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tomorrow



GUIDELINE

FOR

SCIENTIFIC WRITING

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1. Preface

This guide provides basic information for scientific writing that relates to different types of texts you need to hand in during your studies (i.e., seminar papers, Bachelor or Master theses). To facilitate reading this guide, the term *paper* is used as synonym for these different types of texts for general rules that apply. Please check with your supervisor, if any additional or different requirements need to be considered.

Chapter 2 introduces basic citation rules. Papers mostly follow the same basic structure, which is outlined and described in more detail in chapter 3. There can be of course exceptions, as for example due to the seminar or the specific topic of the paper but in most cases, it is recommended to stick to the classic structure if applicable. Chapter 4 collects some general recommendations for writing to meet scientific standards as well as other information that will aid the writing process. Chapter 5 briefly draws your attention to additional formal requirements that must be met for your Bachelor or Master thesis. Overall, this guide aims at summarizing most important formal aspects that need to be considered when you write a paper during your studies, so it basically covers relevant technical aspects. Concrete tips regarding scientific writing are rather scarce – but therefore, a reading list is included at the end of this guide. In addition, we want to start with a very general recommendation.

When you write a paper, the typical first step is to start with a literature review to get an overview of the state of the art of your topic, which allows you to identify a gap of knowledge which you want to address. It is recommended to use SCOPUS, ScienceDirect or equivalent databases to search for scientific literature. Your research should always extend existing research – which is why a mere interest in a topic, or a practical relevance alone are not sufficient reasons for writing your paper. One important – and to some extent tricky issue – is to adequately narrow down your topic and to plan in a way which allows you to complete your paper in a rather tight time frame. You should be able to complete your bachelor or master thesis within one semester. Given the specific context, master theses could also take longer (app. 6-9 months).

Once you have chosen a topic, you elaborate it in more detail and write a first concept (or exposé). This concept or outline may change whilst you are working on it but is nevertheless recommended. If you can write such a concept, it is a good indicator that you already have enough knowledge to start; otherwise, it is most likely a sign that further reading is necessary before you are able to summarize precisely what you are planning to do. It is recommended to use a citation software from the very beginning (such as CITAVI or Mendeley), which allows you to collect relevant publications and aids the citation process.

Since we have already dropped the keyword “citation”, we start with this topic before we address any other aspect of academic writing. Why: because this is relevant from the very beginning to the final touch of your paper; and: it is usually something that annoys most of our students – so please read the information regarding this topic carefully, and make sure to quote correctly!

2. Citations

But: why? (again?) Why is it necessary to quote? There are many possible answers we could give you; but two important reasons should be sufficient.

The *first* reason is basically an ethical consideration. Always keep in mind that scholars have made an effort to write a book, chapter or paper – and did spend money, time and else to come up with their original thoughts or empirical results. You have therefore the luxury to not reinvent the wheel by yourselves but can build on previous knowledge. Therefore, the least you can do is to give credit to who deserves it – so this is (a very brief explanation) of one reason why you should always include the proper reference.

A *second* reason is traceability or reproducibility. Only by providing accurate references the reader will be enabled to trace back certain statements and assumptions. Furthermore, the references will allow to reproduce the presented work which is an essential feature of scientific work. Furthermore, referring to other people's work may often strengthen your own argumentation.

Other reasons are closely tied to the above-mentioned one, such as transparency, and – important for you as students – the strict rule to avoid plagiarism.

What? What do you need to quote?

Sometimes, students are not sure what to quote – whether ideas or general lines of thought need to be quoted as well, or if it is sufficient to quote only sentences you like and therefore add to your paper without making any changes. The answer is simple: Both applies – you need to include references for everything you lend from others. The only thing that differs is how to quote.

How? How do I quote correctly?

If you use some statement from others in your paper without making any changes, this is called direct quotation (or verbatim). Therefore, you put this statement between quotation marks (“ ”).

For indirect citations – where you lend a strand of thought from another author but phrase it differently – you need to include the same information but dispense quotation marks.

