



Scientific Work

Information on Setting up Scientific Projects

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1. Basic information before starting a scientific project
2. How to proceed with scientific work
3. Literature review
4. Layout of scientific projects
5. Scope of project work and theses
6. Structure and content of a scientific project
7. Notes on citation
8. Useful tips on scientific work
9. Template: Statutory Declaration
10. Recommended literature on scientific work

1. Basics before starting

Preliminary considerations

- What is the project about?
- What is already known? (Reference to literature)
- How is the analysis/investigation conducted?
- What are the results?
- How can the results be evaluated?
- What further research problems might arise from these results?

First steps

- Create a timetable
 - Plan with a sufficient buffer
 - Adjust timetable if necessary
 - Allow sufficient time at a stretch
 - Plan to complete at least two days before the deadline
 - Avoid last-minute stress!
- Get an overview of the topic
 - Everything is allowed (including reading sources that are not citable)
 - Google can be a good starting point
- Intensive study of the given literature
 - Work intensively through it several times (!)
 - First delimitation of the research question and the main focus

The majority of work

- Literature review (with notes and evaluations)
 - See chapter 3 Literature review and quality of sources
 - Take notes and sort them thematically
 - Make brief notes even on sources that are not usable
- Evaluation and analysis of literature
 - Critical evaluation of the literature for usability and thematic affiliation
 - Keep the main focus of the work in mind!
- Further define the boundaries, concretise the main focus
 - Choose a guiding question (research question)
- Write the main part of the project
 - Follow the central theme!
 - Keep an eye on the overall context!
 - Keep in mind who the addressees of the project are
 - Do not neglect the clarity and structure of the project
 - Check the outline and adapt it if necessary

Finalization

- Write introduction and conclusion
 - Introduction to the topic / motivation / summary
- Corrections
 - Shortening
 - Proofreading (content, spelling, grammar)
 - Checking the references
 - Checking the outline structure
 - Layout

3. Literature review

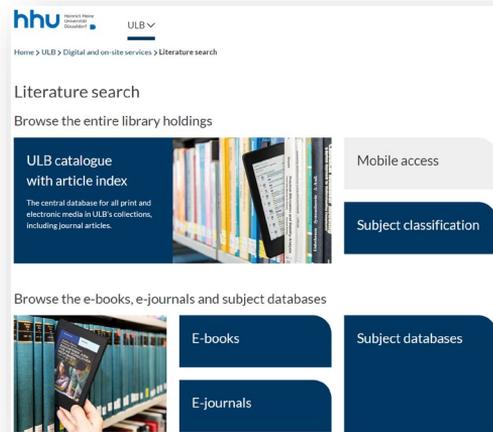
Basics

- Types of literature
 - Periodicals (journals, yearbooks, newspapers)
 - Books (monographs, collected works)
 - Official publications, internet sites, ...
- Research procedure
 - Start early, carry it out consistently and quickly
 - Procedure
 - Systematic search
 - Snowball system [literature search as a dynamic process]
 - Mixed forms
 - Collection of all information (e.g. paper, Word, Excel, Endnote, Citavi)

3. Literature review

Sources of literature

- Library catalogues
 - Chair Library
 - University and State Library
 - Search portal and catalogues
 - Databases
 - Electronic journal databases (e.g. Econlit, Wiso-net, Econis)
- Google Scholar
 - Perfect for scientific publications



Quality and adequacy of sources

- Questions on the adequacy of the literature
 - Quantitative: Are the scope and selection of sources sufficient?
 - Qualitative: How should the quality of the available literature be assessed?
- Evaluation of the literature
 - Correct, careful, fair, unfiltered, but also critical!
 - Citation worthy and citable
 - Scientific journals (consider ranking and impact factor!)
 - Scientific monographs and dissertations
 - Articles in anthologies
 - Textbooks
 - Limited citation worthy and citable
 - Internet sources
 - Newspaper and magazine articles
 - Not citation worthy and citable
 - Wikipedia etc.
 - Term papers etc.

