

### THESIS CONTENT

The thesis should aim to provide the answer to an **interesting question** - convince and inspire readers with your research! - by means of gathering significant data/information and analyzing it in relation to/with the use of **economic concepts discussed during your studies** (e.g. externalities, asymmetric information, efficiency). One should therefore start with the question “would I be able to write the same thesis without my knowledge gained at the WNE UW?”. If the answer is “yes”, then it is likely that the topic or method of analysis is not appropriate, or the work is very superficial. Graduate (Master) students should additionally make sure that such a thesis could not be prepared by an undergraduate (Bachelor) student.

Writing the thesis without proper planning structure can lead to chaos in your thesis. The following structure will ensure a logical flow of ideas throughout your thesis. **The thesis should contain:**

- title - make your title short!
- summary/abstract (max 0.5 page) – it should be self-contained, without abbreviations, footnotes, references. These are a [few sentences](#) (do not copy the Title or fragments from the Introduction) that present the main idea of your thesis: (i) What your research is about? (ii) How did you do it? (iii) What is a horizon and geographic coverage? (iv) What did you find? Do not describe all, but principal results.
- keywords – phrases, which identify the most important subjects covered by the thesis. [Avoid](#) repeating words in the keywords section that are already in your thesis title.
- introduction (2-3 pages) - an explanation why the topic is important (max 1 page), the objectives of the work, hypothesis and research question, brief description of data and method, thesis structure. Do not use the argument that the topic is important because it is current or interesting (whether a topic is "interesting" please let a reader judge). Also knowledge ≠ opinion. Avoid a detailed literature review or a summary of the results. The idea of the Introduction is to capture the reader's attention and to provide background information on the research problem.
- a chapter informing about the topic and the motivation for undertaking it. You should also provide evidence that you properly understand economic theory used in your thesis by identifying key theories or concepts relevant to your study (explanation of concepts, illustration of the theory with a graph, etc.). It will ensure readers that you have a deep understanding of the analyzed research problem.
- literature review - discussion of published literature relevant to the topic, analysis and synthesis of the literature to establish the knowledge gap that your thesis aims to fill.
- main substance containing the essential analysis (1-3 chapters) - a detailed description of your research methodology, justify its appropriateness for your research, choose the tool, evaluate the data. Make the analysis, describe and interpret the results (results should be clear and concise), discuss the implications of your findings in relation to the research hypothesis or/and objectives. At the beginning or end of each chapter please explain how it contributes to the declared research objective.
- conclusions (2-3 pages) - explore the significance of the results of the work (do not repeat them, but present alternative perspectives) and derive conclusions. Avoid extensive citations and discussion of published literature, but inspire readers with your contribution - repeat your research objective and clearly explain the significance of your study in addressing it. Identify the strengths and weaknesses of your study, propose future research directions in order to demonstrate your

understanding of the broader implications of your research. Explain which part of the thesis was the main (other parts only help to understand your main part).

- bibliography - it should include those and only those works to which you refer in the text (not necessarily citing their fragment).

## RESEARCH

Your work should contain a research question (bachelor and master thesis) and hypothesis (master thesis). A **research hypothesis** is a prediction (based on significant knowledge or previous research on this subject) about the relationship between variables and it does not allow a wide range of outcomes. A **research question** is the open question your thesis sets to answer and it does not require any previous research or knowledge on the subject and allows a wide range of outcomes. Example of weak research question: "what are highway tolls in Poland?". Example of improved question: "are highway tolls too high in Poland?". Note, a research hypothesis (a statement of a predicted relationship between multiple variables) is not the same as a **statistical hypothesis** (a statement about relationship between two variables). A research hypothesis sets the stage to design your study, to collect empirical data, to test its truth or falsity. The choice of statistical test will depend upon the research design used, i.e. the test itself will not have a clue of where the measurement of the dependent variable came from or what it means. Thus alternative (H1) to the null hypothesis in a statistical or econometric test is not a research or experimental hypothesis. Each explanatory variable represents a kind of hypothesis. This means that testing the impact and significance of all variables included in the model is not the same as a research hypothesis.

