

# R Workshop

## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
setwd("/Users/patriciakirkland/Dropbox/Empirical Reasoning Center/R Workshop")

load("evaluation_data.RData")

head(data)
```

```
##   minority age female onecredit   beauty course_eval intro nnenglish
## 1         1  36      1         0 0.2899157         4.3      0         0
## 2         0  59      0         0 -0.7377322         4.5      0         0
## 3         0  51      0         0 -0.5719836         3.7      0         0
## 4         0  40      1         0 -0.6779634         4.3      0         0
## 5         0  31      1         0 1.5097940         4.4      0         0
## 6         0  62      0         0 0.5885687         4.2      0         0
```

```
summary(data)
```

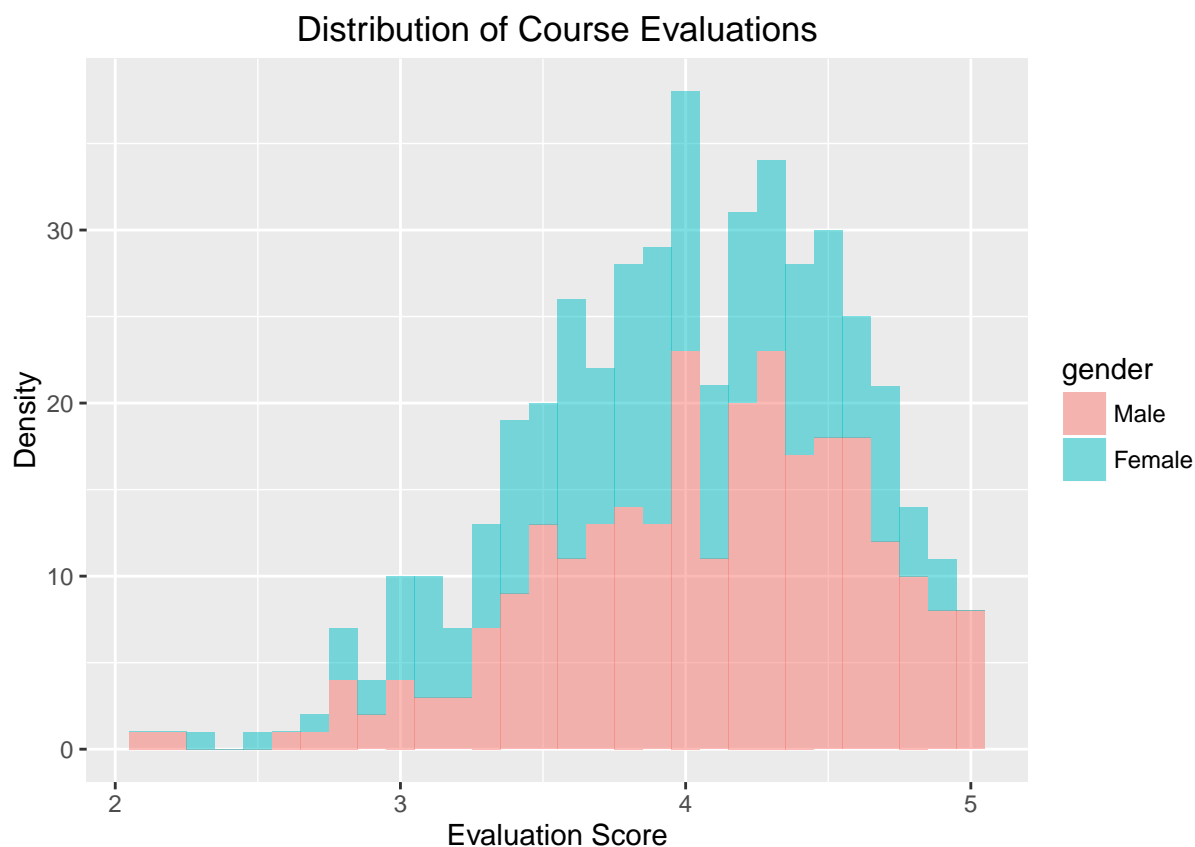
```
##      minority          age          female          onecredit
## Min.   :0.0000   Min.   :29.00   Min.   :0.0000   Min.   :0.00000
## 1st Qu.:0.0000   1st Qu.:42.00   1st Qu.:0.0000   1st Qu.:0.00000
## Median :0.0000   Median :48.00   Median :0.0000   Median :0.00000
## Mean   :0.1382   Mean   :48.37   Mean   :0.4212   Mean   :0.05832
## 3rd Qu.:0.0000   3rd Qu.:57.00   3rd Qu.:1.0000   3rd Qu.:0.00000
## Max.   :1.0000   Max.   :73.00   Max.   :1.0000   Max.   :1.00000
##      beauty          course_eval          intro          nnenglish
## Min.   :-1.4504940   Min.   :2.100   Min.   :0.0000   Min.   :0.00000
## 1st Qu.: -0.6562689   1st Qu.:3.600   1st Qu.:0.0000   1st Qu.:0.00000
## Median : -0.0680143   Median :4.000   Median :0.0000   Median :0.00000
## Mean   : 0.0000001   Mean   :3.998   Mean   :0.3391   Mean   :0.06048
## 3rd Qu.: 0.5456024   3rd Qu.:4.400   3rd Qu.:1.0000   3rd Qu.:0.00000
## Max.   : 1.9700230   Max.   :5.000   Max.   :1.0000   Max.   :1.00000
```

## Writing About Data

With R Markdown, we can easily present information about data. For example, we can start with some descriptive statistics. Our main dependent variable of interest is *course evaluation*, which has a mean of 3.998 with a minimum value of 2.1 and a maximum value of 5.

## Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

## Adding Tables

You can also use the `stargazer` R package (or other R packages, such as `kable` or `xtable`) to add tables to documents created with RMarkdown.

## Summary Statistics

Table 1:

Statistic	N	Mean	St. Dev.	Min	Max
minority	463	0.138	0.346	0	1
age	463	48.365	9.803	29	73
female	463	0.421	0.494	0	1
onecredit	463	0.058	0.235	0	1
beauty	463	0.000000	0.789	-1.450	1.970
course_eval	463	3.998	0.555	2.100	5.000
intro	463	0.339	0.474	0	1
nnenglish	463	0.060	0.239	0	1

## Regression Tables

Table 2:

	<i>Dependent variable:</i>
	course_eval
female	−0.198*** (0.051)
beauty	0.149*** (0.032)
Constant	4.082*** (0.033)
Observations	463
R <sup>2</sup>	0.066
Adjusted R <sup>2</sup>	0.062
Residual Std. Error	0.537 (df = 460)
F Statistic	16.331*** (df = 2; 460)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01

## Why Use R Markdown?

- easy to include plots and results— everything in one file!
- the document is replicable
- produces documents in multiple formats
  - PDF (must have LaTeX)
  - HTML
  - MS Word
- also produces beamer or ioslides, which makes it easy to display code, plots, results