# Chair for Sustainability Management

# TUM Campus Straubing (TUMCS)

## Guidelines

for writing theses and seminar papers at the Chair for Sustainability Management, TUMCS

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## 1. General Notes on Writing Scholarly Work

A thesis serves to demonstrate your familiarity with the techniques of academic writing. When writing a thesis, you should address a research gap or a research puzzle by using relevant theoretical approaches and appropriate (empirical) research methods. This also applies to writing a seminar paper at the Chair for Sustainability Management, TUMCS.

Your task is to identify critical research gaps or research puzzles in the broader field of sustainability management and formulate clear research questions. If you do not know what you want to find out, you won't be able to conduct effective research. Clear goals are thus paramount for writing successful scholarly work.

Study and familiarize yourself with the relevant literature, which will enable you to gain a deeper understanding of your topic and its current state of scientific research. This will also allow you to identify and assess the research gaps.

You should clearly plan and justify how to answer the formulated research questions. Doing so will enable you to outline the suitable techniques for data collection and analysis.

After you have gathered and analyzed the data, you present the results, draw implications for theory and practice, outline the study's limitations, suggest future research avenues, and offer concluding remarks.

The structure of your thesis **should follow the standard format of a scientific article** (see Chapter 6).

The regulations applying to both Bachelor's and Master's theses are defined in the **General Academic and Examination Regulations (APSO)** of TUM and the **Program-specific Academic and Examination Regulations (FPSO)** issued by your School or Department for your degree program. These regulations are independent of the internal guidelines provided by this Chair. We strongly recommend that you familiarize yourself with APSO and FPSO as early as possible and contact your school office or departmental student advising should you have any questions.
https://www.tum.de/en/studies/graduation/theses/formalities
Please also check the **Handout on theses and dissertations** available via the aforementioned link; the document defines the:

- General Legal Basis
- Questions Regarding the Supervision of Theses
- Questions Regarding Copyright and Protection of Inventions
- Information for Students/Doctoral Candidates

## 2. Additional Notes for Seminar Papers

Chapters 3 to 10 below apply equally to seminar papers, with the following exceptions:

- The lecturer will determine the appropriate word count and desired structure for the

seminar paper in advance. However, the general rule is to be precise, to the point, and to avoid lengthy, unclear sentences.
- The final word count (excluding References, Appendices, Table of Contents, as well as, if necessary, Table/List of Abbreviations) should be mentioned on the Title Page.
- For the layout of the seminar paper, a 2.5 cm margin all around is sufficient; for all other aspects, please refer to Chapter 3.
- Unless instructed otherwise by the lecturer, submission of the seminar paper in digital form (PDF) is sufficient.

### 2.1. Seminar Papers Developed within Groups

A group seminar paper is a collaborative effort. While individual research tasks may be divided among members, the group is collectively responsible for ensuring that all contributions—in writing and analysis—are of comparable quality and depth. The final submission must be a coherent, unified piece of work. Simply stitching together independently written sections is not acceptable.

For a group seminar paper, the following **Declaration of Authorship** must be completed and signed by all authors:

> "We hereby declare that we have independently developed and written the submitted seminar paper titled "…", and that no sources or means other than those explicitly cited in the text have been used. All ideas and quotations taken from external sources are clearly marked as such. Furthermore, this seminar paper has not been submitted, either in whole or in part, in the same or a substantially similar form for any other course or for academic grading/credit, and it has not been published elsewhere."

## 3. Thesis Layout

For **printed submissions** (especially when **binding is required**), use the following margins:

- Top and bottom margins: 2.5 cm
- Inner margin (binding side): 5 cm
- Outer margin: 2 cm

The inner margin ensures that no text is lost in the binding. When using double-sided (duplex) printing, set the margins as mirrored. In Word: *Layout > Margins > Mirrored*.

For **purely digital submissions** (PDF only), **margins of 2.5 cm** on all sides are acceptable, unless otherwise specified.

Use Arial, Times New Roman, or Calibri, 12-point font size, with 1.5 line spacing throughout the main text.

The Title Page does not have a page number; all other pages before the main text are numbered with Roman numerals, the main text and all other pages are numbered with Arabic numerals.

