

Recommendations for Writing Papers and Theses at the Faculty of Business and Economics at the Schmalkalden University of Applied Sciences

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I. Introduction

The following recommendations are intended as a rough guide and do not claim to be exhaustive. More detailed information can be found in the "Research Methodology" section of the compulsory "Soft Skills" course taught in our Bachelor programs. In addition, you should follow the specific instructions given by your paper or thesis supervisor.

II. Function and Quality Criteria of Scientific Papers and Theses

The purpose of writing a scientific paper or thesis is to demonstrate that the student is able to work scientifically on a given topic within a limited time and space. This requires the use of recognised scientific methods and the review, evaluation and analysis of relevant scientific literature.

A high quality paper or thesis is characterised by adherence to certain quality criteria. In particular, the ethics of science requires that the following standards be met:

- 1) *Objectivity*: Scientific work should be factual, neutral, unbiased, and independent of personal preferences and political or economic agendas. Objectivity should be reflected in a clear and neutral language that is free of emotion.
- 2) *Honesty*: There is an obligation to cite the sources used (see IX. below). In empirical studies, data must not be manipulated.
- 3) *Fairness to Participants*: In empirical research projects, participants must be treated fairly. This means that they are informed about the goals of the project, that their data are protected and that their dignity is protected.
- 4) *Testability*: It must be possible to test the truth of scientific statements. Statements that cannot be tested are unscientific; the principle of testability thus represents the criterion for distinguishing science from non-science.
- 5) *Reliability*: In empirical studies, the measurement instruments must be reliable. This means that the results obtained must be stable, i.e. the same results must be obtained when the test is repeated under constant conditions.

- 6) *Validity*: In empirical studies, validity refers to both the appropriateness of the methodological approach and to the results with respect to the research question under investigation. A measurement is valid if it actually measures what it is supposed to measure and if the conclusions drawn from the results are justified and meaningful.
- 7) *Comprehensibility*: Academic papers should be understandable. In the case of a seminar paper or a bachelor thesis, the addressee should be a reader educated in business and economics (e.g. a student at the end of his or her studies). The postulate of comprehensibility refers to both the formal structure, the content structure, a clear layout and an unambiguous and clear language.
- 8) *Relevance*: Scientific papers and theses should deal with a relevant topic. This means that they should either address a current and/or unsolved or controversial scientific problem or help solve a practical problem.
- 9) *Logical argumentation*: According to the classical definition of the philosopher Plato, knowledge is justified true belief. Accordingly, scientific statements must be justified, following the rules of logic (e.g. statements must be consistent).

III. Topic

The topic of a thesis is chosen in consultation with the supervisor. According to the examination regulations, the candidate may express a preference for a topic. It is therefore possible to suggest a topic to the supervisor. However, it is also possible to ask the supervisor if he/she would like to specify a topic or to work on a topic provided by a company where the candidate has completed his/her internship.

Great care should be taken in selecting a topic. Guiding questions should include:

- Does the topic match my interests and skills?
- Is the topic related to my main areas of work and the career I want to pursue?
- Is the topic a current one or does it contribute to solving an open problem?
- How is the literature situation? Are there enough sources and will I not drown in an unmanageable flood of sources?

A basic problem is whether to choose a general or a specific topic. Since a broad topic runs the risk of getting lost and being accused of superficiality, it is more advisable to choose a

narrowly defined topic that can be treated in depth. In the case of a broader topic, there is also the possibility of concretising it on the basis of an area of application ("...., illustrated by the example of...").

If you want to propose a topic to your supervisor you should do a literature search in your field of interest, looking especially for current problems in the latest issues of relevant journals. In addition, you can draw on your own knowledge, interests and experience, e.g. from an internship, or get suggestions from experts (e.g. from company representatives or at conferences).

Careful attention should be paid to the exact wording of the topic, as it will appear prominently on the certificate. As a rule of thumb, the shorter and more concise the title, the better. An alternative is to combine a short and concise title with a specific subtitle.