In addition, you should formulate a **research objective** that clearly states what you want to achieve through your research. It determines the scope, depth and the overall direction of the research. Achievement of research objective provides answer to the research hypothesis/question. No one expects your research objective to be groundbreaking, but a weak or unclear objective can undermine the overall strength of your thesis. Avoid a broad objective, but narrow it down as much as possible, because it is impossible to perform an in-depth analysis of a broad objective. Avoid several objectives or hypothesis/questions, because it will be difficult for you to account for them in details. Example of weak objective: "The research focuses on bibliography management tools" or "The research was designed to find out whether bachelor students like to use the tool for bibliography management". Example of improved objective: "The research addresses the use of bibliography management tools by Polish bachelor students". Example of good objective: "The research was aimed to identify attitudes of bachelor students from Polish universities to use bibliography management tools". Thus you should clearly articulate not just the purpose, but also the scope of your study, because it helps readers understand the focus of your research. Note, the **research problem** (what is this research about?) is not the same as the research objective (what do you want to achieve through this research?).

Do not confuse **method** (how did you do your research?) with **methodology**. A method is the tool/technique used to answer your research questions/hypothesis or how you will go about collecting your data (e.g. interview, survey, econometric model, computer simulation). A methodology describes the broader strategy for your research approach that outlines the way in which research is to be undertaken (e.g. quantitative vs qualitative approach). It is a systematic and theoretical approach to collect and evaluate data throughout the research process, but it cannot tell you in detail how to do a specific research (methods do it). Thus methods provide the specific details of how you accomplish your research task (e.g. econometric techniques, strategies for gathering data). The methodology influences what methods are chosen. The purpose of research methodology is the justification for choosing a particular research method. Provide a rationale for your chosen methodology and address potential limitations - why is a given

methodology appropriate to achieve a given research objective? A weak methodology can undermine the credibility of your results. The choice of methodology and method must be justified by the relevant references.

The researcher should have solid training in economic theory. Describe the **economic theory** used in the thesis in order to prove the necessary skills for your research analysis. Just as for building a house, the right tools are needed, so to conduct an economic analysis an appropriate theoretical framework is needed. Show that you are thinking like economist.

## LITERATURE

It is important to provide references and bibliography in an appropriate and accurate manner. If you do not do this correctly, it is very likely that your research was conducted without adequate accuracy as well

Using unreliable or outdated sources can undermine the credibility of your thesis. A comprehensive review of directly related **academic literature**<sup>1</sup> is valuable, but is not necessary. One should, rather, approach the reviewed materials with **criticism**. An academic paper or a report of a respected institution will usually be more precise and reliable than someone's statement for the media, etc. Ensure that your sources are peer-reviewed, reputable, and relevant to your topic.

Generally, all unobvious statements that are not the result of one's own analysis should be provided with references to literature/sources. E.g. in the main text of the paper one will say "(...) Stanton (2010) argued this, while Andreoni et al. (2003) argued that (...)". It is crucial to provide your own insights and interpretations, not just summarizing sources. In principle, do **not** provide titles of works referred to in the main text or in footnotes, but only in the bibliography.

The thesis should end with a bibliography containing all the works you have used:

(...)

Andreoni, J., Castillo, M., & Petrie, R. (2003). What do bargainers' preferences look like? Experiments with a convex ultimatum game. *American Economic Review* 93(3), 672-685.

(...)

Stanton, F. (2010). Great negotiations: Agreements that changed the modern world. Westholme.

(...)

The bibliography should contain these and only these works, which you refer to in the text (not necessarily citing a particular passage). As a rule, the **footnotes** do not contain bibliographic items, but they supplement the threads discussed in the text. The bibliography should (i) contain all the necessary elements so that the reader can easily identify it, (ii) be sorted in alphabetical order according to the last name of the first author, (iii) have a uniform format (i.e. you choose the format yourself, but each reference presented must have an identical format), (iv) no sections like "articles" or "web sources" should be applied.

