

Book on Economics

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第 1 章

この本について

経済関係のデータサイエンスの内容を書いていくための練習用です。ほぼ、同じ内容を、README にも、書いてありますから、この内容 (`index.Rmd`) は、編集段階で消去して構いません。

RStudio の New Project から Book を選び、作成したファイルを、編集したものです。最初に書かれている内容は、本を作成する時に、有用な内容も含みますから、それは、最後の、bookdown に、まとめてあります。

自分で、bs4_book テンプレートを利用して、日本語で本を書く時には、リポジトリ bs4_book_template を利用することも可能です。必要ファイルを整理し、`preamble.tex` に、数行書き加え、日本語で、PDF も作成できるようにしてあります。

1.1 Git-GitHub-Pull Request を用いての共同編集

本を作成するには、いくつかのレベルがあります。

1. RStudio book project を作成して、編集
2. Git を利用して、履歴をとる
3. GitHub Repository に同期させて編集
4. 管理者の GitHub Repository (オリジナル・リポジトリ) からフォークしたリポジトリを編集して、Pull Request
5. 編集者何人かで、共同編集
6. 編集者何人かで共同編集し、その管理を行う

最後の二つは、管理者としての仕事を含みます。

これらを、段階的に、練習しているための、練習用 Book となっています。

第 2 章

Hello bookdown

All chapters start with a first-level heading followed by your chapter title, like the line above. There should be only one first-level heading (#) per .Rmd file.

2.1 A section

All chapter sections start with a second-level (##) or higher heading followed by your section title, like the sections above and below here. You can have as many as you want within a chapter.

An unnumbered section

Chapters and sections are numbered by default. To un-number a heading, add a `{.unnumbered}` or the shorter `{-}` at the end of the heading, like in this section.

第 I 部

PART I First Part

第 3 章

Chapter I of Part I

第 1 部の名称と最初の章の名称を書いてから、内容を書いていきます。

新しい、章を加える時は、New Blank File から、R Markdown を選び、番号をふります。

付録 A

Bookdown

A.1 Hello bookdown

All chapters start with a first-level heading followed by your chapter title, like the line above. There should be only one first-level heading (#) per .Rmd file.

A.1.1 A section

All chapter sections start with a second-level (##) or higher heading followed by your section title, like the sections above and below here. You can have as many as you want within a chapter.

An unnumbered section

Chapters and sections are numbered by default. To un-number a heading, add a `{.unnumbered}` or the shorter `{-}` at the end of the heading, like in this section.

A.2 Cross-references

Cross-references make it easier for your readers to find and link to elements in your book.

A.2.1 Chapters and sub-chapters

There are two steps to cross-reference any heading:

1. Label the heading: `# Hello world {#nice-label}`.
 - Leave the label off if you like the automated heading generated based on your heading title: for example, `# Hello world = # Hello world {#hello-world}`.

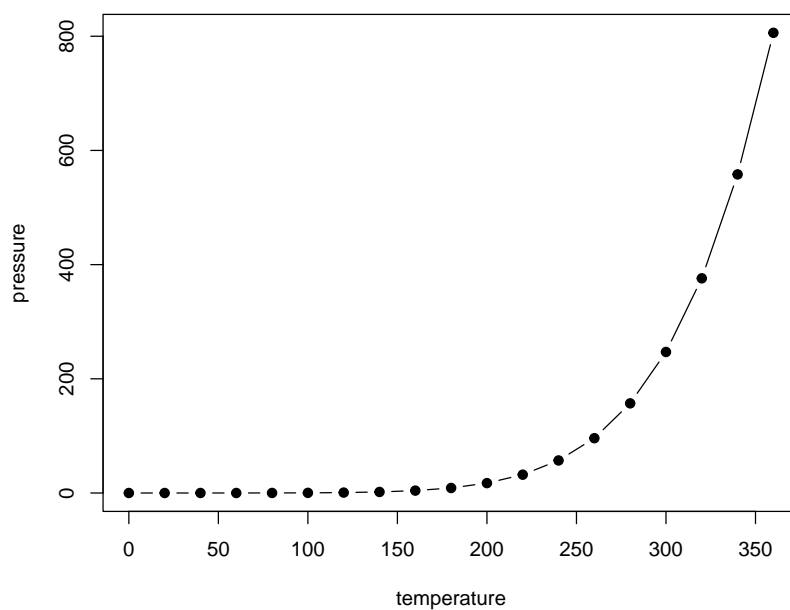
- To label an un-numbered heading, use: `# Hello world {-#nice-label}` or `{# Hello world .unnumbered}`.
2. Next, reference the labeled heading anywhere in the text using `\@ref(nice-label)`; for example, please see Chapter A.2.
- If you prefer text as the link instead of a numbered reference use: any text you want can go here.