Once the thesis has been officially registered, the topic may not be changed under any circumstances. If you find that the topic needs to be modified or narrowed down, it may be legitimate to limit yourself to certain aspects or to set focal points. However, this should be pointed out in the thesis (preferably in the introduction), and the supervisor should be convinced of the usefulness and purpose of the limitations. Conversely, the paper or thesis should deal exclusively with the topic. Any explanations that go beyond the topic are superfluous and should be avoided. One must also assume certain basics that are not specifically or briefly addressed. It is not possible to start with "Adam and Eve". In general, only the actual problems of the paper or thesis should be dealt with in depth, while general information related to the topic should be dealt with briefly at best.

Of crucial importance to the paper/thesis is its coherent structure. To this end, the following questions must be answered at the beginning of the project:

- What is the problem of my research?
- What are my research questions?
- What are my objectives?
- Why is it necessary and interesting to study the topic?
- What is my research design?
- Which research methods will I use?
- If applicable: What are my hypotheses?

Based on these questions, an exposé of the paper/thesis and the introduction can be structured in a meaningful way as follows:

- 1) Problem statement: state what your research is about
- 2) Motivation to study the problem: state why it is worthwhile to study it (objective, not subjective reasons!)
- 3) Research questions to be addressed
- 4) Research objectives: say what the goals of the project are
- 5) Research methods to be used (including why your methods are appropriate)
- 6) If applicable, development of hypotheses
- 7) If applicable, research status = literature review
- 8) Brief presentation of the main points of the outline

In terms of the research objectives and research questions, it should always be clear which ones are being pursued in detail. The following basic types can be distinguished:

- 1) Description: What is the case?
- 2) Explanation: Why is something the way it is (cause-effect relationship)?
- 3) Forecast: How will something be the case in the future?
- 4) Understanding: How can something be interpreted (e.g. reasons for a certain behaviour)?
- 5) Design: Which measures are appropriate to achieve a goal?
- 6) Evaluation: How should a given state (measure, policy, etc.) be evaluated? How should people act?

In general, a paper and a thesis will combine several of the above objectives and questions. However, one should always be aware of which category is involved in any particular case.

IV. Length

It is not possible to give specific information about the length of a paper and a thesis without additional information about the topic. As a rough guideline, about 20 pages can be considered as appropriate for a seminar paper, about 40 pages for a bachelor thesis and about 60 – 70 pages for a master thesis (not including preliminary lists and appendices). The "text volume page" can be imagined as about 2300 characters (about 35 lines of about 60 to 70 characters). This idea is based on a page that is written on 1 1/2 lines.

Limiting the length, defining the topic and setting priorities are part of any scientific work and an important criterion for evaluation. It is a misconception to believe that longer papers and theses are the better ones. In fact, the opposite is true: longer papers and theses often contain redundancies. During the final editing process, you should therefore try to shorten your work ("to improve is to shorten").

V. Formal Layout

According to the examination regulations, Bachelor's and Master's theses must be submitted in one bound copy. The type of binding does not matter. It must also be submitted in a suitable electronic form (Word document or PDF file on CD-ROM or by e-mail). For seminar papers, a loose-leaf binder is sufficient. After consultation with the supervisor, the seminar paper can also be submitted electronically as a PDF file.

The following guidelines apply to the layout of word processing documents:

- Set the font size to 11-point or 12-point.
- Set the line spacing to 1 1/2-lines.
- Sheets should be single-sided.
- The format should be DIN A 4. Headings should be highlighted.
- Margins are set as follows: top 3 cm, left 2.5 cm, right 2.5 cm, bottom 3 cm.
- Page numbers must be indicated.
- A standard font should be used throughout (e.g. Arial, Calibri, Times New Roman).
- There should be a blank line between paragraphs (it is possible to start a new line, but this must be consistent).
- The first line of a paragraph should not be the last line on a page, and the last line of a paragraph should not be the first line on a page.
- A heading is preceded by two blank lines.
- Main headings (= beginnings of new chapters) start on a new page.

A template for a bachelor/master thesis can be found on the university website under University -> Faculties -> Faculty of Business and Economics -> Service.

VI. Linguistic Presentation

Academic writing is characterised by the following elements:

1) Formal

- Avoid common colloquialisms (e.g. do not use "stuff", "really", "a bit").
- Do not use contractions ("isn't", "didn't").
- Do not use etc. to stand for et cetera. It is better to say "for example".

2) Objective

- Write in a neutral, impersonal style.
- Avoid emotional adjectives ("amazing", "incredible", "unbelievable").
- Use "I" with care. To avoid „I“, you can use the passive voice or an impersonal subject.

