The University Of Edinburgh

School Of Geosciences

COMPARISON OF TOP-DOWN AND BOTTOM-UP APPROACHES ON SPECIFIC LEAF AREA PATTERNS, AT GLOBAL, LATITUDINAL, AND BIOME SCALES

By

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in partial fulfilment of the requirement
for the degree of BSc with Honours
in Ecological and Environmental Sciences

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Abstract

(the spacing is set to 1.5)

no more than 250 words for the abstract

- a description of the research question/knowledge gap – what we know and what we don't know
- how your research has attempted to fill this gap
- a brief description of the methods
- brief results
- key conclusions that put the research into a larger context

(Breton et al. 2006)

(Breton, Diamond & Kress 2006)

Breton et al. (2006)

Breton, Diamond & Kress (2006)

(Martin 1989, Breton et al. 2006)

Breton et al.

Breton, Diamond & Kress

2006

(2006)

Contents

Acknowledgements

Thank you for following this tutorial!

I hope you'll find it useful to write a very professional dissertation.

1 Introduction

- introduce the reader to the subject area and clarify the knowledge gap that the dissertation research will fill.
- set the context for the dissertation by reviewing the relevant literature.
- include relevant references to general (theoretical papers and reviews) and specific (specific to the particular question addressed) literature, to justify the research that has been undertaken and define the questions being addressed.
- state the primary research questions and hypotheses in the final paragraph.
- follow an 'inverted triangle' format, progressing from general scientific ideas and why they matter to the specific research questions addressed in the dissertation project.

The introduction should not be just a 'Literature Review.'

2 Methods

Write your methods here. In this tutorial you can use this already made file\to add examples of figures and tables and explore knitr and kableExtra functionalities!

3 Results

Some more guidlines from the School of Geosciences.

This section should summarise the findings of the research referring to all figures, tables and statistical results (some of which may be placed in appendices). - include the primary results, ordered logically - it is often useful to follow the same order as presented in the methods. - alternatively, you may find that ordering the results from the most important to the least important works better for your project. - data should only be presented in the main text once, either in tables or figures; if presented in figures, data can be tabulated in appendices and referred to at the appropriate point in the main text.

Often, it is recommended that you write the results section first, so that you can write the methods that are appropriate to describe the results presented. Then you can write the discussion next, then the introduction which includes the relevant literature for the scientific story that you are telling and finally the conclusions and abstract – this approach is called writing backwards.

4 Discussion

the purpose of the discussion is to summarise your major findings and place them in the context of the current state of knowledge in the literature. When you discuss your own work and that of others, back up your statements with evidence and citations. - The first part of the discussion should contain a summary of your major findings (usually 2 – 4 points) and a brief summary of the implications of your findings. Ideally, it should make reference to whether you found support for your hypotheses or answered your questions that were placed at the end of the introduction. - The following paragraphs will then usually describe each of these findings in greater detail, making reference to previous studies. - Often the discussion will include one or a few paragraphs describing the limitations of your study and the potential for future research. - Subheadings within the discussion can be useful for orienting the reader to the major themes that are addressed.

5 Conclusion

The conclusion section should specify the key findings of your study, explain their wider significance in the context of the research field and explain how you have filled the knowledge gap that you have identified in the introduction. This is your chance to present to your reader the major take-home messages of your dissertation research. It should be similar in content to the last sentence of your summary abstract. It should not be a repetition of the first paragraph of the discussion. They can be distinguished in their connection to broader issues. The first paragraph of the discussion will tend to focus on the direct scientific implications of your work (i.e. basic science, fundamental knowledge) while the conclusion will tend to focus more on the implications of the results for society, conservation, etc.

6 Bibliography

Breton, A. R., Diamond, A. W. & Kress, S. W. (2006), 'Encounter, Survival, and Movement Probabilities from an Atlantic Puffin (fratercula Arctica) Metapopulation', *Ecological Monographs* **76**(1), 133–149. _eprint: https://esajournals.onlinelibrary.wiley.com/doi/pdf/10.1890/05-0704.
URL: *https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/05-0704*

Martin, A. R. (1989), 'The diet of Atlantic Puffin *Fratercula arctica* and Northern Gannet *Sula bassana* chicks at a Shetland colony during a period of changing prey availability', *Bird Study* **36**(3), 170–180.
URL: *http://www.tandfonline.com/doi/full/10.1080/00063658909477022*

7 Appendix(ces)

7.1 Appendix A: additional tables

Year	Country list	Population trend	ID	Mean max. T (°C)	Mean min. T (°C)
1979	Norway	1.00	8122	8.23	3.95
1979	Norway	1.00	2556	8.23	3.95
1980	Norway	0.00	2555	9.09	4.82
1980	Norway	0.00	8126	9.09	4.82
1980	Norway	0.80	8122	9.09	4.82
1980	Norway	0.00	2553	9.09	4.82
1980	Norway	0.83	2556	9.09	4.82
1981	Norway	0.20	2555	8.73	4.22
1981	Norway	0.29	8126	8.73	4.22
1981	Norway	0.88	8122	8.73	4.22

