

# Document title

## Subtitle

Author name(s)

July 10, 2023

## Abstract

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## 1 Introduction

Configure the YAML header including the following elements:

- **title:** Title
- **subtitle:** Subtitle; remove option completely, if you don't need a subtitle.
- **author:** Character of single or multiple author(s)
- **header\_left:** A running title as left header; remove option to leave blank.
- **header\_right:** A second right header (e.g. authors); remove option to leave blank.
- **date:** The date; by default `\date`, will populate the date automatically.
- **fontsize:** Font size for body text; choose between 10pt, 11pt (default), and 12pt.
- **linkcolor, filecolor, citecolor, urlcolor:** Specify here colors for internal links, external links, citation links, and linked URLs, respectively, if you don't want the default colors; use options allowed by `xcolor`, including the `dvipsnames`, `svgnames`, and `x11names` lists.
- **german:** If option is set to `true`, the table and figure caption as well as the abstract and reference header will be in German; default is `false` (i.e., English).
- **bibliography:** A path to the bibliography file(s) to use for references (BibTeX *.bib* file). This template uses the bibliography-related package `natbib`. The current file 'references.bib' in the 'bib/' folder includes 3 dummy references; either insert your references into this file or replace the file with your own.
- **bibliographystyle:** The style is provided in the `bibstyle.bst` file, which adopts the **SAGE Harvard** reference style. Just leave the file as it is.
- **abstract:** Write here your abstract or remove option if you don't want to include an abstract.
- **output:** The nested fields for the output field are based on the arguments of the output function. Since `UHHformats::pdf_simple` is based on `rmarkdown::pdf_document`, see its help page for more options. Current default settings are
  - `number_sections: TRUE`
  - `highlight: "kate"`
  - `font = "Helvetica"`
  - `citation_package: "natbib"`
  - `latex_engine: "xelatex"`
- **header\_includes:** Here you can add additional  $\text{\LaTeX}$ code to include in the header, before the `\begin{\document{}` statement.

- If you want to add additional LaTeX code to include before the `\end{document}` statement use the field `include_after`.

If you are associated with the UHH you can also use the University's own font "TheSansUHH". In that case replace `font = "Helvetica"` with `font = "TheSansUHH"`. To use another font, simply use the setting "other" and replace the 'font\_XXX.ttf' files in the working directory with your own files. Please note, that you have to name these files exactly as the template font files.

## 2 Methods

### 2.1 R Markdown syntax vs LaTeX syntax

As with any .Rmd file you can write the entire report in the R Markdown syntax. However, if you are familiar with LaTeX you can also mix both:

#### 2.1.1 R Markdown subsection

This is a dummy text to show you how to write in **bold** and in *italics*.

#### 2.1.2 LaTeX subsection

This is a dummy text to show you that you can also write in **bold** and in *italics* with LaTeX.

### 2.2 Cross-referencing within the report

To cross-reference figures or tables you have to have a:

- **caption to your figure (or table):**
  - NOTE: figures without a caption will be included directly as images and will therefore not be a numbered figure
- **labeled code chunk:** this provides the identifier for referencing the figure or table generated by the chunk.

Cross-references within the text can then be made using the standard LaTeX syntax `\@ref{type:label}`, where label is the chunk label and type is the environment being referenced (e.g. tab, fig, or eq). Examples are given in the sections below (e.g. in [R Markdown table](#)).

To cross-reference sections simply put the section header in square brackets, e.g. [R output](#) via `[R output]`.

### 2.3 Mathematics

Use mathematics as usual with the dollar sign `$`; either in inline mode with one dollar sign, e.g.  $E = mc^2$ , or in display mode with two:

$$E = mc^2$$

Important to note: do not leave a space between the `$` and your mathematical notation.

Alternatively, you can use  $\LaTeX$  for more control, e.g. for setting equation numbers that can be cross-referenced:

$$\bar{X} = \frac{\sum_{i=1}^n X_i}{n} \tag{1}$$

You may refer to this equation using `\ref{eq:label}`, e.g., see Equation ??