Example: Instead of "In this thesis, I investigate...", you can write "This thesis is an investigation of" or "This thesis investigates".

3) Cautious

- This means not being too black and white.
- Beware of words like 'must', and 'definite(ly)'.
• Avoid absolute statements and exaggerated accuracy ("Our results provide 100 % proof of the theory").
- Words like 'possibly', 'probably', 'likely', 'seems', 'may' and 'could' are common in good academic writing.

4) Succinct

- This means not being wordy.
- Instead, be as precise and concise as possible.

Some further recommendations for a good academic writing style:

1) Use the passive voice sparingly.

Example: Instead of saying „The improved versions are presented in section x.“, you could say “Section x presents the improved versions.”

2) Minimise the use of split infinitives.

Example: Instead of "to quickly run", write "to run quickly".

3) Avoid starting sentences with "and"; instead write "in addition", "additionally", "further", "moreover".

4) Avoid starting sentences with "but"; instead write "however", "in contrast".

5) Avoid starting sentences with "because"; instead, combine the sentence with the previous one so that the word "because" appears in the second half of the sentence.

6) Avoid starting sentences with "so"; instead use "accordingly", "therefore", "thus".

7) Avoid ending sentences with prepositions such as "too", "though", "yet".

8) Avoid „to get“; write „to receive“, „to obtain“ instead.

9) Write positive sentences instead of negative ones.

Example: Instead of "No changes were observed in any of the variables tested", write "All variables tested remained constant".

10) Use gender-neutral language

- Avoid using the pronoun "he" or "she" by using the plural : "they".

Example: Instead of "A representative must listen to his supporters", write "Representatives must listen to their supporters".

- Use both the feminine and masculine pronouns.

Example: "Every professor should send his or her assistant to the conference."

- Use gender-neutral expressions whenever possible:

*Examples: "humanity" or "humankind" instead of "mankind"
 "chairperson" instead of "chairman"
 "business people" instead of "businessmen"*

Recommended literature:

- Skern, Tim, *Writing Scientific English: A Workbook*, 3rd edition 2019
- Wallwork, Adrian, *English for Writing Research Papers*, 2nd edition 2016

VII. General Structure

A seminar paper and a thesis begin with a title page, which is not numbered (see Appendices 1 and 2 for templates).

A thesis ends with a declaration (see Appendix 3 for a template). In the case of seminar papers, this is only required at the specific request of the supervisor. The statement that a thesis has been written autonomously means that its content is solely the author's. All thoughts and formulations that do not originate from the author must be identified as such (see IX. below for more details). However, it is permissible for another person to proofread the work.

A paper and a thesis should be structured between the title page and the declaration as follows:

- 1 Title page (template for a seminar paper in Appendix 1, template for a bachelor/master thesis in Appendix 2)
- 2 Table of contents
- 3 List of abbreviations (if applicable)
- 4 List of symbols (if applicable)
- 5 List of figures and tables (if applicable)
- 6 Content chapters
- 7 Appendices (if applicable)
- 8 List of references
- 9 Declaration (template in Appendix 3)

Seminar papers and theses do not normally contain a foreword. If, exceptionally, it is necessary because an acknowledgement seems appropriate, it should be inserted before the table of contents.

The table of contents shows the structure of the document with the corresponding page references.

The list of abbreviations may include only technical abbreviations or all abbreviations. A list of abbreviations may be omitted if only a limited number of abbreviations are used, which must be explained the first time they are used.

Additional lists may be included if they facilitate the reader's orientation (e.g. a list of appendices, if there are numerous appendices).

The list pages are numbered in Roman numerals together with the table of contents. The content chapters are numbered consecutively with Arabic numerals up to the last page (starting with page 1).

Whether it makes sense to include an appendix must be considered on a case-by-case basis. However, the basic rule is that what is important should be included in the text and what is not important should not appear in the paper at all. Under no circumstances should the appendix be seen as a continuation of the paper or thesis; it should only contain things that are not necessary for understanding the explanations in the text. For example, the appendix should include materials that are not accessible to the reader such as letters, interview transcripts, unpublished company documents, questionnaires, and the statistical data collected. It is also recommended that graphs, tables, etc. that take up one or more pages be included in the appendix; otherwise, they should be cited in direct relation to the text for ease of reading.