A **link** is not a bibliographical reference. The fact that a piece of text was found and read in the internet does not release you from the obligation to provide the author's name and the title. Similarly, when using data (e.g. from the Polish Main Statistical Office GUS) provide the title on the database/report and the

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<sup>1</sup> It is recommend scholar.google.com. Access to full texts of journal articles is possible via the University library (BUW) website – see 'E-resources' and select 'AtoZ list'.

table/page number (not just the link). If you discuss the results of a given study, e.g. based on a survey, it is worth mentioning a few words on the methodology and, in particular, the sample.

If you use **Artificial Intelligence** (AI), please note that references provided by AI-tools may be false. You should check the original source. You are also obliged to include AI-tool in your bibliography (use the name of the tool as the author, the year of the version, the scope of the support, title of platform where accessed). In addition, according to [University of Warsaw requirements](#), the diploma thesis should describe and clearly mark (e.g. in the introduction) the AI tools used, the purposes and methods of their use.

## PLAGIARISM

**The thesis must be ORIGINAL.** Hidden borrowings from others' works, including translations (no matter whether from published articles, books, webpages, master/bachelor thesis, written assignments, with or without the author's consent) and AI, will result in failing the course and may cause the initiation of a disciplinary procedure before the relevant university committee. Obviously, this does not concern quotations and discussions accompanied by a bibliographic reference. You always need to provide an exact source.

Plagiarism is not tolerated in any form (including self-plagiarism - you are not allowed to copy parts from one project to another). Even if the supervisor does not notice passages rewritten from other sources, a reviewer or an anti-plagiarism program may do so. Please keep **quotations** to a minimum (we quote only those phrases that are extremely accurate and irreplaceable) and put quotation marks. Long quotations gives the impression that the author is dependent or sloppy in formulating his thoughts.

Use of generative AI is allowed only to help you with your coding. Any parts of the code that have been generated need to be clearly marked by comments in the code, where you need to state the scope of the support, the type of AI, and its version.

## LANGUAGE

The thesis should be written in **proper English**. Typos, punctuation errors, wrong verb forms/tenses, etc., as well as using colloquial phrases will result in lowering the grade. Please avoid the words "should" or "must". Do not advocate for the general public: "everyone knows", "everyone is disturbed", "it is generally known", etc. Avoid merely presenting facts and information without critical analysis. Support your arguments and provide evidence for your claims!

The thesis should be **logically structured**. Each chapter and sub-chapter should focus on a specific aspect of your research and contribute to the overall argument.

The thesis should be **logically narrative**. Each paragraph should deal with one issue and should relate to the previous, as well as to the next paragraph (whenever they are in the same section). It is a good exercise to summarize each paragraph in one sentence. This should be possible and the resulting text should be relatively coherent. If a paragraph cannot be reasonably summarized in one sentence, then it is likely a) lacking substance and/or b) self-contradictory and/or c) devoted to too many different issues. If a paragraph consists of a single sentence or is more than half a page long, something is certainly wrong.

**Footnotes** should be avoided in view of the principle that if any thought is so important that we want to

mention it, we include it in the main text. If it is not so important that it merit a place in the main text, then let's not mention it at all. However, there are situations when a footnote is necessary. Namely, when a thought is important, but its placement in the main body of the text would break up the paragraph's plot.

If you provide **numbers**, remember that in English decimal numerical notation uses (decimal) points, not commas. In addition, the reader will usually not be interested in the fact that in a given year 37849180 cars have been registered in Mexico and may actually have a problem to count the digits in such number. Therefore, it is much better to write that there were 37.8 million of them. It is also worth considering whether a graph could be the best way to present a large number.

If the thesis contains **tables/figures**, each should be numbered, titled, and have any explanations to understand what they represent without referring to the main text. At the same time, in the main text at least one reference should be made to every table/figure. If such reference does not fit in the text, it is likely that the discussed object is superfluous.