There are various **styles** that you can use. Choose one style consistently for all your citations in your paper.¹ Please note that it is common to include in-text citations instead of using footnotes for quotes. One recommended option are the guidelines of the American Psychological Association (APA), for which most important rules are briefly explained in the following paragraphs.

In case of a single-authored publication, include the last name of the author, the year of publication and the page number(s). If two authors have written a text, include both and use &, for more than two authors only include the first one and use et al., which indicates that other co-authors have contributed to the publication. This can be done either as parenthetical citation (usually at the end of a sentence) or narrative citation (if you include a citation as part of a sentence). A narrative, indirect quotation looks as follows: Kumar (2019) argues that (...). A parenthetical, indirect quotation looks like this: Case studies on smart grid have been carried out in India (Kumar, 2019). And finally, one example for a direct quotation (parenthetical): “They are incremental grids: Grids that develop one-step at a time, one problem at a time, one solution at a time.” (Kumar, 2019, p.166)

As there is a set of rules in place for citing different types of texts, please carefully study the APA-guidelines. Table 1 is not comprehensive but provides examples for commonly used types of texts: journal articles, books, edited books and chapters of edited books. Please note that for each publication the complete reference, as included in the list of references, is displayed in the second column. The third column contains examples for in-text citations.

Table 1: Citation: examples, based on APA

Type of publication	List of references	In-text citation (parenthetical)
Journal article	Kumar, A. (2019). Beyond technical smartness: Rethinking the development and implementation of sociotechnical smart grids in India. <i>Energy Research and Social Sciences</i> 49, 158-168. https://doi.org/10.1016/j.erss.2018.10.026	(Kumar, 2019)
	Diekmann, A. & Preisendörfer, P. (1998). Environmental Behavior – Discrepancies between Aspirations and Reality. <i>Rationality and Society</i> , 10(1), 79-102. https://doi.org/10.1177/104346398010001004	(Diekmann & Preisendörfer, 1998)

¹ For an overview & supporting information see: <https://www.scribbr.com/citing-sources/citation-styles/>
<https://pitt.libguides.com/citationhelp>

	Frick, J., Kaiser, F.G. & Wilson, M. (2004). Environmental knowledge and conservation behavior: exploring prevalence and structure in a representative sample. <i>Personality and Individual Differences</i> , 37(8), 1597-1613. https://doi.org/10.1016/j.paid.2004.02.015	(Frick et al., 2004)
Book	Gintis, H. (2009). <i>The Bounds of Reason. Game Theory and the Unification of the Behavioral Sciences</i> . Princeton and Oxford: Princeton University Press. ISBN: 978-0691140520	(Gintis, 2009)
Edited book	Moser, S.S. & Dilling, L. (Eds.). (2008). <i>Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change</i> . Cambridge University Press. ISBN: 978-0521049924	(Moser & Dilling, 2008)
Chapter in an edited book	Moser, S.C. (2007). More bad news: the risk of neglecting emotional responses to climate change information. In S.S. Moser & L. Dilling (Eds.), <i>Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change</i> (pp. 64-80). Cambridge University Press. https://doi.org/10.1017/CBO9780511535871.006	(Moser, 2007)

It is recommended to provide DOI, ISSN or ISBN codes with the references.

More examples can be found here: <https://apastyle.apa.org/style-grammar-guidelines/references/examples>

PLEASE be aware that the reference is always related to one specific sentence. It is NOT sufficient to provide a reference by the end of a paragraph. In contrast it is possible to provide a reference in the first sentence and thereafter refer to this source indirectly in the subsequent sentences.

Note: If you want to cite more than one publication to underline an argument, you can do so. In this case, sort the authors alphabetically and separate the quotations by a semicolon: (Diekmann & Preisendörfer, 1998; Moser & Dilling, 2008). For citing more than one publication of one author, sort by year of publication. If one author (or a team of authors) have published more than one paper in one year, add a letter (written in lower case, i.e. 2008a, 2008b).