Each appendix must be directly related to at least one passage in the text, i.e. the appendix must be referred to at least once in the text. If there are several appendices, each one must be individually identified (Appendix I, II, ...) and have its own heading, which must also be included in the table of contents. If there are more than three appendices, a list of the appendices should be included; either on the first page of the appendix or included in the preliminary lists.

VIII. Structure of the Content Chapters

The content of every paper and thesis must be outlined. The outline should enable the reader to follow the author's train of thought. It also helps the author to structure his or her thoughts. Developing the final outline is a dynamic process. The outline does not need to be finalised to start writing; it is sufficient to have a rough outline. This will be refined and changed as necessary during the writing process. As a rule, the final outline is not finalised until the paper is written.

A paper and a thesis consists of three basic parts: the introduction, the main part (body), and the conclusion. The introduction and conclusion are usually not further subdivided.

There are two basic outline schemes: the principle of alphanumeric order and the principle of numeric order:

Alphanumerical Order	Numerical Order
A. Introduction	1 Introduction
B. Chapter 1	2 Chapter 1
I.	2.1
1.	2.1.1
a.	2.1.1.1
b.	2.1.1.2
....	...
2.	2.1.2
...
II.	2.2
...
C. Chapter 2	3 Chapter 2
...	...

Both forms can be left-aligned (line principle) or - as in the diagram above – indented on the right (gradation principle).

There is no general rule as to how an outline should be structured in detail. In any case, the following points should be observed:

- Principle of symmetry: Equal levels of outline - with the exception of the introduction and conclusion - are roughly equivalent in terms of content and scope. Main headings should have equal levels of subheadings, if possible, and each level of outline should have about the same number of points.
- The structure should not be too deep. Two or three levels are usually quite sufficient for a seminar paper and a bachelor thesis.
- Each heading must have at least two subheadings or none at all. This means that where there is, for example, 2.1, there must also be 2.2.
- An outline point usually consists of at least two paragraphs. A paragraph usually consists of more than one sentence. Conversely, an outline item should not be too long and, if possible, should not extend over several pages.

- Headings should be as concise and to the point as possible. They should not be formulated as complete sentences, but should be substantiated.
- The overall topic of the paper or thesis should not be the title of a chapter, as chapters should be subdivisions of the topic. Also, different outline items should not have the same title.
- Within the outline points, the text should be structured by paragraphs according to the context.
- It is also possible to use bullet points for enumerations. However, this should be done in moderation (a seminar paper and a thesis are not PowerPoint presentations).
- It is possible, but not compulsory, to write a short pretext between two levels of outline (e.g. between 2 and 2.1). The pretext then only introduces the subsections of the chapter. If you decide to write a pretext, you must do so throughout all the chapters.

IX. Citing Sources

Requirement to Cite Sources

All scientific work is based on the relevant literature. Sources must be cited. Anyone who uses the intellectual property of others without making this clear is guilty of plagiarism. This may result in the thesis being failed. The Bachelor's examination may also be declared invalid retrospectively. There is also the threat of criminal prosecution. The citation requirement does not apply to statements relating to general knowledge of the subject discipline.

Citability

All sources that are generally accessible are citable. This is not the case, for example, with internal company documents or information from experts; these can be cited by including them in the appendix or by attaching them. If this is not possible (e.g. in the case of oral information), the author and his or her address must be given.

Citation Worthiness

Citation worthiness refers to the problem of what quality a source must have in order to be worthy of being cited. All types of scholarly literature (journals, monographs, edited volumes and conference proceedings) are of course citable. Introductory literature, such as short textbooks or handbooks aimed at practitioners, should only be used sparingly, and in any case one must go beyond them.

When it comes to sources from the Internet, a distinction must be made: If they are scientific sources, they are worth quoting. The same applies to official sources, such as the websites of the European Union, ministries, authorities, statistical offices, etc. Non-scientific and non-official sources on the Internet are generally not worthy of citation. The same goes for Wikipedia. Even though there are many high quality articles on Wikipedia, the fundamental problem remains that quality is not assured and it is not possible to judge which information is valid and which is not. Therefore, Wikipedia should only be used as a source of information to get an idea of a topic and then to dig deeper. However, you should refrain from quoting Wikipedia.

