Chair of Digital Economics

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Paper on the topic

Formal Requirements for Writing a Thesis

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SUMMARY

This space is reserved for a summary.

TABLE OF CONTENTS

ABBREVIATIONS

APA   American Psychological Association

et al.   et alii

ff.   and the following pages

p.   page

pt.   point

FIGURES DIRECTORY

TABLES DIRECTORY

1. Formal Guidelines

The Structure

The thesis begins with a cover sheet. This is followed by the summary, the table of contents, if necessary a list of abbreviations, figures and tables, the text part, the bibliography, if necessary an appendix and finally a declaration of authorship stating the autonomous preparation of the document. The pages are numbered consecutively with Arabic numerals **starting from the beginning of the text part.** The indexes are numbered with Roman numerals. Please do not use page numbers for cover sheet and summary. The division of a document into different sections, which are numbered differently, is possible by using the function Layout/Breaks/Section Breaks.

You can write the thesis in German or English (Exception: If you are a MIEPP or QDEM student it is mandatory that your thesis is written in English). However, the thesis is expected to be correct.

Cover Sheet

The cover page should contain all essential information (see template). The design is up to you.

Table of Contents

As a rule, the breakdown of the chapters should not contain more than three levels. The table of contents and the declaration of authorship are not part of the table of contents.

Lists of Abbreviations, Symbols, Figures and Tables

A separate page has to be added for each directory.

Scope

A Bachelor's thesis (Master's thesis) should have a maximum length of 20 (40) pages (incl. illustrations and essential tables, excluding table of contents, directories, bibliography, appendix, and a list of tools and resources). If the thesis exceeds this limit (or is "artificially" extended to the required number of pages), we reserve the right to deduct the grade. Use blank lines between two chapters, between text and illustrations, tables and formulas. There should be no blank lines between two paragraphs or between a heading and text.

Font and Margins

Use **Times New Roman** with a **font size of 12 pt** and **1.5 line spacing.** For headings of the first level, the font size is 13 pt and bold.

3. Heading (bold, 13 pt)

3.1. Heading (bold, 12 pt)

3.1.1. Heading (bold, 12pt)

Use **justification and enable automatic hyphenation**. Please leave a **sufficient margin** (2.5 cm on each side) for corrections. You should also leave a sufficient margin at the top and bottom (2.5 cm each). Insert page numbers in Times New Roman in the middle of the footer. The page numbers begin on the first page of the text.

The first line of the header should contain the full name of the author; the second line should state the title of the thesis. Format: 12pt, left justified and only a bold font for the author. A line terminates the header (see e.g. this document).

Tables and Figures

Tables and figures should be included within the text if they are required for understanding the text and if the author refers to the figure or table in the text. Otherwise, tables, figures and mathematical explanations should be attached in the appendix. Tables and figures must be numbered consecutively and labeled left-aligned. The source of the figure shall be indicated in a footnote. The font for the label is Times New Roman in bold and the font size is 10 points. Refer to *Figure 1* or *Table 1* in italics. Using these references within the text, the words "figure" and "table" as well as in the corresponding directories should not be abbreviated.

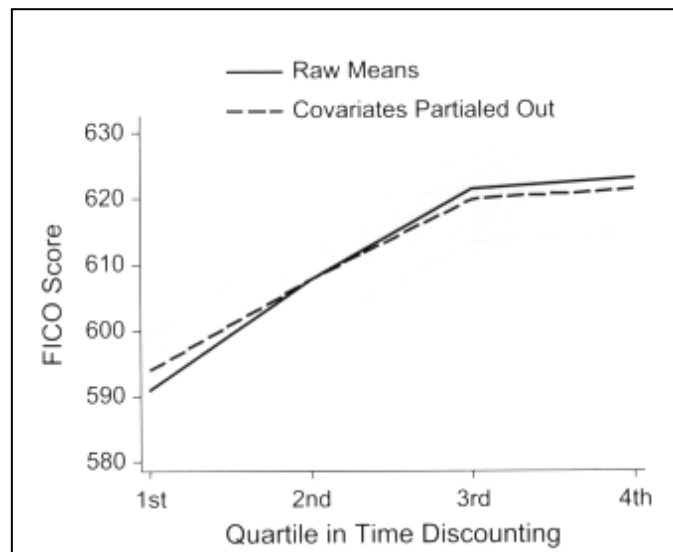| headline 1	headline 2
content 1	content 2

Table 1: Exemplary Table

Figure 1: Exemplary Figure[1]

Formulas

Formulas are put in separate lines and indented. If the text contains many formulas, a numbering is recommended. When presenting a theoretical model, the author should make it clear that she has understood the model, e.g. by giving verbal explanations on formal derivations. The font is Times New Roman (12 pt).

$$(1) \quad y_i = \beta_0 + \beta_1 + \gamma\, X_i + \delta Z_i + e_i.$$
$$(2) \quad y_i = \beta_0 + \beta_1 + \beta_2 + \gamma\, X_i + \delta Z_i + e_i.$$

Appendix

The appendix is not a mandatory part of the thesis. In general it can be omitted.