Basic layout

- DIN A4, written on one side
- Margins
 - Right margin: 3.5 cm, left, top and bottom margins: 2.5 cm
- Body text and lists
 - Font size: 12 pt, font type: Times New Roman
 - Line spacing: 1.5, justified with hyphenation
- Footnotes
 - Font size: 10 pt, font type: Times New Roman
 - Line spacing: 1.0, consecutive numbering
- Page numbers
 - Title page: no numbering
 - Table of contents and following lists: consecutive Roman numbering
 - Text part: consecutive Arabic numbering
 - References and p.r.n. appendix: consecutive Arabic numbering

5. Scope

Project work

■ Bachelor

- BW19 (group work): approx. 20 pages

■ Master

- Entrepreneurship lab (group work): approx. 30 pages
- Empirical project work (group work): approx. 25 pages

Theses

■ Bachelor theses

- The textual length of the bachelor thesis should not be less than 25 pages and not more than 40 pages. (PO2020, §18, Par. 4)

■ Master theses

- The text of the master thesis should not be less than 40 pages and not more than 70 pages. (PO2020, §18, Par. 4)

6. Structure and content

Basic structure

1. Cover sheet
2. Table of contents
3. Other lists (figures, tables, abbreviations, symbols)
4. Text part
5. References
6. Appendix

6. Structure and content

1. Cover sheet

- The cover sheet should contain the following information:
 - Topic/title of the thesis
 - Name of the course/thesis
 - Full name of the chairholder
 - Full name of the supervisor
 - Full name of the chair and the university
 - Full name, address and matriculation number of the author
 - Date of submission
- No page number!
- The cover sheet may contain a logo of the HHU

6. Structure and content

2. Table of contents

- Not too many bullet points!
- At least two sub-headings each (if there is 2.1, there must also be at least 2.2)
- Use similar but not identical wording (e.g. use articles either always or never)
- Use meaningful headings (without abbreviations!)
- Headings should reflect the content of the respective text section. Avoid using whole sentences as headings
- Do not use generic headings, such as "Chapter 2 - Definitions". Exceptions are the chapters "Introduction" and "Conclusion"
- Indicate page numbers and correct them again before submission

3. Other lists before the text part

- List of figures and tables
 - Indication of name and page number
 - Abbreviation Tab./Fig., references have to be presented directly under the relevant figure/table, preceded by “Source“
- List of abbreviations / list of symbols
 - Abbreviations used (those not listed in the Oxford dictionary)
 - Sparing use of (common) abbreviations

4. Text part

- General outline structure - Part I
 - Introduction
 - Motivation, introduction to the topic
 - Formulate problem and research question in a targeted manner!
 - Description of the approach
 - Introduction should be inviting and arouse curiosity

4. Text part

■ General outline structure - Part II

■ Definitional basics

- Basic clarification of terms based on definitions

■ Methodology

- Empirical and theoretical (!) projects should address and describe the methodology on which the project is based:
 - *Theoretical projects*: In the case of theoretical "literature papers", one's own approach to a literature search must be documented and described. Thus, it should be named and described which keywords were searched for, which website was used for the research, how many sources were found based on the keyword search and how many of them were included in the analysis (guideline: three to five sources per page).
 - *Empirical projects*: For empirical work, the data set used, the variables included, and the type of analysis must be described. In addition to the description in the text section, both the data (e.g. in form of an Excel spreadsheet) and relevant documents for the data analysis (e.g. an R script) must be submitted with the work so that the results of the project can be reproduced.
- The description of the methodology is an essential part of a scientific project!

4. Text part

- General outline structure - Part III
 - Main part of the work
 - Extensive analysis/elaboration of the topic
 - Do not forget focus and research question!
 - End
 - Summary of the most important results
 - Conclusion
 - Address the problem stated in the introduction (important!)
 - Implications for real-life problems
 - Indications of research gaps / outlook

4. Text part

- Additional hints for the text part
 - Personal references (I or we) should generally be avoided
 - Clear and simple sentences instead of nested sentences (!)
 - When formulating, pay attention to clarity and accuracy of the statement
 - Formulas
 - Usually centred in separate lines
 - Number the formulas (if there are many), but keep the number to a minimum
 - Footnotes
 - If possible, avoid footnotes (for content, not for sources!)
 - Important thoughts should be in the text, unimportant ones should be omitted
 - Additions that disrupt the text flow can be included as footnotes
 - Unify formal design

