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How to write a good technical report

**José Holguín-Veras , Ph.D., P.E.
Associate Professor
Rensselaer Polytechnic Institute,
JEC 4030
Troy, NY 12180-3590**



How to write a good technical report ²

- ❖ Before writing the first word:
 - ❖ Make your mind regarding the message you want to convey
 - ❖ Try to define the likely audience:
 - ❖ Technical audience
 - ❖ Non-technical, e.g., general public
 - ❖ Taking into account the audience's limitations and the message you want to convey, choose an appropriate outline

Components (not in order)

- ❖ Executive Summary
- ❖ Introduction
- ❖ Methodology
- ❖ Results/Analysis of
- ❖ Conclusions
- ❖ Bibliography
- ❖ References
- ❖ Abstract
- ❖ Background
- ❖ Appendices
- ❖ Figures and Tables

Executive Summary

- ❖ A summary, tailored to high level executives outlining the major findings of the report, i.e., the bottom line. Standalone, not part of main document.

Abstract

- ❖ A summary of major research/methodological contributions. Used in research papers and documents.

Background

- ❖ A description of the history behind that particular problem. It may cover previous works on the area and previous attempts to solve the problem.

Introduction

- ❖ A transition toward the main body of the document. It should take an uninformed reader from a level of zero-knowledge to a level in which the reader is able to understand the main body of the document.

Introduction -components-

- ❖ A good introduction must have:
 - ❖ Motivation (i.e., why is it important?)
 - ❖ General
 - ❖ Specific
 - ❖ Background (i.e., what is the history of this issue?)
 - ❖ Objectives (i.e., what are you trying to accomplish?)
 - ❖ Scope (i.e., what is the focus of your analysis?)
 - ❖ Limitations (i.e., what constraints did you face?)
 - ❖ Content (i.e., what is in the report?)
 - ❖ Organization (i.e., how the report is organized?)

Methodology

- ❖ A description of the methodological framework you have used in the project, or investigation. It focuses on the theoretical side of the methods.

Analysis of Results

- ❖ A description of the results obtained and and analysis of the implications associated with main results.
It must be supported by figures and tables to facilitate, not to confuse, the reader

Conclusions

- ❖ A summary of the major findings you have arrived to in the previous sections. “Conclusions” is not an analysis section.

Recommendations

- ❖ Insights into the next steps you recommend to be taken. This must be supported by the analysis and conclusions section of the report.

Bibliography

- ❖ A listing of books and articles you have used, or consulted, for methodological issues.

References

- ❖ A listing of books and articles you have used, or consulted, for methodological and non-methodological issues.
- ❖ Must follow the Harvard Referencing Style
 - ❖ <http://library.curtin.edu.au/referencing/harvard.pdf>

Figures and Tables

- ❖ They are intended to facilitate understanding of the document by presenting relevant information and data in a easy-to-understand-way. They must be integrated to the main body.

Appendices

- ❖ Intended to present data and analysis, that though important, may not be directly relevant to the main body. It is intended for interested readers only. Appendices are not dump places and they must be classified and organized.

Typical outline

❖ Full blown report:

- ❖ Executive Summary (1)
- ❖ Abstract (2)
- ❖ Introduction (3)
- ❖ Background (4)
- ❖ Methodology (5)
- ❖ Analysis of Results (6)
- ❖ Conclusions (7)
- ❖ Recommendations (8)
- ❖ References or Bibliography (9)
- ❖ Appendices (10)
- ❖ Figures and Tables (11)

Notes:

- ❖ (1) and (2): not always needed.
- ❖ (3): although not always a section entitled “Introduction” is needed (e.g., in short reports), an introductory section (e.g., a couple of paragraphs) is always required.
- ❖ (4): required when the history of the problem (or methodology) is long. Otherwise, include as part of the introduction.

Notes -cont-:

- ❖ (5) and (6): Must be separate sections when they are relatively long. Otherwise describe (5) before (6) in the same section.
- ❖ (7): Must follow from the main body (must be supported by).
- ❖ (8): If short, put at the end of conclusions.
- ❖ (9): Use one or the other.

Notes -cont-:

- ❖ (10): It must be classified and organized to present important data/information not directly relevant to the main body of document.
- ❖ (11): Must be integrated to main body of document, figures and tables must be placed after they are first referenced. If no reference is made to a figure or table, why did you put it in the main body?

Questions ?