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[1] Figure derived from the study Meier & Sprenger (2012, p. 57)

2.   Information Regarding Content

Structure – text part

The introduction describes and motivates the research question of the thesis. In addition, the introduction explains the relevance of the question you are investigating. This is followed by a brief outline of the current state of research and a (brief) classification of the investigated topic within the literature. Please also briefly describe the (quoted!) literature you have used. Then a short overview of the remaining procedure of the thesis is given. At the end of the thesis, the key results are summarized concisely and acknowledged critically. In addition, it is possible to give an outlook on the further development of the scientific discourse and to point out open questions.

Summary

The thesis should be preceded by a summary (approx. one page), which contains five keywords on the most important facets at the end.

Paragraph formation

Avoid excessive paragraph formation and consider the rule "paragraph = presentation of a delimited aspect".

Chapter heading

Choose your chapter headings carefully. Reproduce the chapter content in a few concise words and not in whole sentences. Your headings should be precise, but always provide sufficient content. The headings of the individual sections should be formulated content related (NOT: main part).

Text positioning

If you start a new chapter (e.g. 2nd chapter), at least 5 lines should be on the same page, otherwise you can start a new page. This rule does not apply to subchapters.

3.   Obligation of Citation and Literature Research

Citations

All ideas, arguments, tables, graphs, and images derived from the works of other authors must be clearly identified. We use the APA citation style (https://www.mendeley.com/guides/apa-citation-guide/). The citation is integrated in the text, not listed in footnotes. If a reference is made to a specific publication, it is necessary to state the author and the year of publication in brackets. Example: Müller (2018) shows that... Or: Digitization biases competition against small companies (Müller and Meier, 2018). When citing a specific passage, argument, or result within a paper, you must also include the corresponding page number (Müller et al., 2023, p.5). If you wish to cite an idea that is itself cited in a paper, please refer to (and read) the primary or original source. Non-scientific Internet sources such as Wikipedia are not citable. When using data material, always refer to the data source. Literal quotations are indicated by quotation marks. They have to be cited letter by letter. Avoid too many literal citations. Literal quotations that exceed a length of three lines can also be distinguished from the main text by indenting them. Tables, images and figures which you did not create yourself and which are taken from publications of other authors must also be quoted with an indication of the page.

For three or more authors, the abbreviation et al. is used (Müller et al., 2018, p. 1ff.). Several sources are separated by a semicolon (Müller et al., 2018, p. 1 ff.; Mustermann, 2018, p. 2). The bibliography includes all **cited** sources.

Footnotes

Footnotes should be used carefully! Important thoughts should be stated in the text, unimportant ones should be omitted. Only those additions that interfere with the flow of the text should be included in a footnote. Generally, citations should be made in the text, not in the footnotes. Note: This rule may surprise some students because they seem used to citing in footnotes and find quoting in the text annoying. However, this is especially the case if you quote too much. So, it is certainly not appropriate to insert a source after every sentence. If you refer to an entire literature with many different sources, a footnote is of course required.

Bibliography

All mentioned sources in the thesis (and only these) have to be listed in the bibliography. The publications are arranged alphabetically according to the surnames of the authors (and in ascending order according to the year of publication for the same author). Depending on the type of source (e.g. journal article, essay from an anthology) there are different ways of citation. You

do not have to adhere exactly to the citation style suggested here. However, please choose a usual citation style and apply it consistently throughout the entire thesis. A widely used and recommended citation is the *APA style*. We use *the 6th Edition* in the examples below. You may, however, choose a different citation style as long as it contains all the necessary information and is consistent, like of a renowned journal (e.g. American Economic Review). The citation style must be the same for all cited sources. Sources from the Internet (e.g. speeches etc.) should only be used if a certain respectability and reliability is given. If the text is also available in printed form, please refer only to the printed source. Otherwise, enter the complete Internet address. In the following, examples of citation according to *APA Style, 6th Edition* are presented for different document types. However, please sort in your bibliography only alphabetically according to the surnames of the authors, not according to the document type! In contrast to the text part, all names of three or more authors must be indicated in the bibliography. The format of the individual entries follows 1.0 line spacing and one blank line between every source.

Monographs

Davis, E. P. (1995). *Debt, Financial Fragility, and Systemic Risk.* Oxford University Press, Oxford

Articles from anthologies

Dewatripont, M. & Tirole, J. (1993). Efficient governance structure: implications for banking regulation. In: Mayer, C. & Vives, X., (Ed.), Capital markets and financial intermediation, 12-33. Cambridge University Press, Cambridge.

Articles from academic journals

Kaminsky, G. L. & Reinhart, C. M. (1999). The Twin Crises: The Causes of Banking and Balance-of-Payments Problems. *American Economic Review, 89*(3), 473-500.