Two additional requirements at our institute (i.e., the ESS):

- 1) You will find guidelines which state that it is not necessary to include a page reference when you write an English paper. Regardless of the type of quotation (direct or indirect): for in-text citations, please include the pages you are referring to if you quote books, comprehensive studies or reports. Example: Moser & Dilling, 2007, p.8.

2) Make sure to include enough quotations, and to place them on the right spot. If you elaborate an argument in one paragraph, it is not enough to include one final citation at the very end of this paragraph. In this form it is not clear to readers (or the plagiarism-software) who has spoken till the last sentence. One option would be to include a citation at the very beginning of the respective paragraph as narrative quote. Example: Moser and Dilling (2007, p.8) argue, the problem is (...).

3. Content & Structure

In most cases the general structure of your thesis should follow the following logic:

- Cover page
- Table of contents (list of figures / list of tables; list of abbreviations – if applicable)
- 1. Introduction
- 2. “State of the art”
- 3. Methods
- 4. Results
- 5. Discussion
- 6. Conclusion
- References
- (Appendix, if applicable)

Chapters listed with bullet points are the formal coat of your paper. The numbered chapters are those you fill with content, they are – together – the core of your paper. Chapters 3.1 to 3.10 comprise most important information for each of these chapters.

3.1 Cover page

The cover page of your paper must meet formal requirements and must therefore include specific information:

- title (and subtitle)
- type of text (e.g., Bachelor thesis)
- name of the university and institute
- author information (i.e., your name, student registration number)
- name of supervisor(s)
- location & year of submission

It is urgently recommended to use the template for your bachelor or master thesis² also for seminar papers (if not other stated in the seminar), which can be downloaded here:

<https://urbi.uni-graz.at/de/studieren/organisatorisches/formulare-geographie-umweltsystemwissenschaften-und-internationale-studien/>

Please note that the title page is not numbered!

² Additional formal requirements for Bachelor and Master thesis are collected in chapter 5.

Some recommendations for choosing a title:

- Make sure to choose a clear and meaningful title, which is overall not too long.
- Typically, you choose a (rather general) title and a subtitle, which includes more detailed information (e.g., on the methods used).
- Avoid using acronyms in your (sub)title.
- Definitely avoid company names in your title.

3.2 Table of contents (list of figures, tables, and abbreviations)

The table of contents comprises all chapters and subchapters, which are numbered consecutively. Make sure to limit the numbers of subchapters to a maximum of three (e.g.: 1.2.3). As for the overall title of your paper, acronyms should be avoided for your headings as well. As an example, you can have a look at the table of contents of this guide.

It can be useful to draft the table of contents before you start to write your paper as this can aid to structure your research process. Moreover, it is recommended to closely study your table of contents once you have written your paper – to evaluate the overall structure once again (i.e., to check if the overall storyline is clear, if all the individual chapters make sense, if the individuals chapters appear to be too detailed or not detailed enough).

If tables or figures are included in the text, a separate list of figures and/or tables must be included after the table of contents. The format is similar to the table of contents', whereby the tables or figures – which are numbered consecutively – are listed, referring to the page on which the respective table or figure can be found.

It is recommended to compile the table of contents (as well as the list of figures and tables) automatically. Therefore, you can use the style sheets in Word to define the headings and select an appropriate layout.

A list of abbreviations must also be included if numerous abbreviations are used in the text. This includes only abbreviations that are used to shorten technical terms (such as Photovoltaic – PV). Abbreviations which are commonly known should not be included in the list of abbreviations. To clarify what these commonly known abbreviations could be, some examples are collected in Table 2.

Table 2: Examples: known abbreviations

Abbreviation	Meaning
c.f.	compare
Ed.	Editor
ed.	edition
Eds.	Editors
e.g.	example given
Et al.	Et alii/aliae [and others]
f. / ff.	following page(s)
i.e.	this is
p. / pp.	Page / pages
Vol.	Volume

3.3 Introduction

This chapter aims at introducing the topic of your paper to the reader and at justifying the relevance of the topic. Assume that you are writing for a scientific audience.

A gap of knowledge needs to be identified which is addressed by your research – and your research question is formulated accordingly. Note that you start with the introduction by a rather broad description of the topic, and finally arrive at a manageable narrow research objective with the precisely formulated research question.

