Poverty and Inequality with Complex Survey Data

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2016-12-08

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Chapter 1

Intro

This is a *sample* book written in **Markdown**. You can use anything that Pandoc's Markdown supports, e.g., a math equation $a^2 + b^2 = c^2$.

For now, you have to install the development version of **bookdown** from Github:

```
devtools::install_github("rstudio/bookdown")
```

Remember each Rmd file contains one and only one chapter, and a chapter is defined by the first-level heading `#`.

To compile this example to PDF, you need to install XeLaTeX.

Chapter 2

Install

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 2. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter **??**.

Figures and tables with captions will be placed in `figure` and `table` environments, respectively.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

Reference a figure by its code chunk label with the `fig:` prefix, e.g., see Figure 2.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 2.1.

```
knitr::kable(
  head(iris, 20), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

You can write citations, too. For example, we are using the **bookdown** package (Xie, 2016) in this sample book, which was built on top of R Markdown and **knitr** (Xie, 2015).

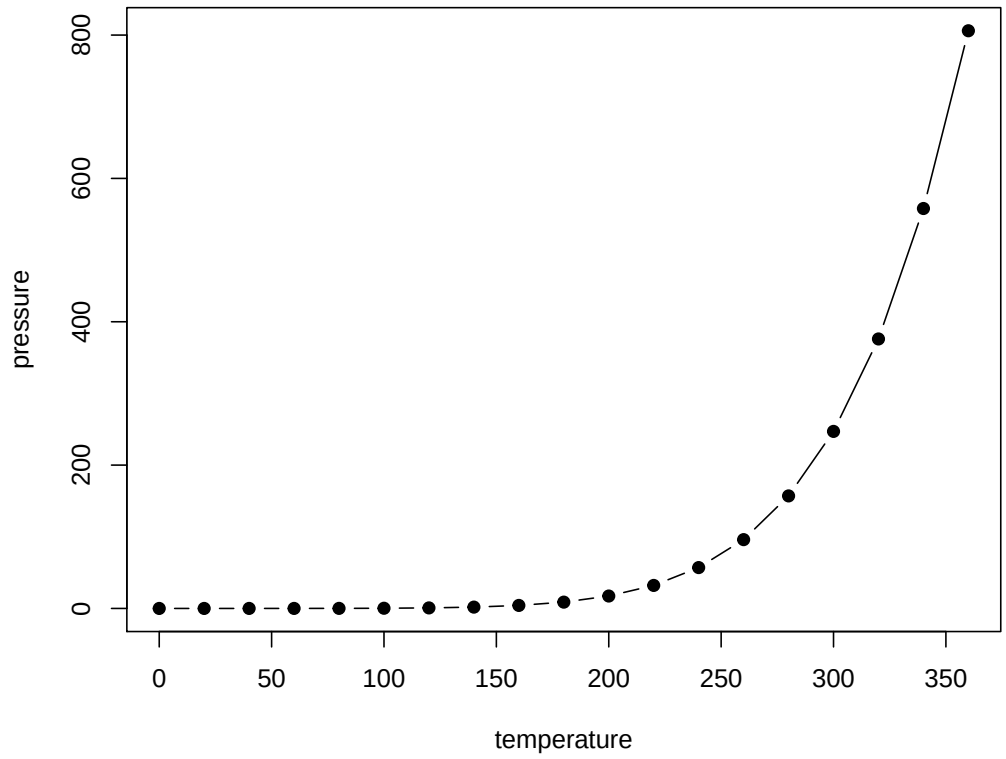

Figure 2.1: Here is a nice figure!

Table 2.1: Here is a nice table!

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa
5.4	3.7	1.5	0.2	setosa
4.8	3.4	1.6	0.2	setosa
4.8	3.0	1.4	0.1	setosa
4.3	3.0	1.1	0.1	setosa
5.8	4.0	1.2	0.2	setosa
5.7	4.4	1.5	0.4	setosa
5.4	3.9	1.3	0.4	setosa
5.1	3.5	1.4	0.3	setosa
5.7	3.8	1.7	0.3	setosa
5.1	3.8	1.5	0.3	setosa

Chapter 3

Complex surveys and statistical inference

[I think we should have a discussion about what is complex survey, its importance and so on. We can use a book Djalma wrote.]

Chapter 4

Poverty Indices

We describe our methods in this chapter.

4.1 At Risk of Poverty Ratio and Threshold (svyarpr and svyarpt)

4.2 The Gender Pay Gap (svygpg)

4.3 Quintile Share Ratio (svyqsr)

4.4 Relative Median Income Ratio (svyrmir)

4.5 Relative Median Poverty Gap (svyrmpg)

4.6 Median Income Below the At Risk of Poverty Threshold (svypoormed)

4.7 Quantiles (svyiqalpha)

4.8 Totals (svyisq)

Chapter 5

Inequality Measurement

[Present an introduction to what is inequality].

5.1 Theoretical aspects of inequality

5.1.1 Desirable properties of inequality measures

5.2 Lorenz Curve (svylorenz)

5.3 Measures derived from the Lorenz Curve

5.3.1 Gini index (svygini)

5.3.2 Amato index (svyamato)

5.3.3 Zenga Index and Curve (svyzenga and svyzengacurve)

5.4 Entropy-based Measures

5.4.1 Atkinson index (svyatk)

5.4.2 Generalized Entropy and Decomposition (svygei and svygeidec)

5.4.3 J-Divergence Entropy and Decomposition (svyjdiv and svyjdivdec)

5.4.4 Rényi Divergence (svyrenyi)

Chapter 6

Multidimensional Indices

We have finished a nice book.

6.1 Alkire-Foster Class and Decomposition (svyafc and svyafcdec)

6.2 Bourguignon (1999) inequality class (svybmi)

Bibliography

Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.

Xie, Y. (2016). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.3.2.