Essays from a series of working papers

Mishkin, F. S. (1994). *Preventing Financial Crises: An International Perspective*. (NBER Working Paper no. 4636.8).

Unpublished manuscripts

Girard, Y. & Hett, F. (2013). *Competitiveness in Dynamic Contests,* Unpublished manuscript, University of Mainz, Mainz.

Information from the internet

World Health Organization (2007). International Statistical Classification of Diseases (ICD). Requested on March 8, 2017: http://www.who.int/classifications/icd/en/.

Tips for research

For scientific research, good scientific sources should primarily be used. One example is academic journals. To assess whether a journal is rated as good or less good the following ranking can be used as an indicator: https://www.scimagojr.com/journalrank.php?category=2002.

4. Additional Information

List of assistive instruments and personally signed declaration of authorship

According to the examination regulations, the thesis must contain a list of the tools used and a personally signed declaration stating the autonomous preparation of the document. The exact wording of the declaration of authorship can be found below. Insert the declaration at the end of the paper (after the bibliography and appendix). Do not forget to sign the declaration (in all copies of the paper).

Please note that we may use professional software to check whether your work is a plagiarism. By "copying" larger passages from unquoted sources the student will fail the exanimation and followed by further legal consequences.

All media and tools are permitted. You may use any media (texts, videos, etc.) and tools (apps, calculators, etc.) for your assignments that you find useful. This also includes AI tools like ChatGPT, which can be helpful, for example, in generating ideas and drafting texts. These resources are available to you in our seminars just as they are now in everyday life and will be later in your career.

You are responsible for your work results. All tools have limitations. Information in media can be incorrect. Calculators may have computational limits. And AI language models like ChatGPT can formulate well but may make content-related errors and reproduce biases. Before working further with results and suggestions, you must review and, if necessary, revise them. The tool does not think for you; instead, you think with the aid of the tool. Ultimately, you are responsible for the results. You must be able to explain your results to others and are accountable for any mistakes (not the tool).

Indicate the tools used. You must list all media used in your work as sources. Likewise, you should list all tools used unless they are trivial, such as pens or word processing tools. Optionally, include how these tools were used (for example, by specifying the prompt for AI tools).

No rule without exception. If tools are not allowed in learning or examination situations, we will inform you.

Artificial Intelligence (AI) and Machine Learning Tools

- **Artificial Inteeligence Tools**
    - AI Frameworks used (e.g., TensorFlow, PyTorch)
    - Models And Algorithms
    - Parameter and Hyperparameter Settings
- **Large Language Models**
    - Example: ChatGPT
    - Application Cases and Tasks Used
    - Model Parameters and Versions
    - **Conversation Records**
        - Note: To ensure transparency and reproducibility in research, include any recorded

Please note that we may use professional software to check whether your work contains any plagiarism. Copying large sections from unquoted sources will result in a failure of the work and may lead to further legal consequences.

Declaration of Authorship

I hereby declare that the paper presented is my own work and that I have not used any sources other than those listed in the bibliography. In addition, I affirm to have clearly marked and acknowledged all quotations or references that have been taken from the works of others. I further declare that I have not submitted this thesis at any other institution in order to obtain a degree.

Submission

The Bachelor's and Master's thesis must be submitted as a digital version (PDF file) to the Office of Student Affairs. Please send an email with all files to our department.

The seminar paper must also be submitted as a digital version (PDF file). For this, please send an email with all files to the department.

Bibliography

Binswanger, J. & Schunk, D. (2009). *What is an adequate standard of living during retirement?,* Unpublished manuscript, Tilburg University, Tilburg.

Davis, E. P. (1995). *Debt, Financial Fragility, and Systemic Risk.* Oxford University Press, Oxford

Dewatripont, M. & Tirole, J. (1993). Efficient governance structure: implications for banking regulation. In: Mayer, C. & Vives, X., (Hrsg.), *Capital markets and financial intermediation,* 12- 33. Cambridge University Press, Cambridge.

Kaminsky, G. L. & Reinhart, C. M. (1999). The Twin Crises: The Causes of Banking and Balance-of-Payments Problems. *American Economic Review, 89*(3), 473-500.

Mishkin, F. S. (1994). *Preventing Financial Crises: An International Perspective*. (NBER Working Paper no. 4636.8).

Meier, S. & Sprenger, C.D. (2012). Time Discounting Predicts Creditworthiness. *Psychological Science, 23*(1), 56–58.

World Health Organization (2007). International Statistical Classification of Diseases (ICD). Requested on March 8, 2017: http://www.who.int/classifications/icd/en/.

List of Tools

Artificial Inttelligence (AI) and Machine Learning Tools

- **Artificial Intelligence Tools**
  - ChatGPT
  - Application and Tasks Used: Answering questions, text generation, conversation simulation
  - Model Parameters and Versions: GPT-3.5, model size: 175 billion parameters
  - **Conversation Records**
    - Note: to ensure transparency and reproducibility in research, include any recorded conversations with the large language model in the appendix

Appendix