The writing do's and don'ts (common errors, phrases to use, and other insights that help in solid writing):

[https://zoom.us/rec/play/VY6wCFXtxBne-uSRVrox13-oxSVs5G6UNHZo16PdGuLVzXchZ71vALLprHITfbh6hev8Aer3jTSHGWWhc.iKD4rnwWP79yP7Ne?startTime=1644483566000&\\_xzm\\_rtaid=cX8xTBebQF2bfBibGayByw.1644511237400.5a9600f2504ae5a1013faf10fda50be5&\\_xzm\\_rhtaid=147](https://zoom.us/rec/play/VY6wCFXtxBne-uSRVrox13-oxSVs5G6UNHZo16PdGuLVzXchZ71vALLprHITfbh6hev8Aer3jTSHGWWhc.iKD4rnwWP79yP7Ne?startTime=1644483566000&_xzm_rtaid=cX8xTBebQF2bfBibGayByw.1644511237400.5a9600f2504ae5a1013faf10fda50be5&_xzm_rhtaid=147)

You may wish to install application "Writefull" - an automated proofreader for science. This AI is trained to work with scientific writing, rather than a common language. Academic language tips:

- common errors in prepositions  
<https://blog.writefull.com/academic-writing-errors-to-avoid-prepositions/>
- common errors in verb-noun pairs  
<https://blog.writefull.com/academic-writing-errors-to-avoid-verb-noun-pairs/>
- how to introduce your study  
<https://blog.writefull.com/how-to-introduce-your-study/>
- how to structure your abstract/summary  
<https://blog.writefull.com/how-to-structure-your-abstract/>

## THESIS FORMATS

Thesis may be written in the one of the following formats:

- 1) traditional (~50 pages, ~100 000 characters with spaces for Bachelor thesis and ~80 pages, ~160 000 characters for Master thesis)
- 2) traditional, but co-authored by 2 students (the share of each co-author must be equal)
- 3) scientific article (it does not have to be published)
- 4) scientific article (it does not have to be published), but co-authored by 2 students (the share of each co-author must be equal)
- 5) scientific article (it does not have to be published), but in co-authorship with the supervisor (student's share of at least 60%). [Example](#)
- 6) scientific article (it does not have to be published), but co-authored by 2 students and the supervisor (share of each student at least 40%)

Thesis as a scientific article should contain the annex. The limit of words does not cover the annex. The annex should contain broader description (than presented in the main part of the thesis) of the literature review, the applied research method, and the results.

## GRADING

The following main components of your thesis will be graded by both, your Supervisor and Reviewer, after your Supervisor will accept your thesis:

- significance and originality of the topic / research question (Note: a Master's thesis should include a **research hypothesis**, while a Bachelor thesis – a **research question**. Both should also include a **research objective**/task/goal/ statement)
- theoretical analysis, with reference to concepts learned at the economic classes
- reliability of gathered data / significant information
- the methods of analyzing the data/information (regression analysis, extended literature review etc. for Bachelor thesis; panel data, machine learning, meta-analysis etc. for Master thesis)
- proper language, style, conciseness, editing, etc.

The full evaluation form is available here:

[https://www.wne.uw.edu.pl/download\\_file/2369/1977](https://www.wne.uw.edu.pl/download_file/2369/1977) (see Annex A)

[https://www.wne.uw.edu.pl/download\\_file/112/254](https://www.wne.uw.edu.pl/download_file/112/254) (Polish version)

## DETAILED RULES

The detailed elements of thesis grading and formal requirements:

[https://www.wne.uw.edu.pl/download\\_file/2369/1977](https://www.wne.uw.edu.pl/download_file/2369/1977) -- please note that Polish version below includes more details (use online translator)

[https://www.wne.uw.edu.pl/download\\_file/4221/254](https://www.wne.uw.edu.pl/download_file/4221/254) (Polish version)

The detailed layout of thesis:

[https://www.wne.uw.edu.pl/download\\_file/2368/1977](https://www.wne.uw.edu.pl/download_file/2368/1977)

[https://www.wne.uw.edu.pl/download\\_file/120/254](https://www.wne.uw.edu.pl/download_file/120/254) (Polish version)

Future information:

<https://www.wne.uw.edu.pl/en/students/diploma-thesis> - please note that Polish version below includes more details (use online translator)

<https://www.wne.uw.edu.pl/student/prace-dyplomowe> (Polish version)

## EXAMPLES OF GOOD THESIS

Note: the formal rules in older theses were different from the current ones.

