Add dynamic elements to reports

Instructions

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This exercise builds on the previous exercise where you learnt to build a simple MS Word report .

1 Objectives

- You are tasked with generating a simple analytically reproducible report on a fictitious outbreak;

1

- If you have generated the simple MS Word report as in Exercise 3, continue working on the same Quarto notebook you already modified. Otherwise, download the files `df1.RData` and `exercise4.qmd` using the links provided on the right-hand side of this page. For simplicity, please put these two files under the same folder and open the Quarto notebook in RStudio.
- Complete each of the following tasks and render the document after each task or set of tasks to track your progress;
- All text formatted in bold is a placeholder and should be replaced with appropriate automated calculations or cross-references;
- The final output should be a Microsoft (MS) Word report, containing all required tables, figures, corresponding captions and cross-references, and formatted with the Swiss TPH template.

2 Improve navigation and readability

☐ Insert a table of contents to the rendered MS Word document;
☐ Automatically number the different sections of the rendered MS Word document;
☐ Configure the table of contents to only display two levels of section headings.

> 💡 Tip
>
> - See Quarto documentation about table of contents

3 Implement dynamic calculations

☐ Change the date `2023-12-31` to the date at which the MS Word document was last rendered;
☐ Format the date at which the MS Word document was last rendered to display it with the format `December 31, 2023`;

> 💡 Tip
>
> - See Quarto documentation about date formatting
> - See Quarto documentation about dynamic dates

☐ Replace the placeholder text in bold with the automated calculation of the outbreak start and end dates;

"*The outbreak ran from **date** to **date***"

☐ Replace the placeholder text in bold with the automated calculation of the number of cases, confirmed cases and deaths. (Hint: We suggest to calculate these numbers in chunks in order to keep inline code short.)

"*Over the studied period, there were* **N** *cases, including* **N** *confirmed cases and* **N** *confirmed deaths.*"

> 💡 Tip
>
> - See Quarto documentation about [inline code](#)

4 Reference tables

Table 1

☐ Assign a label to the table summarising the demographic characteristics and outcome frequency of all cases;
☐ Replace the placeholder text in bold with a cross-reference to the table.

"**cross-reference** *provides a summary of the demographic characteristics and the outcome proportion for the overall population*"

Table 2

☐ Assign a label to the table summarising the demographic characteristics of individuals who died versus those who are still alive;
☐ Replace the placeholder text in bold with a cross-reference to the table.

"*while* **cross-reference** *compares the demographic characteristics of individuals who died versus those who are still alive*"

Table 3

☐ Assign a label to the table summarizing the odds ratios from the logistic regression model;
☐ Replace the placeholder text in bold with a cross-reference to the table

"The results of the logistic regression model are summarized in the formatted regression table, which is presented in **cross-reference**."

> **💡 Tip**
>
> - See [Quarto documentation about table cross-references](#)

> **❗ Important**
>
> - There is a [known issue](#) with formatting `gt` and `gtsummary` tables in MS Word, particularly when adding captions (thank you to Zhihan for raising this). This documented bug can cause rendering problems. To avoid this, please convert your `gt` or `gtsummary` tables to `flextable` before generating the final document.

5 Reference figures

Figure 1

☐ Assign a label to the figure;
☐ Replace the placeholder text in bold with a cross-reference to the figure;

"***cross-reference*** *illustrates the outbreak's progression, which can be divided into distinct phases.*"

☐ Adjust the dimensions of the figure until you are happy with them.

> **💡 Tip**
>
> - See [Quarto documentation about figure cross-references](#)
> - See `fig-width` and `fig-height` options to adjust figure dimensions

6 Reference code chunks

☐ Add a caption to the code chunk for your R implementation of the logistic regression;
☐ Assign a label to the code chunk;
☐ Replace the placeholder text in bold with a cross-reference to the code chunk.

> **💡 Tip**
>
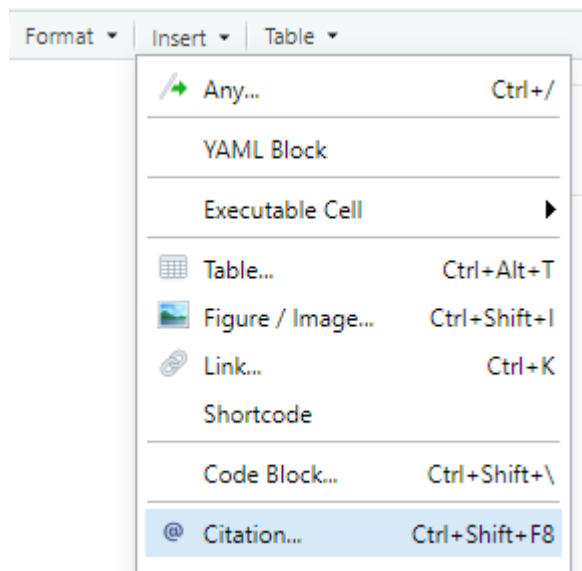> - See [Quarto documentation about code chunk cross-references](#)

7 Add bibliographic references

☐ Create a bibliography (BibTeX) file `my_biblio.bib` in the same folder as your Quarto notebook;

☐ Link the BibTeX file by adding it to the YAML header of your Quarto notebook;

☐ Add a new reference for [10.1016/S0140-6736(24)02669-2](#) in the BibTeX file;

☐ Create a new section named `Background` in your Quarto notebook, after the `Overview` section and before the `Population` section;

☐ Insert the following sentence into the `Background` section, and replace the placeholder text in bold with the correct citation key from your BibTeX file.

"***citation*** *describes trends in suspected and confirmed monkeypox virus cases in the Democratic Republic of Congo using epidemiological and laboratory surveillance data collected from 2010 to 2023.*"

> 💡 Tip
>
> - You can generate the BibTeX entry from the DOI using citation management tools;
> - See [Quarto documentation about citations](#) for guidance on formatting references;
> - If you are not familiar with BibTeX files or programming, Quarto's visual mode offers user-friendly tools for managing citations, allowing you to handle most of the previous steps automatically.

Format ▾	Insert ▾	Table ▾

↗ Any...	Ctrl+/
YAML Block	
Executable Cell	▶
▦ Table...	Ctrl+Alt+T
🖼 Figure / Image...	Ctrl+Shift+I
🔗 Link...	Ctrl+K
Shortcode	
Code Block...	Ctrl+Shift+\
@ Citation...	Ctrl+Shift+F8

8 Format MS Word reports with styles

☐ Apply the Swiss TPH template `swisstph_template.docx` to your rendered MS Word report;

☐ To go further, try creating your own custom Word template and apply it to your report to explore how MS Word styles can be personalized.

> 💡 Tip
>
> - See Quarto documentation about Word templates;
> - To create a template with customized MS Word styles, you will need to start with a Quarto-rendered MS Word report. This is because not all MS Word styles are supported by Quarto, and starting from a rendered report ensures better compatibility.