Hovedtittel

Undertittel som utdyper hovedtittelen

Navn(ene) til forfatter(ene) her

Veileder: Navn

Masterutredning i økonomi og administrasjon

Hovedprofil: Business Analytics

NORGES HANDELSHØYSKOLE

Forord

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Norges Handelshøyskole

Bergen, juni 2023

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Sammendrag

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Nøkkelord – Mal, NHH, masteroppgave, LaTeX

Innhold

Figurliste

Tabelliste

1 Innledning

1.1 Dette er en overskrift

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1.1.1   Dette er en underoverskrift

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1.1.1.1 En enda lavere overskrift

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2 Bakgrunn

Jeg refererer til James mfl. (2013) som en av kildene mine. Dersom man bare skal nevne kilden uten å bruke den som subjekt eller objekt i setningen kan det være greit å sette hele referansen i parentes (James mfl., 2013).

3 Datasett

4   Metode

5 Analyse

6 Diskusjon

7 Konklusjon

Referanser

James, G., Witten, D., Hastie, T. & Tibshirani, R. (2013). *An introduction to statistical learning* (Bd. 112). Springer.

Norsk Elbilforening. (2018). *Informasjon om NOBIL* [Hentet 12. oktober 2018, fra: http://info.nobil.no/index.php/om].

Pearson, E. S. (1931). The test of significance for the correlation coefficient. *Journal of the American Statistical Association*, *26*(174), 128–134.

R Core Team. (2017). *R: A Language and Environment for Statistical Computing.* R Foundation for Statistical Computing. Vienna, Austria. https://www.R-project.org/

Øiestad, O., Årvik, P. & Øye, E. R. (2013). *Det var en gang* (Bd. 112). Springer.

Appendiks

A   Test

Figur A.1: NHH logo

B Tips and tricks to get you started

This is just a few notes to help you get started with your LaTeX project. The idea behind this template is to give you a good starting point from where you can build your thesis or report. LaTeX has many possibilities and you can do almost anything you like. First I recommend reading all three parts of this introduction if your are new to the program: https://www.overleaf.com/learn/latex/Free_online_introduction_to_LaTeX_(part_1)

B.1 Adding chapters or sections

To get a good overview of the document this template is divided into different sections/subfile where each section/subfile represents a chapter. This gives the possibility to compile a single section at a time and is a nice way to structure the document. If you want to add new sections just rightclick on the chapters folder and choose *New File*. In this file add to following code:

```
\documentclass[../Main.tex]{subfiles}
\begin{document}

% Write stuff here

\biblio
\end{document}
```

Also add the filepath of that new section to Main.tex. The sections will be ordered in the final pdf the way you order them in Main.tex. Here is one example where the section/subfile is named *NewSection.tex* and is in the *Chapters* folder:

```
\section{Name of section}
    \subfile{Chapters/NewSection}
```

B.2 Headings and subsections

Within each section one creates heading by using the command `\subsection{Heading here}`. The subsections you create will automatically be added to the table of contents. One can have different levels of headings using

`\subsubsection{}` or `\paragraph{}` . The different headings will be marked X.1 for subsections, X.1.1 for subsubsections and X1.1.1 for paragraphs, where X represents the chapters.

B.3   Figures, tables and equations

One of my favourite things in LaTeX is how it handles figures, tables and equations. Here are some examples of how to implement it in your document with code examples.

B.3.1   Figures

Figures and images are added using the the following environment:

```
\begin{figure}[H]
    \centering
    \caption{NHH-logo}
    \includegraphics[width=0.2\columnwidth]{Bilder/nhhlogo2.png}
    \label{fig:logo}
\end{figure}
```

The code above will produce Figure B.1. One can use many fileformats here including pdf, png, jpeg, jpg etc. The caption can be placed above or below the image and appear in the compiled pdf according to where you place it. The `\label{}` command has to come after the caption and is used for referencing the figure later in the document with the `\ref{}` command. The numbering of figures, tables and equations will change according to chapter. E.g. Figure 3.1, Table 2.4, Equation 6.2. All of them have separate counters so one can have Table 4.2 and Figure 4.2 in the same document.