6. Structure and content

5. References: General information

- All sources mentioned in the text must be listed!
- Only sources that are mentioned in the text may be listed!
- The original source (not a secondary source used) must be used for the project and must be read by the author!
- Uniformity of procedure also applies to the references!
- The sources used are listed in the references in alphabetical order by author name.
- If several publications are cited by one author/editor, they are arranged chronologically according to the year. The oldest publication comes first, followed by later publications.
- References also have the character of a sentence and must be ended with a dot.

5. References: Structure of bibliographical references

■ Monographs/Books

- [Last name, First letter of the first name.] [(Year)]. [*Title - italic*] [(Ed.) (if >1)]. [Place of publication]: [Publisher].
- Examples: Achleitner, A.-K., Pöllath, R., & Stahl, E. (Eds.) (2007). *Finanzierung von Sozialunternehmern – Konzepte zur finanziellen Unterstützung von Social Entrepreneurs*. Stuttgart: Schäffer-Poeschel Verlag.

Grichnik, D., Brettel, M., Koropp, C., & Mauer, R. (2010). *Entrepreneurship – Unternehmerisches Denken, Entscheiden und Handeln in innovativen und technologieorientierten Unternehmungen*. Stuttgart: Schäffer-Poeschel Verlag.

Talmor, E., & Vasvari F. (2012). *International Private Equity*. Chichester: John Wiley & Sons.

■ Contribution/essay in collective work

- [Last name, First letter of the first name.] [(Year)]. [Title of contribution]. In [First letter first name. surname] (Ed.), [*title of collective work*] [(Ed., (if >1), page numbers of contribution (from-to))]. [Place of publication]: [Publisher].
- Example: Schuh, G., & Bender, D. (2012). Grundlagen des Innovationsmanagements. In G. Schuh (Eds.), *Innovationsmanagement* (2. Ed., pp. 1-16). Heidelberg: Springer Verlag.

5. References: Structure of bibliographical references

■ Journal article

- [Last name, First letter of the first name.] [(Year)]. [Title of article]. [Journal], [No. of the year(Vol.)], [Page numbers (from-to)].
- Example: Cumming, D. (2008). Contracts and Exits in Venture Capital. *The Review of Financial Studies*, 21(5), 1947-1982.

■ Internet sources

- [Last name, First letter of the first name or editor (ed.).] [(Year)]. [Title]. Available at [http://\[Internet address\]](http://[Internet address]) [[Date last accessed]].
- Example: Federal Statistical Office of Germany (Eds.). (2015). Forschung und Entwicklung. Retrieved from <https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/ForschungEntwicklung/ForschungEntwicklung.html> [20.01.2015].

■ Missing information

- Missing information must be marked in the reference list!
- Missing author's name: "n.a."
- Missing place: "n.p."
- Missing year: "n.d."

6. Appendix

- Not a mandatory component of a scientific project (!)
- For tables and figures that are not referred to extensively in the text or for very extensive material
- The appendix is preceded by a list of appendices (after the reference list)
- Designate individual components of the appendix separately (Appendix 1, Appendix 2...)

General notes

- Labelling of thoughts taken from works of other authors.
- Foreign ideas must (!) be marked: All statements that do not originate from the author of the work must be supported by references!
- Tips for avoiding accusations of plagiarism
 - Use your own formulations!
 - No direct translations from English into German!
 - Avoid direct quotations! Only if the exact wording is important, the literature passage should be reproduced verbatim, but with appropriate labelling.

Type of citation

- Direct quotation (verbatim)
 - Use only for passages of central importance!
 - Marking with inverted commas "[quote]" and exact reference in the footnote.
 - Verbatim transfer including punctuation.
 - Spelling errors in the original source must be taken over and marked with [sic]. The term [sic] indicates that the preceding passage has been cited correctly and has not been changed from the original.
- Indirect quotation (analogous)
 - Own formulations with foreign ideas.
 - References to indirect quotations are introduced in the footnote with the prefix "Cf."