Bachelor

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Bors.pdf> (CGE-sport)

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Cichminska.pdf> (meat industry)

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Lewczuk.pdf> (CGE - Polish version)

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Iwaniuk.pdf> (game theory - Polish version)

Master

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Okhrimenko.pdf> (rationality)

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Koper.pdf> (CGE-international trade)

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Rokicka.pdf> (machine learning - Polish version)

<http://coin.wne.uw.edu.pl/kiuila/CGE/Thesis/Hagemejer.pdf> (international trade - Polish version)

## **GUIDELINES FOR SUBMITTING THESIS DRAFTS/PROPOSALS TO THE SUPERVISOR**

You are kindly requested not to submit the entire thesis at once, as this will avoid repeated errors and the rewriting of the entire thesis. You should submit a completed subchapter or entire chapter, and after the supervisor's approval, prepare further parts of the thesis without repeating the previous mistakes. The following requirements also apply to the proposal so that the supervisor can determine whether such a thesis will be appropriate.

**Before each submission** of the file (in editable text format!) for the supervisor's review, ensure that the following items are present:

- 1) The purpose of the thesis and a brief justification are included, if a complete Abstract or Introduction is absent in the current version of the document.
- 2) The thesis should immediately comply with the formatting requirements (see previous sections), i.e. include a title page, approximate table of contents, adequate margins, correct formatting of tables, etc.
- 3) The bibliography should be updated on an ongoing basis, i.e. references in the text should be immediately followed up with the relevant entry in the bibliography list at the end of the file, instead of being completed later.
- 4) The re-submissions should contain a clean text (without marked changes and comments), unless (i) you disagree with some claims (leave them out and provide a counter-argument), (ii) you postpone a comment until later, or (iii) you have made changes to a part of the thesis that has been already accepted by the supervisor (in this case please mark your changes to that part only). Make sure that you have taken into account all the corrections and comments made by the supervisor. For Latex document, submit the full folder including pdf.
- 5) Your corrections should not only take into account the corrections marked by the supervisor, but should also be appropriately applied to the whole thesis. The supervisor's task is only to show you, by proofreading the first few pages, how the whole thesis should be written, not to correct every sentence in the whole thesis.
- 6) Do not send just new version of the text, but double check that the quality of the submitted parts is high enough (i.e. that you are proud of the quality and that you follow all the rules explained in this document). Please maintain the continuity of correspondence by clicking "reply" instead of starting a new email.

## **CONDITIONS FOR SUCCESSFUL COMPLETION OF A SEMESTER (3 ECTS $\approx$ 90h of work)**

Passing of the semester is determined by one of the following activities:

- 1) completion of a single chapter of the thesis
- 2) construct a model for the thesis or perform data mining or similar activities (submit min. 1-page description of the model or data and about 5-pages preliminary analysis of the results or data)
- 3) prepare solutions to CGE exercises for one example for which there is no solution on <http://coin.wne.uw.edu.pl/kiuila/cge.html> (the solution should be submitted with a detailed description and interpretation of the steps)
- 4) only in the fall semester:  $\sim$ 5 presentations of research papers or reports during the classes

Dean's requirement - if this is your last semester of diploma seminar, the only way to pass it (and all subsequent semesters, if you have been accepted for an extension of your study) is to submit a final version of the thesis. Completion of the thesis is understood as (i) passing two (for Bachelor thesis) or three (for Master thesis) semesters and (ii) approval of the thesis by the supervisor.