The methods used are also mentioned in the introduction. However: a detailed description and justification of the choice of methods follows in the methods section of the paper (see chapter 3.5). The introduction ends with an outlook on the main chapters of the paper.

Typically, the introduction comprises one or two pages (depending on the type of text you write).

To summarize, the introduction should comprise the following aspects in this order:

- Introduction to topic, justification of the relevance of the topic
- Research objective and precise formulation of the research question
- Outlook to the following chapters (including the methods used)

3.4 „State of the art “(sometimes also referred as Theory or Literature Background)

This chapter provides a solid basis for the elaboration of your argument. Basically, this is a sound description of the theoretical or conceptual foundation of your paper. Typically, the description of the state of the art – a summary of results of previous studies, concepts used or else – is presented to substantiate the gap of research and your research objective described in the introduction.

The elaboration of this chapter heavily depends on the topic and the nature of your paper: a conceptual work will therefore include different aspects than an empirical one. This “state of the art” can therefore be structured following its content and can include a set of subchapters. Relevant terms (which have not already been introduced) are described and defined.

Please note that “state of the art” is in quotation marks. This indicates that you should choose a meaningful header for this chapter.

To decide whether and how detailed concepts, theories or results of previous studies should be described, it helps to ask whether the respective information is necessary to answer the research question, to justify the methods used, the results or conclusions. It is recommended to find a balance between not omitting essential information and being too detailed. Make sure that the results, concepts, and theories presented make a substantive contribution to your argument.

3.5 Methods (and Materials)

It is necessary to describe the methodological approach of the work and the methods used as precisely as possible (be careful: methodology and methods used are two different things!). The method selection must be justified. Although the elaboration depends on the methods used, the general rule is that information provided should enable readers to apply the methods you used themselves, to evaluate the results, and to arrive at the same results. (Therefore, details and extensive information, such as survey instruments, should be part of the appendix, see chapter 3.10).

Some examples:

- *Literature review*: Include a detailed description which clarifies what literature was included for which purpose, and how the corpus of literature was selected (e.g., search strings/words, type of publications included, data bases used, time horizon, etc.).
- *Empirical study (primary data collection)*: Regardless of whether the study is qualitative (e.g., interviews, focus groups) or quantitative (e.g., questionnaire, experiments), the

survey instrument must be described in detail. It must be clear if you have chosen an inductive or deductive approach; how relevant concepts have been operationalized; what the population of interest is; what kind of sample you use (referring to the sampling strategy and sample size); it is common practice to include the survey instrument (e.g., questionnaire, guidelines for qualitative interviews) in the Appendix.

3.6 Results

In this chapter, the results relevant to answering your research question are presented. Start with a presentation of the results in a factual and neutral manner. Therefore, present, describe and explain your results – without evaluating the content or referring to previous studies at this point.

If necessary, structure your results chapter and include subchapters to aid readers to understand all parts of this chapter. Include relevant tables and figures, if necessary (see chapter 3.2).

Some notes:

- If you have formulated hypotheses, structure your research chapter accordingly.
- If you include tables and/or figures: do not assume that your tables/figures are self-explanatory, but make sure to include a comprehensive description in the text. Your readers should be able to understand your main results solely based on the text. If this is not the case, information provided in the text is not sufficient and should be adapted.
- If you include tables and/or figures be careful about the number of figures and tables, you include. Make sure to only include relevant tables and figures, and do not use them too excessively.

3.7 Discussion

The discussion should address the following aspects:

- Reference of the results to the research question and/or hypotheses.
- Interpretation of the results considering results of previous studies and/or presented literature (correct citation!)
- Critical reflection on methods used and results obtained (scope, advantages, disadvantages, any problems that may have occurred, limitations)

3.8 Conclusions

Summary and conclusions are typically included in this final chapter. Therefore, important information regarding methods used, results and the discussion are summarized. No new issues are raised or discussed, which is why no new sources are included in this chapter (i.e., no citations). The conclusion should be concise and supplemented by an outlook and suggestions for further research.