Each section of the thesis must be clearly preceded by the appropriate heading.

If any provisions of the applicable examination regulations (e.g., regarding scope, formatting, or submission requirements) differ from those stated here, those regulations take precedence. In such cases, please inform us in advance.

## 4. Language of the Thesis

The Bachelor's or Master's thesis should be written in English (TUM uses American English as a rule: https://www.tum.de/en/studies/graduation/theses/formalities).

## 5. Word Count

As a general rule, a Bachelor's thesis should not exceed 40 pages. A Master's thesis should not exceed 60 pages (excluding the Title Page, Table of Contents, Figures, Table/List of Abbreviations, References, and Appendices). Please note that the number of pages may vary depending on the type of work. For example, a systematic literature review might require more pages to present and analyze the reviewed studies. Still, when writing, focus on the key arguments and present them in a clear, logical order. You should be **short and precise** in your writing rather than long and unclear. Write what is important, not everything you have read or know.

## 6. Outline of the Scholarly Work

A Master's or Bachelor's thesis should follow the structure of a scientific article. It should contain the following:

- Title Page
- Table of Contents
- List of Tables, Figures, and Abbreviations
- Abstract
- Text Part (Introduction to Conclusion)
- References
- Appendices (Possibly)
- Declaration of Authorship

### 6.1. Title Page

The Title Page follows the Specifications of the Examination Office and should, among other things, contain:

- Technical University of Munich, TUM Campus Straubing, Chair for Sustainability Management, Prof. Dr. Stefan Gold
- Type of work (Bachelor's or Master's thesis)
- Study program
- Study term (e.g., Summer Term Year)
- Submitted by: First and last name
- Registration number

- E-Mail
- Submission date: day, month, year

Moreover, a **Confidentiality Notice** is required when:
If your thesis is subject to a confidentiality agreement with an external organization, you must provide a written statement from the organization (name, address) confirming the confidentiality agreement with you (name, first name) and specifying its duration (e.g., 6 months, 2 years, 10 years, indefinite). In this case, the **title page** of the thesis must display a visible stamp or imprint with "Restricted Access" or "Confidential".

### 6.2. Table of Contents

The Table of Contents should follow a hierarchical numerical structure (e.g., 1, 1.1, 1.1.1). Please ensure that each subdivision includes at least two sections—for example, if section 1.1 exists, a corresponding section 1.2 must also be present.
The Table of Contents must include the page number on which the treatment of each section begins.

### 6.3. List of Figures, Tables, and Abbreviations

In the List of Figures, each figure must be listed with its consecutive number (e.g., Figure 1, Figure 2, Figure 3) and a concise, descriptive title (e.g., **Figure 1: Constructs and definitions regarding Sustainable Supply Chain Management**). The List of Tables should also be structured accordingly.

Abbreviations should generally be explained upon first use in the text and listed in a separate List of Abbreviations with their full meanings (e.g., **SSCM – Sustainable Supply Chain Management**). Common abbreviations such as "e.g.," "i.e.," and "etc." do not need to be spelled out or included in the List.

### 6.4. Abstract

The Abstract should be approximately 1 page long. The style and format of the Abstract should follow the structured abstract format of journals published by Emerald:

- Purpose
- Design/methodology/approach
- Findings
- Research limitations/implications (if applicable)
- Practical implications (if applicable)
- Social implications (if applicable)
- Originality/value (mandatory)

### 6.5. Text Part

The Text Part is based on the standard structure of a scientific paper and should include:

- **Introduction**: The contextualization and relevance of the topic, as well as the presentation of the research questions under investigation.

- **Theoretical background**: The presentation of the necessary background information, the current scientific discourse, and the constructs and their interlinkages. All of which is important for grounding the research question.
- **Research method**: What research method did you employ to answer the research question? How did you collect and analyze the data? Mention the quality criteria (e.g., questions of validity and reliability) that your research follows to ensure trustworthy results and interpretations.
- **Results** (**Results** for a quantitative approach/**Findings** for a qualitative approach): What did you discover? The presentation of the results derived from the analysis should be presented in a clear and insightful manner.
- **Discussion**: Here, the major aspects of the results are discussed, i.e., the results are placed in the context of existing literature. You need to discuss the differences and similarities between the literature and your own results. What is revelatory about the results? Based on the results of your research, what theoretical and managerial implications can be offered?
- In the **Conclusion**, you provide clear answers to the research question.
- Limitations and future research suggestions should be addressed in the Discussion or Conclusion.

