and after looking at two variables of depression, being sex and income, we can see that there could possibly be a correlation between income and depression. We see that low income might be a factor that contributes to depression. We also see from exploring the gender variable that one gender is more likely to suffer from depression, which would be females.