

Heading [on one or multiple lines]

Subheading [on one or multiple lines]

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Supervisor: Supervisor

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This final thesis has been carried out at the School of Engineering at Jönköping University within Computer Engineering. The authors are responsible for the presented opinions, conclusions and results.

Examiner: XXX

Supervisor: XXX

Scope: 15 hp (first-cycle education)

Date: 20XX-XX-XX

# Abstract

The abstract is a short description (mini report) of the contents of the report and should not exceed an A4-page. The purpose of the abstract is for the reader to quickly gain an understanding of the circumstances and findings of the study. It is therefore essential that the abstract contains as concrete details as possible. It is important that you place great emphasis on your wording since the abstract often determines if the report is deemed worth reading.

Keywords XX, XX…

In order for others to be able to find your report through search engines you need to define keywords. A suitable number of keywords is somewhere between 4 – 10. The keywords should represent core themes in your report but it isn’t necessary that the exact keywords are represented in the report.

Example keywords could be: *Final thesis work, template, Word-template, results*

# Abbreviations

|  |  |
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# Acknowledgements

Asdasasd

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# Table of content

[Abstract 2](#_Toc124677439)

[Abbreviations 3](#_Toc124677440)

[Acknowledgements 4](#_Toc124677441)

[Table of content 5](#_Toc124677442)

[1 Introduction 1](#_Toc124677443)

[1.1 Problem statement 1](#_Toc124677444)

[1.2 Purpose and research questions 1](#_Toc124677445)

[1.3 Scope and limitations 2](#_Toc124677446)

[1.4 Disposition 2](#_Toc124677447)

[2 Method and implementation 3](#_Toc124677448)

[2.1 Data collection 3](#_Toc124677449)

[2.2 Data analysis 3](#_Toc124677450)

[2.3 Validity and reliability 3](#_Toc124677451)

[2.4 Considerations 4](#_Toc124677452)

[3 Theoretical framework 5](#_Toc124677453)

[4 Results 6](#_Toc124677454)

[5 Discussion 7](#_Toc124677455)

[5.1 Result discussion 7](#_Toc124677456)

[5.2 Method discussion 7](#_Toc124677457)

[6 Conclusions and further research 8](#_Toc124677458)

[6.1 Conclusions 8](#_Toc124677459)

[6.1.1 Practical implications 8](#_Toc124677460)

[6.1.2 Scientific implication 8](#_Toc124677461)

[6.2 Further research 8](#_Toc124677462)

[7 References 9](#_Toc124677463)

[8 Appendixes 10](#_Toc124677464)

[Figures 11](#_Toc124677465)

# Introduction

The chapter provides a background and a clear motivation for the study and the problem area the study is addressing. Further, the purpose and the research questions are presented. The scope and delimitations of the study are also described. Lastly, the disposition of the thesis is outlined.

## Problem statement

The problem statement aims to provide a more detailed description of the components involved in the problem depicted in the section above. It is important to transform the specific problem, e.g. the specific task from a company, to a broader and more universal or general problem which may be of relevance for a bigger audience, for example other industries or trade sectors. This is done by presenting a chain of reasoning in which the specifics of the task are portrayed as a special case of something more generic.

Apart from demonstrating a broader need of the specific task it is also important to relate to the “state of the art” research in this area and present the scientific relevance/gap why this has scientific relevance. Use references according to the APA system. This is done appropriately by describing the research front for the area with its in-depth parts. By this reasoning X, standpoints are taken along the way which will lead to a well-argued and traceable specification and funneling of the problem area, whereby the purpose and the research question will follow naturally.

Start with a wider perspective and narrow down your descriptions in order to end up in clear and well justified research question(s) and purpose. The reader shall, based on the argumentative problem statement develop a clear understanding for why this is a relevant study to do, the so-called knowledge gap in the existing literature.

Elaboration of theoretical dimensions in the thesis is then done in the chapter “Theoretical framework”.

## Purpose and research questions

Clearly and concisely state the purpose and the research questions. The purpose defines what will be performed, examined, or compiled as well as its significance. The purpose can be broken down into research questions which you will answer in your report to fulfil the purpose. Your purpose and research questions will set the path in terms of choices of methods, theories, analysis options, etc.

Drawing on the problem statement, it is evident that XXX. Further, it is evident that XXX. Consequently, the purpose of this study is:

*To XXX*

When the reader has arrived at the research questions then they should appear as a natural result of the all the previous text in this chapter, i.e. the reader shall with ease understand that these are natural and well justified research questions. The reader shall NOT have to read between the lines and make interpretations in order to understand the choice of research questions.