To make the structure easier to understand, note its inherent symmetry:

- In the **Introduction**, you explain and formulate your research question, which you will later answer.
- In the **Theoretical background**, you describe the current state of research. This also serves as the foundation for the **Discussion** of your own findings. Therefore, any sources you refer to in the Discussion should already be mentioned here.
- In the **Research method**, you explain how you approached the research question.
- In the **Results**, you present what you found using that approach.

### 6.6. References
See Chapter 7 for citation style.

### 6.7. Appendices
Long descriptions of statistical results (e.g., SPSS proofs) or qualitative findings (e.g., long interview quotations), supplementary figures, questionnaires, and other forms should be included in the Appendices if they would disrupt the clarity of the main text. In any case, the relevant appendices must be mentioned in the text. For qualitative work, more detailed materials, such as interview transcripts or coding files, should be provided in a separate, digital form. In addition, the raw data (e.g., audio recordings of interviews) should be stored in a digital, secure, and encrypted manner. TUM's data protection policy applies; please check the relevant rules.

### 6.8. Declaration of Authorship
At the end of the thesis, the following declaration must be included, signed, and dated:

English version:

> "I hereby declare that the thesis submitted is my own unaided work. All direct or indirect sources used are acknowledged as references.
>
> I am aware that the thesis in digital form can be examined for the use of unauthorized aid and to determine whether the thesis as a whole or parts incorporated into it may be deemed as plagiarism. For the comparison of my work with existing sources, I agree that it shall be entered in a database where it shall also remain after examination, to enable comparison with future theses submitted. Further rights of reproduction and usage, however, are not granted here.
>
> This thesis was not previously presented to another examination board and has not been published."

## 7. In-Text Citations

### 7.1. When to Cite?

Every idea, figure, table, or any other content that you take from another source must be cited. If a thought or argument spans more than just a few sentences, this should be clearly indicated through consistent referencing.

Rule of thumb: When in doubt, it is better to cite something once too often than once too few times!

### 7.2. What to Cite?

You must cite all sources you have used in your work. This includes not only books and journal articles, but also unpublished works, internal reports, or materials not available in the library/bookstore.

Important: Some sources are not suitable for academic writing and should not be used or cited. These include:

- Repetition of scripts or exam preparation materials
- Lecture notes or slides
- Student presentations, protocols, or summaries
- All external figures and tables must include a proper citation of the original source.
- Self-created figures or tables must be labeled accordingly. "Source: Own illustration."

### 7.3. How to Cite?

You should follow the citation guidelines of the American Psychological Association (APA), 7th edition.

The Publication Manual of the American Psychological Association is available in the university library and provides detailed rules and examples.

Additionally, APA offers a free online tutorial explaining the basics:

www.apastyle.org/learn/tutorials/basics-tutorial.aspx

### 7.4. Structure of the References list

Detailed instructions on how to structure your reference list are provided in the APA manual.

We highly recommend using reference management tools, such as Citavi.

For further information, support, and access to citation tools, please consult the TUM library website.

## 8. Literature Search

Existing academic sources are essential for academic work. The following search engines will help you find relevant sources. You can access most articles from home via the TUM internet network or via VPN.

- Web of Science: www.webofscience.com
- Google Scholar: www.googlescholar.com
- SCOPUS: www.scopus.com
- EBSCO: www.ebsco.com

Please note that the majority of your sources should consist of high-quality, peer-reviewed journal articles.

Journals vary in quality. A typical classification is as follows:

- World-class journals / top journals / A+ or A journals
- High-quality journals / (very) good journals / A or B journals
- Other academic journals / recognized journals / C journals
- Non-academic / practitioner journals

Indicators for this classification are:

- Is the journal peer-reviewed?
- What is the journal's ranking?
- What is its impact factor?
- Who is the publisher? (e.g., Elsevier, Wiley, Taylor & Francis, Emerald)

Journal rankings:

- Overview about journal quality: https://harzing.com/resources/journal-quality-list
- Often used in Germany: VHB-JOURQUAL3 www.vhbonline.org/services/vhb-rating-2024
- Other key rankings: ABS list (UK), Financial Times List (North America), ABDC List (Australia), etc.