Consumer magazines (e.g. Time Magazine, The Economist) and newspapers should only be cited in exceptional cases, for example to document current events.

Forms of Citation

A distinction is made between *direct* and *indirect* quotation. In the case of a direct quotation, the content of a source is copied verbatim into the text, whereas in the case of an indirect quotation, the ideas of another author are simply taken over, but presented in the author's own words.

Direct quotations should only be used only in exceptional cases. There is usually no justification for including certain remarks as a literal quotation and not adapting them to the words and style of the author of the paper or thesis. A direct quotation may be used, for example, when a particularly concise or original idea is to be included, or when a significant quotation from an important author is to be included.

Direct quotations are indicated by quotation marks ("..."); indirect quotations omit quotation marks. In direct quotations, two periods (..) indicate the omission of one word, three points (...) indicate the omission of two or more words. Longer verbatim quotations of more than three lines may be set off from the text and indented, or even written in narrow lines.

A literal quotation must be reproduced exactly. So if a word in the quotation is written in bold or italics, this must be retained, as must errors in an a quoted text. To emphasize that a text contains an error, you can use a (!) or (sic!). If you want to emphasise text passages in the quotation by using bold or italics, you can do so, but you should then write "emphasis by the author" in brackets. Quotations within a quotation are indicated by half quotation marks ('...').

The location of indirect quotations depends on what they refer to. The correct place may be at the end of a sentence or paragraph, or in the middle of a sentence. The reader must be able to tell what the quotation is referring to.

Citation Techniques

There are two citation techniques: *American citation* and *footnotes*. Both are designed to help the reader to find the source quickly. The author of a seminar paper or a bachelor thesis can choose one of the two techniques, which must then be followed consistently.

Within the American citation, also known as the author-year system, there are several citation styles that differ in nuance. The most common are the Harvard style, that of the American Psychological Association style (APA style) and that of the Modern Language Association style (MLA style). Again, one of these styles should be used consistently. In the following, the American citation style will only be outlined. It is easy to find out more about the details of each citation style on the Internet.

According to the American style of citation, a source is cited in the text immediately after a direct or indirect quotation by giving the surname of the author(s), the year of publication, and the page number(s) in brackets (e.g. Miller 2022, 150 or Miller/Mayer 2022, 150). This is the so-called *short reference* of a source, as opposed to the *full reference* (= source with all bibliographical information, which is listed in the list of references, see X. below). You can also write "p." for "page" or "pp." for "pages" (e.g. Miller, 2015, p. 150 or Miller 2015, pp. 150 – 152). The parenthesis with the reference is placed before the punctuation mark, i.e. "... (Miller 2015, 150)."

If a title has more than three authors, it is sufficient to indicate the first author by adding "et al." (Miller et al. 2022, 150).

Sources from the Internet are cited in the same way, giving the author, year and page, but omitting the online reference (URL or DOI) and the date of access.

If two titles by the same author from the same year are cited in the text, this is done by specifying "a" and "b", as indicated in the list of references (e.g. Miller 2015a, 150).

If footnotes are used, they should be placed at the end of the page, not at the end of the text (i.e., not as endnotes, which reduce readability by requiring frequent scrolling). Footnotes should be numbered consecutively, i.e., not starting over with "1" on every page.

The superscript Arabic numerals that mark footnotes in the text are usually placed at the end of the sentence after the punctuation mark if the quotation refers to the whole sentence. Exceptionally, however, it may be necessary to place them in the middle of a sentence and possibly even to use several of them in one sentence; this is the case when they refer to specific words or parts of sentences.

Footnotes follow the same grammatical rules as the text, i.e. they begin with a capital letter after the footnote symbol and end with a period.

If the quotation is indirect, a "Cf." is usually placed before the name (unlike in the American citation).

If footnotes are used, it is recommended that only the short reference be given (e.g. Miller 2022, 150). However, unlike American citation style, this is not mandatory. It is also possible to cite the full reference with all bibliographical information from the list of references.

Footnotes can also be used - in contrast to the American citation - to integrate information into a text that is not part of concrete argumentation but which might be worth knowing for the interested reader, e.g. short excursions, examples, mathematical derivations, translations. However, care should be taken not to overload footnotes.

