



TU Wien
Institute of Transportation
Research Unit of Transport Planning and Traffic Engineering
(TUW-FVV)

Karlsplatz 13/230-1
A-1040 Wien
Phone: +43 1 58801 23101

Notes on the structure of a scientific paper

Abstract

Introduction

Status Quo, basics, state of knowledge, problem outline, research questions

Literature

Review/analysis of existing literature and emerging niches not yet researched; refer to books, papers, reports, diploma theses,

Materials & Methods

What method was used and how; what data were generated or used; sample description

Results

Tables, diagrams, linking and descriptive text

Discussion

Explore significance of results; discuss in relation to existing literature; possibly include slightly speculative component - educated guess; shortcomings & limitations of materials & methods

Conclusion

Core statements, answers to the research questions, need for further research

Directories

Literature, figures, tables; possibly glossary and index

Appendix

Everything that is necessary for the understanding and comprehension of the work, but does not fit in the front because it is too detailed, too extensive, ...: Questionnaires, sample data sets, ...

Guidance is also provided by the IMRAD entry at Wikipedia: <https://en.wikipedia.org/wiki/IMRAD>



Hints for writing a bachelor thesis

A bachelor thesis is a pre-scientific work. In the bachelor's program in civil engineering, this must be written in the form of a publication. The exact specifications and the format template to be used can be found under

<https://www.tuwien.at/en/cee/transport/planning/students/theses/bachelor-theses>

The aim of the bachelor thesis is, among other things, to prepare you for independent scientific work. You should therefore carry out the chosen task as independently as possible under the guidance of the supervisor. In addition to the quality of the completed publication, the independence of the work is therefore also an assessment criterion.

Before contacting the supervisor, try to clarify open questions by literature research, internet research or peer to peer, i.e. by an exchange with colleagues.

A publication must be written in understandable, correct language. Avoid "I" and "one" formulations. Stick to facts, counts, etc. Avoid assumptions or label them accordingly. Ask someone close to you (friends, acquaintances, relatives) to proofread your work. It is not the supervisor's responsibility to correct spelling errors and grammar.

Be sure to cite correctly. See the citation rules below.

Structure the abstract logically and use small subheadings according to the following international examples:

- Introduction, Purpose, Methods, Conclusions
(<https://etr.springeropen.com/articles/10.1007/s12544-017-0264-6>)
- Purpose of Review, Recent findings, Summary
(<https://link.springer.com/article/10.1007/s40572-017-0148-x>)
- Background, Methods, Results, Conclusions
(<https://academic.oup.com/jpubhealth/article/33/2/160/1591440>)
- Introduction, Methods, Results, Conclusion
(<https://injuryprevention.bmj.com/content/early/2018/06/23/injuryprev-2017-042498>)

Citation rules for bachelor theses

For bachelor theses written at the Research Department for Transport Planning and Traffic Engineering, Institute of Transport Sciences at the Vienna University of Technology, the following rules for citing and referencing literature and other sources apply.

References in text

A source can be referred to in the text: 1. with [no.] or 2. with (author year) at the end of the sentence. If 2. is used to refer to the source directly in the sentence, the author(s) is lifted out of the parentheses, e.g.: "In his study, author (year) found XYZ.". If there are two authors, both are cited with an "and" between them; if there are more than two authors, only the first plus the abbreviation "et al." is cited. In the case of literal quotations, the quoted text is written in italics and the page in the source is also indicated. If the year of publication is not known, then the abbreviation "o.J." is



used instead of the year. If no author is known, then the abbreviation of the publishing organization is given instead of the author, e.g. (ILS 1990).

Examples:

Non-literal citation

In case of higher demand, the parking facilities should be expandable (Meschik 2008).

According to Torslov and Jensen (2007), it was forgotten for a long time in Copenhagen to invest not only in cycle paths but also in bicycle parking facilities.

The value determined from traffic counts therefore corresponds to the minimum requirement and is to be increased by expansion factors (Sigris et al. 2008).

Literal citation

Safe, covered and easily accessible bicycle parking facilities in residential areas encourage the use of bicycles and prevent them from being parked in building entrances or on sidewalks (Sigris et al. 2008) p. 13.

Literature list

In the case of the citation method (author year), the bibliography is to be arranged alphabetically and by year in ascending order. When using the citation method [No.], the references in the bibliography are numbered consecutively according to their appearance in the text.

Important: In the case of sources from the Internet, the date of access to the source must always be cited!

Book

Meschik, M. (2008) Planungshandbuch Radverkehr, Springer Verlag, Wien - New York.

Sigris, D., Zahnd, T., Rothenbühler, M. und Diem, I. (2008) Veloparkierung - Empfehlungen zu Planung, Realisierung und Betrieb, Bundesamt für Strassen (ASTRA), Velokonferenz Schweiz (VKS), Bern.

Book series

ILS (1990) Ruhender Radverkehr - Vom Fahrradständer zur Fahrradabstellanlage, Bausteine für die Planungspraxis in Nordrhein-Westfalen, Nr. 10, Published by the Institute for State Urban Development Research of the State of North Rhine-Westphalia (ILS) on behalf of the Minister for Urban Development, Housing and Transport of the State of North Rhine-Westphalia.

Magazine article

Pfaffenbichler, P. (2011) Modellierung mit Systemdynamik als Methode zur Überbrückung der Kluft zwischen Politik, Planung und Wissenschaft? Lessons Learnt from the Development of the Land Use and Transport Model MARS, Transport Reviews: A Transnational Transdisciplinary Journal, 31 (2) S. 267 - 289.

Conference contribution

Torslov, N. and Jensen, N. (2007) Copenhagen Cycle Parking Strategy, Velo-city 2007, München.

Sources from the Internet

Statistik Austria (2011) Kfz-Neuzulassungen Jänner bis Dezember 2011, http://www.statistik.at/web_de/static/kfz-neuzulassungen_jaenner_bis_dezember_2011_055222.xlsx, accessed: 5.4.2013

MA 46 (2012) Facts and figures on Vienna's cycling network, MA 46 - Verkehrsorganisation und technische Verkehrsangelegenheiten, Vienna. <http://www.wien.gv.at/verkehr/radfahren/radnetz/fakten.html> Accessed: 5.4.2013



General notes

References to sources from the Internet should be kept to the necessary minimum. In general, the more official a website (e.g. of the City of Vienna, Statistics Austria, a ministry, etc.), the less objectionable the citation.

Wikipedia is well suited for a first overview, but should not be directly cited in scientific ones, if possible. Due to the highly varying quality of the entries, it is generally necessary to search for and cite the original sources cited there or others.