A.2.2 Captioned figures and tables

Figures and tables *with captions* can also be cross-referenced from elsewhere in your book using `\@ref(fig:chunk-label)` and `\@ref(tab:chunk-label)`, respectively.

See Figure A.1.

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



図A.1 Here is a nice figure!

Don't miss Table A.1.

```
knitr::kable(
  head(pressure, 10), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

表A.1 Here is a nice table!

temperature	pressure
0	0.0002
20	0.0012
40	0.0060
60	0.0300
80	0.0900
100	0.2700
120	0.7500
140	1.8500
160	4.2000
180	8.8000

A.3 Parts

You can add parts to organize one or more book chapters together. Parts can be inserted at the top of an .Rmd file, before the first-level chapter heading in that same file.

Add a numbered part: `# (PART) Act one {-}` (followed by `# A chapter`)

Add an unnumbered part: `# (PART*) Act one {-}` (followed by `# A chapter`)

Add an appendix as a special kind of un-numbered part: `# (APPENDIX) Other stuff {-}` (followed by `# A chapter`). Chapters in an appendix are prepended with letters instead of numbers.

A.4 Footnotes and citations

A.4.1 Footnotes

Footnotes are put inside the square brackets after a caret `^[]`. Like this one ^{*1}.

A.4.2 Citations

Reference items in your bibliography file(s) using `@key`.

For example, we are using the **bookdown** package (Xie, 2023) (check out the last

^{*1} This is a footnote.

code chunk in `index.Rmd` to see how this citation key was added) in this sample book, which was built on top of R Markdown and **knitr** (Xie, 2015) (this citation was added manually in an external file `book.bib`). Note that the `.bib` files need to be listed in the `index.Rmd` with the YAML `bibliography` key.

The `bs4_book` theme makes footnotes appear inline when you click on them. In this example book, we added `cs1: chicago-fullnote-bibliography.cs1` to the `index.Rmd` YAML, and include the `.cs1` file. To download a new style, we recommend: <https://www.zotero.org/styles/>

The RStudio Visual Markdown Editor can also make it easier to insert citations: <https://rstudio.github.io/visual-markdown-editing/#/citations>

A.5 Blocks

A.5.1 Equations

Here is an equation.

$$f(k) = \binom{n}{k} p^k (1-p)^{n-k} \quad (\text{A.1})$$

You may refer to using `\@ref{eq:binom}`, like see Equation (A.1).

A.5.2 Theorems and proofs

Labeled theorems can be referenced in text using `\@ref{thm:tri}`, for example, check out this smart theorem A.1.

Theorem A.1. *For a right triangle, if c denotes the length of the hypotenuse and a and b denote the lengths of the **other** two sides, we have*

$$a^2 + b^2 = c^2$$

Read more here <https://bookdown.org/yihui/bookdown/markdown-extensions-by-bookdown.html>.

A.5.3 Callout blocks

The `bs4_book` theme also includes special callout blocks, like this `.rmdnote`.

You can use **markdown** inside a block.

```
head(beaver1, n = 5)
#>   day time temp activ
```



```
#> 1 346 840 36.33 0
#> 2 346 850 36.34 0
#> 3 346 900 36.35 0
#> 4 346 910 36.42 0
#> 5 346 920 36.55 0
```

It is up to the user to define the appearance of these blocks for LaTeX output.

You may also use: `.rmdcaution`, `.rmdimportant`, `.rmdtip`, or `.rmdwarning` as the block name.

The R Markdown Cookbook provides more help on how to use custom blocks to design your own callouts: <https://bookdown.org/yihui/rmarkdown-cookbook/custom-blocks.html>

A.6 Sharing your book

A.6.1 Publishing

HTML books can be published online, see: <https://bookdown.org/yihui/bookdown/publishing.html>

A.6.2 404 pages

By default, users will be directed to a 404 page if they try to access a webpage that cannot be found. If you'd like to customize your 404 page instead of using the default, you may add either a `_404.Rmd` or `_404.md` file to your project root and use code and/or Markdown syntax.

A.6.3 Metadata for sharing

Bookdown HTML books will provide HTML metadata for social sharing on platforms like Twitter, Facebook, and LinkedIn, using information you provide in the `index.Rmd` YAML. To setup, set the `url` for your book and the path to your `cover-image` file. Your book's `title` and `description` are also used.

This `bs4_book` provides enhanced metadata for social sharing, so that each chapter shared will have a unique description, auto-generated based on the content.

Specify your book's source repository on GitHub as the `repo` in the `_output.yml` file, which allows users to view each chapter's source file or suggest an edit. Read more about the features of this output format here:

https://pkgs.rstudio.com/bookdown/reference/bs4_book.html

Or use:

```
?bookdown::bs4_book
```

参考文献

- Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.
- Xie, Y. (2023). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.32.