Advice: Writing conclusions is often difficult. Sometimes it helps to keep the following questions in mind: In what ways are results of this work influential to research and practice? What new research should be conducted and how?

3.9 References

Each paper contains a list of references. Make sure that you have included all references that are mentioned in the paper in the list of references – and that you have not included any references in this list that are not mentioned in the paper. There are some software options that make your life easier, such as CITAVI or Mendeley. Make sure to use an adequate layout (i.e., single-line spacing, left-justified).

The list of references must be sorted alphabetically (based on the surname of the first author). If you have cited multiple publications of one author, please use the following sorting criteria: start with single authored publications, and then consider the year of publication.

3.10 Appendix

If there is any additional information that is important but cannot be included directly in the text (e.g., because it is too detailed, such as the questionnaire used for a survey study, the guidelines used for qualitative interviews, additional statistical analyses), you should add an appendix.

If your appendix material is extensive it is recommended to include more than one appendix (e.g., in the following form: Appendix A, Appendix B) or to include subchapters. In general, your appendix should have a meaningful heading (e.g., Appendix 1: Survey instruments).

Never include any confidential material in the appendix of your master thesis, since the master thesis will be published, i.e., made accessible for the general public. If you include transcript of your interviews, check with your supervisor if there are any reasons against doing so; and make sure to anonymize the transcript.

4. Formal aspects: General recommendations

4.1 Format

Choose a standard font, such as Times New Roman or Arial (12pt), with 1.5 line spacing and justification. For headings, a larger font can be chosen (max. 20pt). The main chapters of your paper should start at the top of a new page and can be further divided. Be sure to use a maximum number of three subchapters. All main chapters and subchapters are numbered consecutively – starting with the introduction. Also, make sure that the respective heading is not separated from the following text by a page break and that a paragraph including text always follows your header (i.e., two headings should not directly follow each other).

Page numbering from the table of contents to the last page before the introduction is numbered with Roman numbers (I, II, ...). Arabic numbers are used starting from the introduction (1, 2, ...).

Footnotes are used for supplementary information that is not necessary for understanding the text itself. Footnotes are formatted smaller and written with single line spacing. Excessive use of footnotes should be avoided, as the essential information should be part of the text.

4.2 Language & Style

The language used in scientific texts differs from everyday language. Formulate the content concisely, objectively, and clearly. The following notes serve as orientation:

- Use short sentences. Words that do not serve the understanding of the text are omitted.
- Technical terms can be used without further explanation if their understanding can be presupposed. If this is not the case, or if these terms are ambiguous, provide a clear definition.
- Abbreviations used which are not part of the common knowledge must be introduced when the term is first mentioned in the paper and explained in a list of abbreviations. Example: Theory of Planned Behavior (TPB)
- Use of precise and unambiguous statements. Avoid colloquial phrases.
- Avoid personal pronouns („I“-perspective).
- For the presentation of currently valid factual statements, the present tense is used.
- Be careful with terms indicating a judgement or valuation (e.g. important, high, very, special, interesting, ...) and reconsider if those are necessary or avoidable.

Make sure that the overall argumentation is factual. All assertions made must be substantiated. Allusions, jokes or even emotional argumentation must be avoided.

4.3 Gender-sensitive language

In particular in case you are writing in German language: Gender-sensitive language is required. Please do not state in the introduction that the masculine form always refers to both genders – but use another option.

For recommendations and examples see:

- <https://akgl.uni-graz.at/de/fuer-mitarbeiterinnen/sprachliche-gleichbehandlung/>
- https://static.uni-graz.at/fileadmin/Akgl/4_Fuer_MitarbeiterInnen/UNESCO_Guidelines_on_gender_neutral_language.pdf

4.4 Tables and figures

Tables and figures can be included if necessary and must be labelled accordingly. You can either use your own tables/figures, or those of other authors. If you include tables or figures of other authors, the source must be indicated. If you modify a table of another author, include a respective note (e.g., „based on... “). Likewise, it is recommended to include a clarification indicating that the figure displayed is your own (e.g., own representation).