In order to fulfil the purpose, you have defined X research questions. Discus and argue for the first research question and hence, the study’s first research questions is:

[1] XXX

Discus and argue for the second research question and hence, the study’s second research questions is:

[2] XXX

Discus and argue for the third research question and hence, the study’s third research questions is:

[3] XXX

## Scope and limitations

Here you should fill in the gaps concerning the purpose and research questions by describing what the study entails, and even more importantly, what the study does NOT entail. Keep in mind that a thorough and coherent problem statement section will result in less need for delimitations.

**Figure X**: The scope and delimitations of the study

## Disposition

Describe how the remainder of the report is structured, that is to briefly explain how the report is organized to help the reader gain an idea of the structure of the report.

# Method and implementation

This chapter should describe and motivate the work process for this study. This is done through describing and motivating the approach and design, methodological considerations and well justified decisions concerning the study. In addition to this the chapter shall also describe how the data collection and data analysis has been conducted. The chapter ends up with a description of how to secure validity (validation) and reliability (credibility) in the study.

The chapter should also describe and motivate what kind of study you have conducted, i.e., a case study or an experimental study, as well as if it is qualitative and/or quantitative and what it entails in terms of interviews, surveys, design, observation etc.

Some problems are suitable to investigate through a qualitative or quantitative study but in many cases a combination is to prefer.

## Data collection

This section you should describe and justify the methods for data collection that you have used in order to answer the research questions. For each research question you can write a paragraph where you argue for your choice of method in a systematic way based on the scientific method literature (method references).

Describe how you have performed your research, i.e., what and how have you done to answer your research questions. In this context you should describe how you have conducted your interviews, equipment that you used, experiments that you have conducted etc. in order to collect your data. Be thorough in your descriptions since it will affect the assessment of validity and reliability.

## Data analysis

In this section you should describe and justify your chosen analysis method(s). Be careful in describing how you have conducted the analysis of your collected data. Be thorough here in your descriptions since this also will affect the assessment of validity and reliability.

## Validity and reliability

Validity and reliability are a very important goals for an academic thesis! Validity and reliability mean to make, describe and justify decisions related to method for data collection, method for analysis, choice of theories etc. It is about convincing the reader to believe in what you have done.

Validity is an important requirement on different methods for data collection and data analysis. If for instance the survey doesn’t measure what it is intended to do as a result of that the survey questions aren’t enough elaborated and exhaustive, then it doesn’t matter if the actual execution has been perfect.

Reliability is also an important requirement on choice of methods. This mean that the instrument use for measuring (survey) should deliver reliable results. Others who make the same study shall reach the same results and conclusions if they use the same instrument. Choice of methods should be independent of the researcher but dependent of the degree of generalization in order to have high reliability

## Considerations

This section should describe and justify relevant considerations that you have done related to your study. Typical considerations could be scientific, societal, environmental, ethic, sustainability etc. An important consideration in itself is to decide upon which considerations that are relevant for your study. Then you can describe these considerations that are relevant for your study.

# Theoretical framework

Based on your review of “state of the art” (current literature) in the problem statement as well as the developed research questions and purpose, you identify relevant sources/theories that further needs to be addressed to achieve stipulated learning outcomes. The framework is for instance used as a base to generate interview guides, survey questions etc. The framework also serves as a base for the analysis where you let your results from the empirical work meet the results from your theoretical work.

In this chapter it is suitable to put forward argument that not only describes different theories but also compares and evaluate them depending on how they will be used in the thesis work. It is important that you refer to all sources used in this chapter according to established rules for referencing (The APA system).

# Results

A chapter about results is often divided into two sections, 1) presentation of collected data and 2) data analysis.

In the first section the collected data should be presented in an objective and coherent way without personal interpretations, views and evaluations.

In the second section, the actual data analysis is presented. This means that the works procedure of the data analysis that previously was presented in the method chapter is populated with content. The collected data is put through the analysis process. The result from this data analysis should generate results that answers your research questions and fulfils your purpose.

# Discussion

In this chapter you are supposed to discuss the results of the study in relation to previous preformed studies. Furthermore, this chapter is supposed to discuss implications of the study and limitations.

## Result discussion

In this section you are supposed to discuss your results from the analysis and evaluate them in relation to your purpose and research questions. You are supposed to reflect over your results in terms of, why did you end in precisely these results, how do these results relate to what other researchers has found compared to your theoretical background.