7.2 Appendix B: additional figures

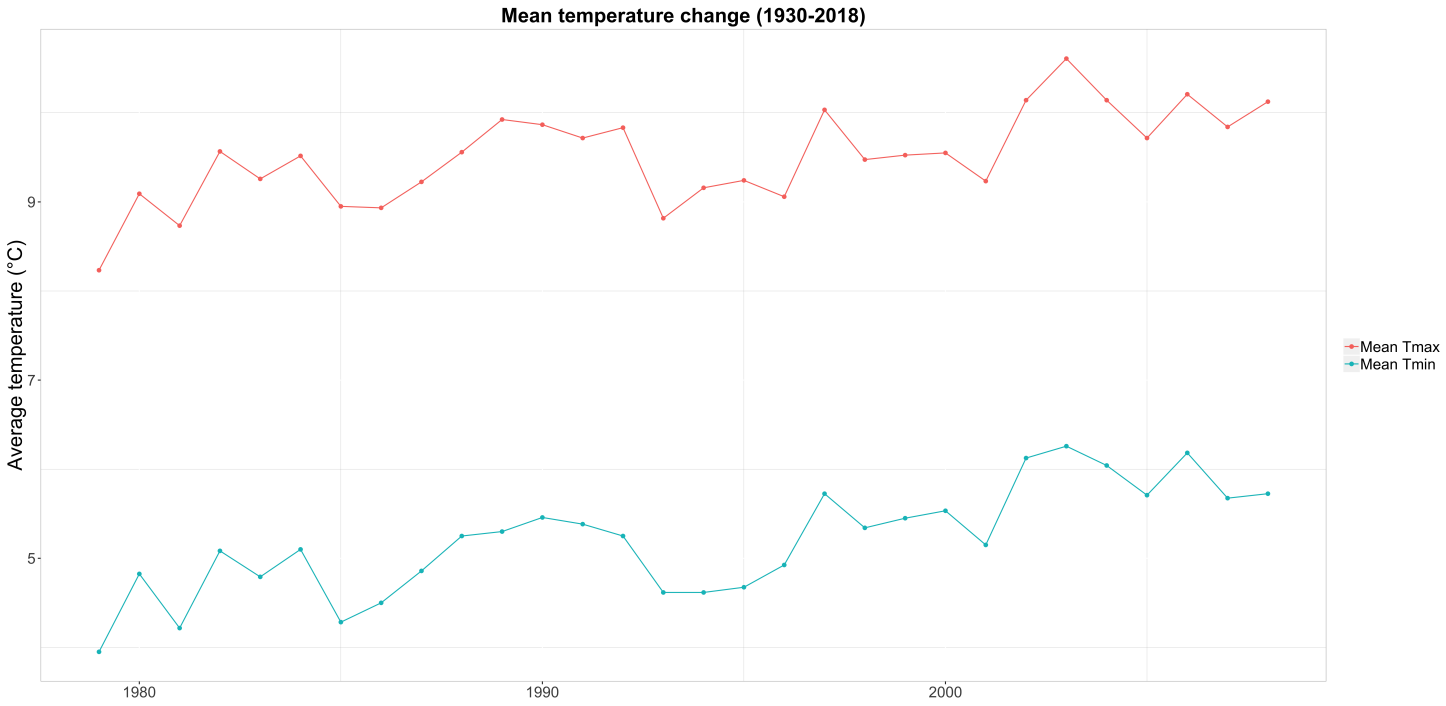

Figure 1: Additional images in Appendix B

7.3 Appendix C: code

```
knitr::include_graphics("img/uniedlogo.png")
library(knitr)  # for dynamic report generation
library(kableExtra) # to build complex HTML or 'LaTex' tables
library(tidyverse) # for data manipulation

puffins_t <- read.csv("./data/puffins_temp.csv")
                      # to open the file puffins_temp.csv

puffins_t <- puffins_t %>%
  rename("Year" = year, "Country list" = Country.list,
         "Population trend" = pop_trend, "ID" = id,
         "Mean max. T (°C)" = mean_tmax, "Mean min. T (°C)" = mean_tmin)
# A bit of data transformation! "New name" = Old.name
puffins_t %>%
  slice(1:10) %>%   # the table is going to
  #show only the first 10 lines (a sample of the data set)
  kable(digits = 2) %>% # each value has 2 decimal digits
  kable_styling(full_width = F,
# the width of the table is not fit to the width of the page
                position = "center", font_size = 10,
                latex_options = "hold_position")
# table settings with the kableExtra package

include_graphics("img/meant_plot.png")
```