Each table/figure must be clearly referred to. Therefore, avoid phrases such as „as displayed in the table below “. Use clear cross-references instead, such as:

- Figure 3 gives an overview on...
- As displayed in table 7, ...

All tables and figures must be numbered consecutively and included in the list of tables / figures (see chapter 3.2).

For **tables**, it is recommended to use the same font type as for the main text (but with a smaller font size). The table caption [mandatory!] must be inserted above the table. Make sure that the relevant content is presented in a precise and clear way. If necessary, you can also include a table description below the table. However, based on the table caption, the content and the table description, readers should be able to understand what this table aims to inform about. Therefore, place some thoughts to the proper layout of the table: How much information can be displayed to not overwhelm the reader? How can information be combined in one table to make the table useful? Is it helpful to include grey shadings, bold fonts, additional/less lines?

For **figures**, the caption is typically included below the figure. With respect to the layout: make sure that your figures look good (on the screen and printed), i.e., that the resolution is well enough.

5. Information for bachelor and master theses

All the above-mentioned aspects apply for a bachelor or master thesis as well. Several additional formal requirements need to be met.

Please be aware that you do not need to include a statutory declaration in your master thesis (as it was done for a long time). Now, this declaration is included in the form which you use to submit your master thesis at the URBI dean's office.

After the table of contents (or the list of figures/tables, if present), an abstract must be included. An abstract is basically a very summary of the paper that follows. Therefore, you start with a brief description of the research problem and clear definition of the research objective. Subsequently, a description of the methods used is provided, followed by the core result and most important conclusions.

Helpful links:

- Detailed information regarding the procedure for Master and Bachelor theses are collected here: https://static.uni-graz.at/fileadmin/urbi-institute/Systemwissenschaften/Verschiedenes/Info-Pack_MasterThesis_SD-USW_May2019.pdf
- Regarding the research proposal for Master and Bachelor thesis, see: https://static.uni-graz.at/fileadmin/urbi-institute/Systemwissenschaften/Verschiedenes/Research_Proposal_for_Master_Thesis_USW_SD_052019.pdf
- Instructions for submitting your theses can be found at the following link (in German): https://static.uni-graz.at/fileadmin/kath/Formulare/Diplom-_und_Masterstudien/Anleitung_fuer_das_Einreichen_der_Abschlussarbeit_in_UGO.pdf
- ÖNorm: Recommendation for the form of your theses (in German): https://static.uni-graz.at/fileadmin/urbi/Formulare/11_%C3%96Norm.pdf

6. References

Diekmann, A. & Preisendörfer, P. (1998). Environmental Behavior – Discrepancies between Aspirations and Reality. *Rationality and Society*, 10(1), 79-102.

<https://doi.org/10.1177/104346398010001004>

Kumar, A. (2019). Beyond technical smartness: Rethinking the development and implementation of sociotechnical smart grids in India. *Energy Research and Social Sciences* 49, 158-168. <https://doi.org/10.1016/j.erss.2018.10.026>

Frick, J., Kaiser, F.G. & Wilson, M. (2004). Environmental knowledge and conservation behavior: exploring prevalence and structure in a representative sample. *Personality and Individual Differences*, 37(8), 1597-1613. <https://doi.org/10.1016/j.paid.2004.02.015>

Gintis, H. (2009). *The Bounds of Reason. Game Theory and the Unification of the Behavioral Sciences*. Princeton and Oxford: Princeton University Press. ISBN: 978-0691140520

Moser, S.S. & Dilling, L. (Eds.). (2008). *Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change*. Cambridge University Press. ISBN: 978-0521049924

Moser, S.C. (2007). More bad news: the risk of neglecting emotional responses to climate change information. In S.S. Moser & L. Dilling (Eds.), *Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change* (pp. 64-80). Cambridge University Press. <https://doi.org/10.1017/CBO9780511535871.006>

7. Recommended reading

ENGLISH

Aswani, S., Smith, E., & Vaccaro, I. (Eds.). (2010). *Environmental Social Sciences: Methods and Research Design*. Cambridge, England: Cambridge University Press. Retrieved from Alexander Street database.