## 9. Quality Criteria in Scientific Research

Your thesis must meet a number of academic content criteria. The most important are outlined below:

- The research problem must be formulated clearly enough to be understood by readers who are not familiar with the specific topic. Therefore, a detailed explanation and scientifically grounded definition of all key terms are essential.
- Technical terms and academic concepts must be properly introduced and defined. Everyday or colloquial expressions should only be used if they are explicitly and precisely defined within the text. Otherwise, they should be avoided.
- Every topic must be based on a clear research question. It is often helpful to start by formulating a guiding question that you will aim to answer within the scope of your thesis and in the given time frame. This research question will also help to narrow down and precisely define your thesis topic and guide your structure and argumentation throughout the work.
- Your thesis must present a well-structured, logical, and verifiable argument. The reasoning must be transparent and based on a critical and independent analysis of the topic, focusing on analytical rather than purely descriptive content.
- Every thesis should aim to make a meaningful contribution. This does not necessarily mean producing entirely new knowledge, but it should at least offer a new perspective, a critical reflection, or a different analytical angle on an existing topic.
- Simply reproducing existing knowledge is not sufficient.

## 10. Usage of Artificial Intelligence (AI)

AI technologies have been increasingly used in the generation of texts, images, and videos, which closely resemble human-created content. Therefore, it becomes paramount to uphold human responsibility in conducting scientific research. As a student, you must ensure that your work is **reproducible**, **transparent**, and **accountable**, regardless of the AI technologies used.

We recommend adhering to the **"Five Principles of Human Accountability and Responsibility"** outlined by Blau et al. (2024) www.tum.de/en/news-and-events/all-news/press-releases/details/guidelines-for-the-use-of-ai-in-science

These principles are summarized as follows:

1. **Transparent disclosure and attribution:** If you use AI in your research, you must disclose the specific technologies employed and justify their use, following scientific criteria. You must document in a detailed and thorough manner how you have used specific AI tools, for example, by indicating the sequence of prompts used in interacting with those tools. You must accurately attribute your and AI sources of information, distinguishing between the two and acknowledging their respective contributions. Additionally, you should ensure that prior literature is properly cited and critically evaluated. **AI usage is not a replacement** for your

ability to critically reflect on the investigated topic and write a seminar paper or thesis; that is your task!

2. **Verification of AI-generated content and analyses:** You are **fully responsible** for the accuracy of the data, imagery, and inferences that you draw from AI outputs. You must employ critical analysis along with the appropriate methods to validate the accuracy and reliability of inferences made by or with the assistance of AI. Additionally, you must disclose the evidence relevant to such inferences. Therefore, when using AI, it is essential to continually identify, correct, and eliminate any biases that may skew research outcomes and interpretations.
3. **Documentation of AI-generated data:** You should mark AI-generated or synthetic data, inferences, and imagery with provenance information about the role of AI in their generation, so that it is not mistaken for observations collected in the real world. You must not present AI-generated content as observations collected in the real world.
4. **A focus on ethics and equity:** You must use credible and ethical steps to ensure that AI usage does not interfere with the development of scientifically sound and socially responsible research. Always clearly distinguish between AI outputs and your own work, and respect privacy, consent, and intellectual property rights. Be aware of biases in AI outputs and actively work to mitigate them. Strive for fairness and inclusion by considering diverse perspectives and avoiding the reinforcement of existing inequalities. **AI must not be used to make academic decisions, such as developing claims and interpreting results.** These tasks are your full responsibility! You should be aware of the broader societal impacts of AI and use it in a manner that reflects a commitment to academic integrity and adherence to ethical standards.
5. **Continuous monitoring, oversight, and public engagement:** You should critically assess the potential and limitations of AI technologies and be transparent in their applications. Moreover, you should question the reliability and sources of AI-generated outputs at all times. You must avoid using AI technologies in ways that cause harmful and unethical outcomes. Your task is to write scholarly work that relies on accurate evidence and addresses real-world challenges. Open dialogue, collaboration, and engagement with your supervisor and other relevant stakeholders are key. Therefore, we encourage you to critically engage with the ongoing discussions about the responsible and ethical use of AI in research; for further guidance and resources, please see this dedicated TUM webpage on the topic of AI: www.tum.de/en/research/research-goals/digitalization-ai-and-quantum-technologies/artificial-intelligence