If several sources are given in a footnote or in brackets, they are listed in chronological order, starting with the oldest source. The sources are separated by a semicolon (e.g. Miller 2022, 150; Mayer 2023, 185).

X. List of References

The purpose of the list of references is to indicate the literature used in the paper or thesis. Accordingly, it lists all the sources referred to in the paper or thesis, but only those. It is *not* a bibliography that lists all the literature on a subject.

References are listed alphabetically by authors' surname. Academic titles are not given. Further subdivision of the list of references (into books, journal articles, internet sources, etc.) is not required, but also not prohibited.

Multiple titles by the same author are listed in chronological order, starting with the oldest. If an author has written one work alone and another jointly with a co-author, the work written alone is listed first.

The main types of sources are correctly identified as follows:

1) Books

Author's surname(s), initial(s) (year of publication) title, edition (if not the first). Place of publication: publisher.

Example:

Schuster, P., Heinemann, M., Cleary, P. (2021) *Management Accounting*. Cham: Springer.

It may happen that some of the information you need to refer to is unknown. In this case, the following information should be provided:

- No author is given: use 'Anon.'
- No date of publication is given: use 'n.d.'
- No place of publication is given (sine loco): use 's.l.'
- No publisher is given (sine nomine): use 's.n.'

2) Journal article

Author's surname(s), initials (year) title of article. *Title of journal*, Volume number (issue), page numbers.

Example:

Brunner, C.B./Ullrich, S./Jungen, P./Esch, F.-R. (2016) Impact of symbolic product design on brand evaluations. *Journal of Product & Brand Management*, 25(3), 307–320.

3) Paper in an anthology (or chapter in an edited book)

Surname of paper/chapter author, initial (year of publication) 'title of paper or chapter', in surname of book editor, initial. (ed.) *title of book*. place of publication: publisher, page reference.

Example:

Richter, N./Dragoeva, D. (2020) 'Digital Entrepreneurship and Agile Methods — A Hackathon Case Study' in Soltanifar, M./Hughes, M./Göcke, L. (ed.) *Digital Entrepreneurship. Impact on Business and Society*. Cham: Springer, pp. 51–68.

Page references should always be made indicating the first and the last page, e.g. pp. 14 - 34 and not p. 14ff.

4) Websites

Surname, initial/organisation (year that the site was published/last updated) *Title of web page*. Available at: URL (Accessed: date).

Example:

d'Andria, D./Heinemann, M. (2023) Overview on the tax compliance costs faced by European enterprises – with a focus on SMEs. Available at: [https://www.europarl.europa.eu/thinktank/en/document/IPOL_STU\(2023\)642353](https://www.europarl.europa.eu/thinktank/en/document/IPOL_STU(2023)642353) (Accessed: 17.07.2023).

Instead of the URL, you should provide the "persistent identifier", if available. This is a link that is permanently assigned to an electronic publication, similar to the way an ISBN or ISSN number is assigned to a book or journal. For scholarly publications, especially journal articles, the DOI (Digital Object Identifier) is commonly used as the persistent identifier.

For all types of sources, the following applies: If there are more than three authors, it is not necessary to name them all. In this case, the first author is cited, followed by "et al.". The same applies to editors and the place of publication.

Appendix 1: Template of the title page of a seminar paper



TITLE OF PAPER

Subtitle of Paper

Seminar Paper

at the Faculty of Business and Economics
Schmalkalden University of Applied Sciences

Degree Program International Business and Economics

Presented by

Anna Smith

Matriculation Number: ...

Street, House Number, Postcode, City

Born on ... in ...

Written in the course: ...

Winter semester/Summer semester 20..

Supervisor: Prof. Dr. ...



TITLE OF THESIS

Subtitle of Thesis

Bachelor/Master Thesis

Bachelor/Master of Arts (M.A.)

at the Faculty of Business and Economics

Schmalkalden University of Applied Sciences

Degree Program International Business and Economics

Presented by

Anna Smith

Matriculation Number: ...

Street, House Number, Postcode, City

Born on ... in ...

Supervisor: Prof. Dr. ...

Appendix 3: Template of a declaration

Declaration

I declare that all parts of this thesis have been written by myself and that I have only used references explicitly referred to in the text.

City, Date

Signature