Figur B.1: NHH logo

B.3.2   Tables

Tables can be designed any way you like. Tables are numbered the same way as figures and can also be referenced directly if you give them a label. There are several LaTeX table generators online, for example https://www.tablesgenerator.com/, which work very well. There is also a package in R called xtable which transforms R-tables to LaTeX tables/code. This can be very helpful and save a lot of time if you are working with R. The following code produces Table B.1.

```
\begin{table}[H]
\centering
\caption{Variables in datasett}
\begin{tabular}{rr}
  \hline
  \hline
 Variable name & Type of variable\\
  \hline
  Postal code & Categorical \\
  Date of birth & Date \\
  Municipality & Categorical \\
  Type of car & Categorical\\
  Registration date & Date \\
  Sex & Categorical\\
  Age &  Numerical \\
   \hline
   \hline
   \label{tab:Variables}
\end{tabular}
\end{table}
```

Tabell B.1: Variables in dataset

Variable name	Type of variable
Postal code	Categorical
Date of birth	Date
Municipality	Categorical
Type of car	Categorical
Registration date	Date
Sex	Categorical
Age	Numerical

B.3.3   Equations

Equations are something that could be a problem in many other programs which creates documents, e.g. Word. LaTeX is used by many researchers which writes a lot of equations because it's clean and easy for this purpose. There are code strings for Greek letters, special symbols, mathematical symbols etc. Equations are normally numbered. To create numbered equations one uses an equation environment, see below. The environment/code chunk displayed creates equation B.1. The numbering of equations also follow the chapters. One can also write inline equations in a paragraph using two dollar signs, $$, and writing inside the dollar signs. E.g. `$x+x=y$` will produce $x + x = y$.

```
\begin{equation} \label{equ:test}
        \hat{f}(x) = \sum^B_{b=1}\lambda \hat{f}^b(x)
\end{equation}
```

$$\hat{f}(x) = \sum_{b=1}^{B} \lambda \hat{f}^b(x) \tag{B.1}$$

B.3.4   Appendix

In the appendix the numbering is changed. Every subsection is number A1, A2, A3 etc. Figures, tables and equations are numbered according to their subsection, Figure A1.3, Table A3.5 etc.

B.4   References

Referencing in LaTeX can be done many different ways, with many different packages. In this template the package *biblatex* and the the *apa* style is used for referencing. Most referencing packages have a similar setup. In the Kildeliste.bib file you can find several examples of how to add a source to the document. After a sources has been added to the .bib file one can cite it in the text using several commands. I recommend the links https://www.overleaf.com/learn/latex/Biblatex_bibliography_styles and http://tug.ctan.org/info/biblatex-cheatsheet/biblatex-cheatsheet.pdf for more information on how to use biblatex. Another common package for referencing and citation is *natbib*.

Only sources that are cited within the text will appear in the reference list. One can use a command called *nocite* to list references that are not cited in text.

If you find your source on Google scholar you can get the code chunk needed to add the source to your LaTeX .bib file directly. This is done by clicking the citation button and choosing *BibTex* in Google scholar.

B.5   Some useful notes

Commenting in latex is done by adding a percentage sign in front of what you want to comment. Only that specific line will become a comment. If you want to write an actual percentage sign in your text you have to add a backslash before the percentage sign like this, \%. One also has to add a backslash in front of a dollar sign, like so \$, to produce a dollar sign. This because the symbol is used for inline equations.

One can quickly convert text to italic or bold by marking the wanted text and pressing ctrl+i (cmd+i for Mac) or ctrl+b (cmb+b).

All labels have to be unique for crossreferencing purposes. As mentioned earlier `\ref{labelName}` will produce produce the number of the figure/tabel/equation and the command `\pageref{labelName}` will produce the page where the figure/tabel/equation is located.

There are lots of sources online where you will find answers to most, if not all, of your question regarding LaTeX. Google is your friend!

Last, but not least, good luck with your thesis!