A tip for a useful structure in this section that also can cater for a read thread is to start with a repetition of your purpose and research questions. In this way you will help both yourself and the reader – it helps you to secure that you really are answering your research questions and that you are fulfilling your purpose. It will also help the reader to understand and to follow your line of presenting and arguing.

## Method discussion

In this section you should discuss your choice of methods and the execution in terms of strengths and weaknesses. Discuss to what degree you have fulfilled your purpose and to what degree you have answered your research questions based on your choice of methods. What worked well and what didn’t work so well? Are there things that you have done differently? To what degree have you achieved the requirements on validity and reliability?

# Conclusions and further research

This chapter should present the conclusions from your study and suggestions for further research.

## Conclusions

Make a clear backcheck of your problem statement and describe possible implications of your study. In what way is your study contributing to your problem statement.

### Practical implications

What possible practical implications can your result have on the industry, the public sector and/or society?

### Scientific implication

What possible scientific implications can your result have on the scientific community?

## Further research

Give some suggestions on how it would be possible to continue with new research based on your results and conclusions.

# References

Use the APA system.

Use the reference tool in Word or EndNote.

# Appendixes

Appendix 1 Text to describe the appendix

Appendix 2 etc.

Every appendix should be numbered according to this list in the upper corner on the right-hand side. Every appendix should be on a new page.

## Figures

Figures should be referred to in the text before they are presented in the report. Figure captions should be placed under the figure including a reference if needed (see figure 1). All illustrations except from tables are referred to as figures



Figure 1: Figure text, 12pt, italic

**Tips and some recommendations**

This text, and all other red text, are comments on the template that you should read and remove from the document as you think you are done.

The instruction "Guidelines for degree project" also contains a number of grading criteria that can be useful during the work so that you know that you meet the requirements.

You must use the spelling checker before submitting the report. If you are unsure of a word in the spelling, it is a good support.

When it comes to language, keep in mind that even an uninitiated reader should be able to understand what you have written. Below is a checklist of tips and advice regarding languages ​​and formalities. There are also some tips and advice regarding the language in the above-mentioned instructions for degree project.

It is important to refer correctly to text and material that is not your own but that you use in your work. Firstly, you must provide a reference to the source in the current text, and secondly, a complete reference must be found in the chapter References. The important thing is to consistently use the same reference system throughout the report. Read more about this in the instructions.

Learn the reference tool in Word properly and use it instead of manual reference management.

**Tips and advice based on what previous students often needed to improve**

1. Feel free to start and round off each chapter with a few lines to introduce the reader to what is covered in the chapter and why and partly to avoid an abrupt end and at the same time make a smooth summary of the chapter and a transition to the next chapter if appropriate.
2. Tempus: Use the correct tempus when writing. Generally, use imperfect in most sections. Thus, do not use "will". Keep in mind that when the degree project is read by others, it has already been completed and then "will" is irrelevant - then it is imperfect that applies except for parts in the introductory section and purpose as well as in empirical presentation and in the discussion. Imagine an unknown person reading your essay in two years. Then the tempus you use in the essay should still be relevant.
3. Use complete sentences and do not stack clauses on top of each other.
4. Paragraph division shall, for example, be made with double row spacing between paragraphs or simple line breaks with indentation of the first word. Do not mix several different paragraphs. Text that logically belongs together must be in the same paragraph. Do not write too long paragraphs - then it will be more difficult to read.
5. Read carefully about plagiarism. If you are writing a text literally, then you must enter "quotation marks" around the text and enter the page number in the reference where the text is retrieved.
6. Language review of the entire document.
7. Explain terms, constructs and concepts the first time they are used.
8. Never use proper names (nouns) when referring to people who have contributed to the data collection. Instead refer to their profession/position/role etc.
9. Introduce all images, figures and tables in the text and refer to them before presenting them.
10. Number and write text (captions) under all pictures and figures and over tables. Do not forget references in your captions.
11. Read other degree projects that your supervisor/examiner can recommend as good examples.
12. Have someone close to you, perhaps your partner, parents, friend read your report - they see things that you do not see yourself.
13. Select the reference system (APA) and then follow it exactly. Detailed instructions are available on the library's website.
14. Let your research questions guide the whole thesis. Each chapter should focus on your research questions, even if you do not have to repeat them in each chapter.
15. Each appendix shall have its own serial number in the upper right corner; Appendix 1, Appendix 2 etc.