Workshop

Writing manuscripts for Official Statistics journals: Guidelines for practitioners and researchers:
8, 10 and 15 February 2022

Session 1: February 8, 2022

THE OVERALL STRUCTURE - OUTLINE

- Why am I writing a paper?
- What makes my paper publishable?
- How to Structure the paper
  - IMRAD Format
- Additional sections of a paper
- General comments
THE OVERALL STRUCTURE – WHY AM I WRITING A PAPER?

• Following what Stephen closed with, a good question to ask is
  • Is the message important and who is it for?
• Important messages include
  • Solutions to an important issue/problem
  • Sheds additional light on a subject of interest
  • Reviews the current state of understanding
  • Describes a novel approach
• Types of potential audiences
  • Colleagues in my organization
  • Employees of other National Statistical Offices
  • Researchers
I want to share my work because it deals with an important problem that many organizations are facing.
THE OVERALL STRUCTURE – WHAT MAKES MY PAPER PUBLISHABLE?

First question is what type of paper will it be?

A review paper
- It reviews an important topic where lots of work has been done recently, e.g. producing valid inference from non-probability samples
- What has changed that means the topic should be revisited? For example, NSO are modernizing due to budget challenges, reduced response rates, etc.

Original work or research
- Amazing new theory that solves an important problem – very rare!
- New results which help solve an ongoing problem faced by multiple organizations
THE OVERALL STRUCTURE – WHAT MAKES MY PAPER PUBLISHABLE?

- An expository paper
  - Describes a subject/situation in certain detail to inform the audience about the subject/situation
  - The purpose is to give deeper insight into the subject/situation
- A technical note
  - A short note describing novel aspects of a technique, procedure, etc.
- This reflection will help you decide what is your audience, how to structure the paper and also what journal is appropriate
You are going to write a paper but how should it be structured?

Goal is to create a connection between you (the author) and the reader (audience)

One tool to help achieve this is the IMRAD format

Introduced as a standard by the American National Standards Institute in 1979

More appropriate for original research, technical notes and perhaps expository papers

What follows are general suggestions for writing papers

Which ones and how you incorporate them will depend on the type of manuscript you are writing and the intended audience

They are only guidelines as there is no magic recipe to get your paper published
IMRAD corresponds to:

- **Introduction**
  - Why did you do the work?
  - This is KEY since if it is not well done, readers will not continue
  - Explains the motivation for the work and what problem is being solved
- **Methods**
  - How you propose to solve the problem and why it works
THE OVERALL STRUCTURE – STRUCTURE OF A PAPER

• **Results**
  • What you find out about your proposed solution
    • Did it solve the problem? Does it do a better job than other solutions?
  • Want to show why is your work important
• **And**
  • Filler for a nice acronym
• **Discussion**
  • Summarize what it all means
  • Explain why people have to use your proposed method

• These are the main sections of a paper, additional sections will be mentioned later
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THE OVERALL STRUCTURE – INTRODUCTION

• This sets the stage, so take the time required to do it right
• Clearly state what are you investigating/what problem are you solving
• Be crystal clear why the problem is important
• Include what has been done in the past and why these methods haven’t solved the problem
  • This is the literature review
  • Doesn’t have to be exhaustive but has to be thorough
  • If you haven’t covered the most recent and relevant work, the EiC may decide to reject outright – you have to show that you are know what you are talking about
• Kept it relatively short
  • One to one-and-half pages?
THE OVERALL STRUCTURE – METHODS

• Describes how the problem was solved
  • Include enough details so that someone else can implement the method
    • Reproducibility
  • Detailed proofs can be included in appendices or supporting material
  • Clearly define notation and use commonly accepted notation
• Include information on what work was done by others to solve the problem
  • Do not include all the details of what was done by others
  • Do include why you feel their methods don’t solve the problem
• Compare the new method with existing methods (if applicable)
  • Try to understand why one method may be better than the other theoretically or mathematically
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THE OVERALL STRUCTURE – RESULTS

- Report what you have found
- The proposed method should be compared with existing ones
- You are STRONGLY encouraged to include empirical or simulation results to back up theoretical developments
- If using simulated data, provide all models used to generate the data
  - Code can be shared in supporting material
- Show how the methods solve the problem
- If possible include examples using real life data in addition to simulated data
  - Avoid data that is generated to favour one method over another
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THE OVERALL STRUCTURE – DISCUSSION

• Explain what the results mean
• Compare and contrast results obtained by the different methods
• Be honest
  • If your method doesn’t behave well in certain circumstances, report those results as well
  • If other methods don’t behave well because of assumptions made, then mention that as well
• DO NOT state that someone else’s results are wrong unless it can be shown theoretically and empirically
  • The goal is to illustrate your method, not shoot down someone else’s
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THE OVERALL STRUCTURE – ADDITIONAL SECTIONS

• Title
  • Not too long and certainly not boring
  • Needs to be interesting enough to get people to at least read the abstract

• Abstract
  • This is where you have to catch the readers’ attention.
  • What is the problem, why it is important, how you have solved it and what is new

• Conclusions
  • Rehash what was presented
  • Don’t introduce new results
  • It is OK to talk about future work or directions
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THE OVERALL STRUCTURE – ADDITIONAL SECTIONS

• Acknowledgements
  • You should acknowledge the editors and reviewers at a minimum
• References
  • Make sure that they are complete
  • If they are not referred to in the paper, don’t include them
  • DON’T include only your work
• Keywords
  • Keep the list short but to the point
• Make sure that the paper is readable
  • If English (or language of the journal) is not your first language, ask a native speaker to review the paper for typos, grammar, etc.
  • There is nothing more frustrating than having to read a sentence multiple times to understand it because it is poorly written
• The emphasis should be on the statistical methodology, not the statistical program or the organization
• Do not include pages and pages of formulas
  • Proofs belong in an appendix or supplementary material
  • Too many formulas make it hard to read and review
• The structure will hopefully allow you (the author) to connect with the reader (the audience)
• The other stakeholders in the process (the editors, reviewers and publisher) will assess the message, the content and the also structure in a strict process
  • Is the message an important one?
  • Is the content clear, correct and of high quality?
  • Does the structure achieve the connection between author and audience?
I referenced the following material to create this presentation

- How to prepare a manuscript for international Journals by Angel Borja
  - Part 1: Six things to do before writing your manuscript (elsevier.com)
  - Part 2: 11 steps to structuring a science paper editors will take seriously (elsevier.com)
  - Part 3: Writing the first draft of your science paper — some dos and don’ts (elsevier.com)