Berg, B. L. (2001). *Qualitative research methods for the social sciences* (4th ed.). Boston: Allyn & Bacon. Available at: <https://sisis.rz.htw-berlin.de/inh2012/12424693.pdf>

Cheek, J. (2004). At the margins? Discourse analysis and qualitative research. *Qualitative Health Research*, 14, 1140–1150. Available at: <https://doi.org/10.1177/1049732304266820>

Field, A. (2016). *Writing Up Research*. Available at: <http://www.discoveringstatistics.com/docs/writinglabreports.pdf>

Yin, R. (2009). *Case study research : Design and methods* (4.th ed., Applied social research methods series).

GERMAN

Brauner, Detlef Jürgen; Vollmer, Hans-Ulrich (2008): *Erfolgreiches wissenschaftliches Arbeiten: Seminararbeit, Bachelor-/Masterarbeit (Diplomarbeit), Doktorarbeit*. 3. überarbeitete und erweiterte Auflage. Sternfeld: Verlag Wissenschaft & Praxis. (verfügbar UB)

Brunner, Hans; Knitel, Dietmar; Mader, Robert; Reisinger, Paul Josef (2015): *Leitfaden zur Bachelor- und Masterarbeit: Einführung in wissenschaftliches Arbeiten und berufsfeldbezogenes Forschen an Hochschulen und Universitäten*. 3. überarbeitete und erweiterte Auflage. Marburg: Tectum. (verfügbar UB)

Heesen, Bernd (2014): *Wissenschaftliches Arbeiten: Methodenwissen für das Bachelor-, Master- und Promotionsstudium*. 3. Auflage. Berlin, Heidelberg: Springer-Verlag. (UB online-Zugriff frei)

Oehrich, Marcus (2019): *Wissenschaftliches Arbeiten und Schreiben: Schritt für Schritt zur Bachelor- und Master-Thesis in den Wirtschaftswissenschaften*. 2. Auflage. Berlin, Heidelberg: Springer-Verlag. (UB online-Zugriff frei).

Voss, Rödiger (2010): *Wissenschaftliches Arbeiten*. Stuttgart: Lucius & Lucius. (verfügbar UB)

8. Resources

The University of Graz provides various resources that can be useful for your paper writing. These include useful tools and services (such as possibilities for further education or useful material). A couple of links is provided below, this list will be updated.

Useful tool:

- unikat (literature search - for resources available at the University of Graz): <https://unikat.uni-graz.at/primo-explore/search?vid=UGR>
- Scopus - literature search in international scientific journals (use a computer at the campus or with a VPN to the university): www.scopus.com
- Software portal: <https://software.uni-graz.at/katalog/>
 - This includes for example Citavi, MAXQDA and Mathematica.
- Mendeley software (reference manager): <https://www.mendeley.com/download-desktop-new/>
- Virtual Software (AMOS, SPSS, Matlab): <https://it.uni-graz.at/de/services/software/virtuelle-software/>
- Lime Survey (for online surveys): <https://it.uni-graz.at/de/services/online-umfragen/>

Useful services:

- Method Competence Center (Methodenkompetenzzentrum): workshops, advice, and online resources: (<https://grazer-methodenkompetenzzentrum.uni-graz.at/de/workshops/>)
- Writing Center (Schreibzentrum, German only): <https://schreibzentrum.uni-graz.at/de/angebote-fuer-lehrende/angebote-fuer-lehrende-digitale-inputs-des-schreibzentrums/>
- Introductory workshops for unikat, CITAVI or literature search (data bases) (German only): <https://ub.uni-graz.at/de/services/kursangebote-der-ub/>
- Environmental Systems Sciences on Facebook: <https://www.facebook.com/umweltsystemwissenschaften>
- Treffpunkt Sprachen: English Academic Writing: <https://treffpunktsprachen.uni-graz.at/de/treffpunkt-sprachen/>
- Schreiben mit Chribs: <https://schreibenmitchribs.at/>