Rules for citation in footnotes

■ General information

- It is important to quote consistently (!)
- Each citation must be numbered with a superscript number
- These consecutive numbers have to be included in the footnotes with the author's surname, the year of publication and the page numbers of the references
- Footnotes have the character of a sentence and must therefore end with a dot. If the last character of a footnote is an abbreviation point (e.g. for f.), no additional punctuation point is added
- Users of bibliographic programmes can download the Academy of Management Journal Output Style from the Internet
- The footnotes should be written in the APA style, like the references (no information in the body text, as it is usually the case with this style)

■ General structure of the footnote

- [Cf.] [surname author(s) or editor(s) [(year of publication)], [page (if available)].
- Example: ¹⁹⁷Cf. Schneider (2020), p. 154.

Rules for citation in footnotes

■ Special cases

- In the case of several publications by the same author in the same year, the year of publication is supplemented by the addition of a lower-case letter in alphabetical order.
 - Example: ¹⁹⁷Cf. Talmor (2014a), p. 542.
- From 3 authors: cite all the first time, then note only the first author and add the reference et al. (et al. = and others).
 - Example: ¹⁹⁸Cf. Baschek, Bredenkamp, Öhrle, & Wippich (2001), p. 118.
afterwards: ¹⁹⁹Cf. Baschek et al. (2001), p. 120.
- For references over two or more pages, an f. is added after the page number (following) or a ff. if there are at least three pages.
 - Example: ²⁰⁰Cf. Talmor & Vasvari (2012), pp. 154 ff.
- If there are several references to the same content, they are given one after the other in historical order, separated by a semicolon.
 - Example: ²⁰¹Cf. Düring & Weber (2000), p. 8.; Wellisch (2004), pp. 31 f.
- Direct quotations are given without cf.
 - Example: ¹⁹⁷Talmor (2014), p. 18.

8. Useful tips on scientific work

Tips for the text part

- Convincing motivation: "Many people have already dealt with X". is not a good reason why a question is interesting
- Do not make unsubstantiated claims, especially platitudes and blanket statements!
- Organize and categorize results
- Do not include text that is not relevant to your problem. Check the role of each chapter in relation to the research question.

8. Useful tips on scientific work

Tips on revision and formal criteria

- Plan for a sufficient number of revision rounds
- Don't be afraid to change your outline or literature selection again
- Put your writing aside overnight, you will be much more critical the next day
- If you find yourself in a writing slump: proofread the existing chapters, format your document, etc.
- Separate the fulfilment of formal criteria from the work on the content: otherwise it is tempting to worry mainly about formal criteria instead of pushing the work forward in terms of content
- Fulfilment of the formal criteria is an important part of the work

8. Useful tips on scientific work

Writer's block?

- Set yourself a concrete (small) workload.
- Make a plan that you can stick to. A plan that you are afraid of will drive you into alternative activities.
- Do not claim to have the "perfect" wording. Improve your style and expression successively.
- Do not constantly have doubts. Trick: "You may write in peace, then your critic may have a go."
- Relax! No one can perform well under extreme time pressure and chaos in the head.

8. Useful tips on scientific work

Avoiding common mistakes or pitfalls

- Avoid explanations that are too detailed or too short (consider the reader's level of knowledge)
- Use clear and comprehensible wording (no nested sentences)
- Use clear sections, recognisable structure
- Use meaningful headings
- Symmetrical outline, uniform designation (e. g. do not use once "Selected Examples" and once "Some Examples" in the outline)
- Use consistent footnotes and citations

9. Template: Statutory Declaration

I hereby affirm that I have written this **bachelor/master thesis** independently and have not used any sources or aids other than those indicated. Furthermore, I affirm that all statements (and graphical representations) that have been taken from other sources literally and/or in spirit have been identified and that the work has not been part of another examination in the same or a similar version.

Place, date

Signature

10. Recommended literature on scientific work

Kollmann, T., Kuckertz, A., & Stöckmann, C. (2016). *Das 1x1 des Wissenschaftlichen Arbeitens – Von der Idee bis zur Abgabe* (2. Ed.). Wiesbaden: Springer Gabler Verlag.

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