Moreover, please adhere to the following guidelines regarding the use of AI tools (e.g., ChatGPT, Google Gemini, Microsoft Copilot, Grammarly, DeepL) when writing seminar papers or theses submitted to the Chair for Sustainability Management, TUMCS.

**General Remarks on AI Tools Usage**

- **You are fully responsible** for the **originality**, **accuracy**, and **integrity** of your own work.

- You may use AI tools to support your work (please see permitted and prohibited uses below), but they **must never replace** your own research, reasoning, and writing.
- Any AI tool that you use must be transparently documented and justified.
- Follow all academic integrity policies outlined herein and by TUM.

**Permitted Use**
**Language support:** This includes grammar correction, spell checking, style improvement, and a translation of text you wrote yourself. In doing so, you **must thoroughly verify** all AI-generated suggestions. AI-generated or translated text must never be included verbatim without manual revision.

**Idea exploration or clarification:** This includes brainstorming research questions, understanding concepts at an abstract level (no copying and pasting the generated text), and generating examples for learning purposes (not verbatim in your work). In any case, you must understand, verify, and take responsibility for your own work.

**Coding support:** This includes coding completion, debugging, and error explanation. In any case, you remain fully responsible for the final solution. Importantly, you must review and understand the solution.

**Prohibited Use**
You are **not allowed** to use AI tools to:
- Write substantial parts of your scientific work, including sentences, paragraphs, sections, or the entire document.
- Paraphrase AI-generated inputs and sources rather than reading and critically examining them.
- Fabricate, invent, or manipulate data, proofs, experiments, citations, or any result based on AI.
- Obtain literature summaries without reading and understanding the original sources.
- Copy AI content into your work without a thorough examination, as it can contain errors or misleading information.
- Use AI tools without transparent, detailed disclosure.

**Reporting the Usage of AI Tools**
In a separate section of your work, **Declaration of AI usage**, and where appropriate (e.g., Research method section), you must:

**Specify the tool used and explain, based on scientific reasoning, how and why it was used. Additionally, you must detail how you ensure the accuracy of your work.**

**Example statement:**
"I used Grammarly to check grammar and improve the language of [*specify sentences, paragraphs, or the entire text*]. All suggestions were manually revised by me. No AI-

generated text was included verbatim in the submitted [*paper or thesis*]."

**Overall Best Practices**

- Have in mind that AI tools are not a replacement for your own work!
- Always double-check AI outputs and be aware of AI hallucinations and misleading content.
- Keep notes and document your workflow when appropriate (e.g., through screenshots).
- Always make sure that your academic contributions (interpretations, analyses, proofs, etc.) are your own and never copied from AI sources.
- If you are unsure about a specific use of AI, be in touch with your supervisor before proceeding.

**Consequences of Misuse**

Violating these guidelines or the academic integrity policies outlined by TUM may result in:

- Rejection of the submitted work (paper or thesis).
- A failing grade.
- Reporting to TUM's examination office for academic misconduct.

**Detecting Plagiarism and AI-Generated Text**

This procedure is based on the **TUM's Guidelines for Dealing with Plagiarism and for Use of Plagiarism Detection Software** (please read these guidelines carefully). To ensure compliance with TUM's standards of academic integrity, your submitted work (paper or thesis) may be checked using Turnitin (https://turnitin.tum.de/), which detects:

- Plagiarism or uncredited use of sources;
- AI-generated content that has not been transparently disclosed or is inconsistent with the declared AI tools usage.

Your work will be **anonymized** before being uploaded to Turnitin (e.g., by removing the title page and any sections containing your name, student number, or other identifying information).

By submitting your work, you consent to its anonymized upload and analysis by Turnitin.

Turnitin reports do not automatically indicate misconduct, yet may lead to further clarifications or an investigation if significant issues are found.