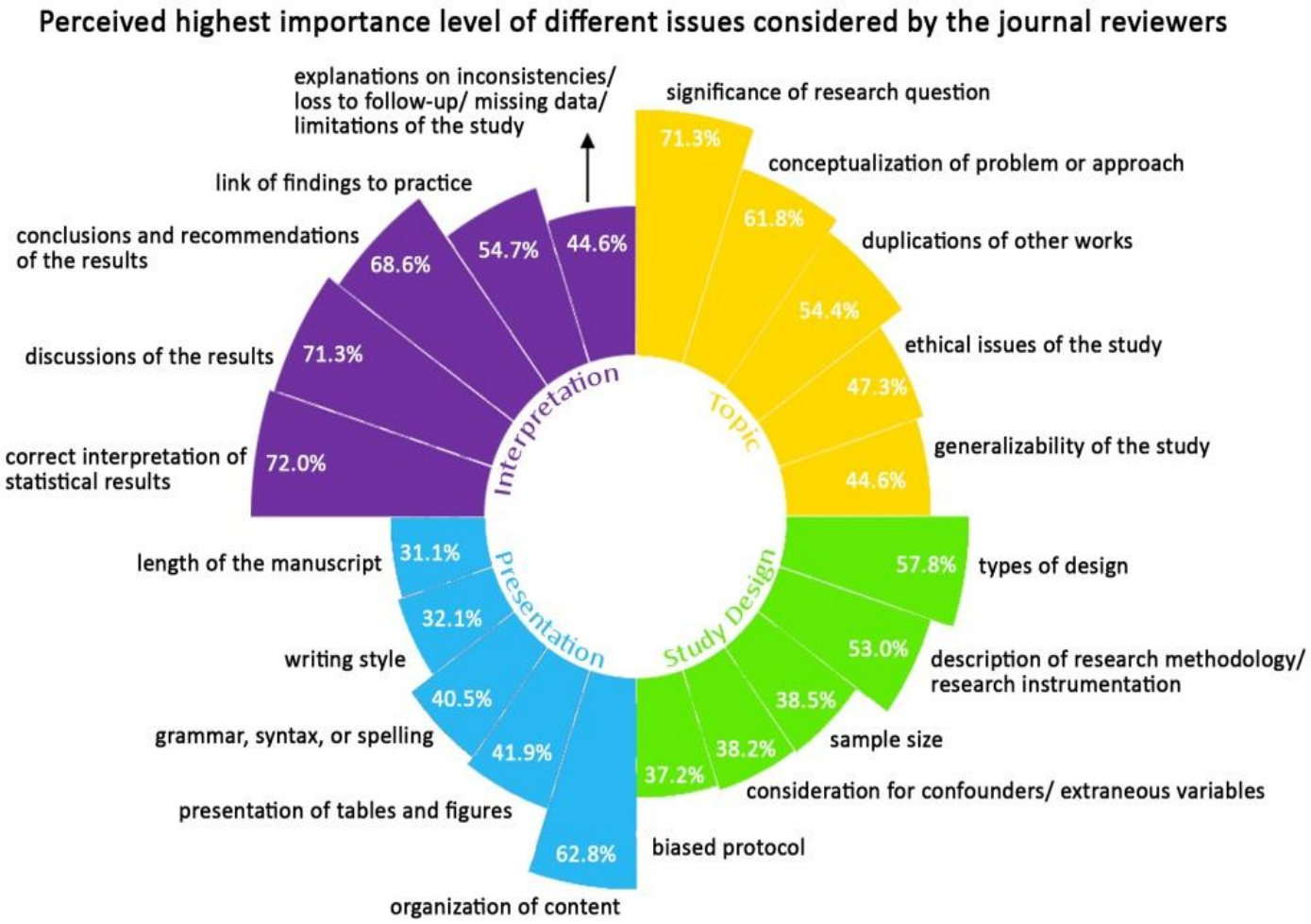
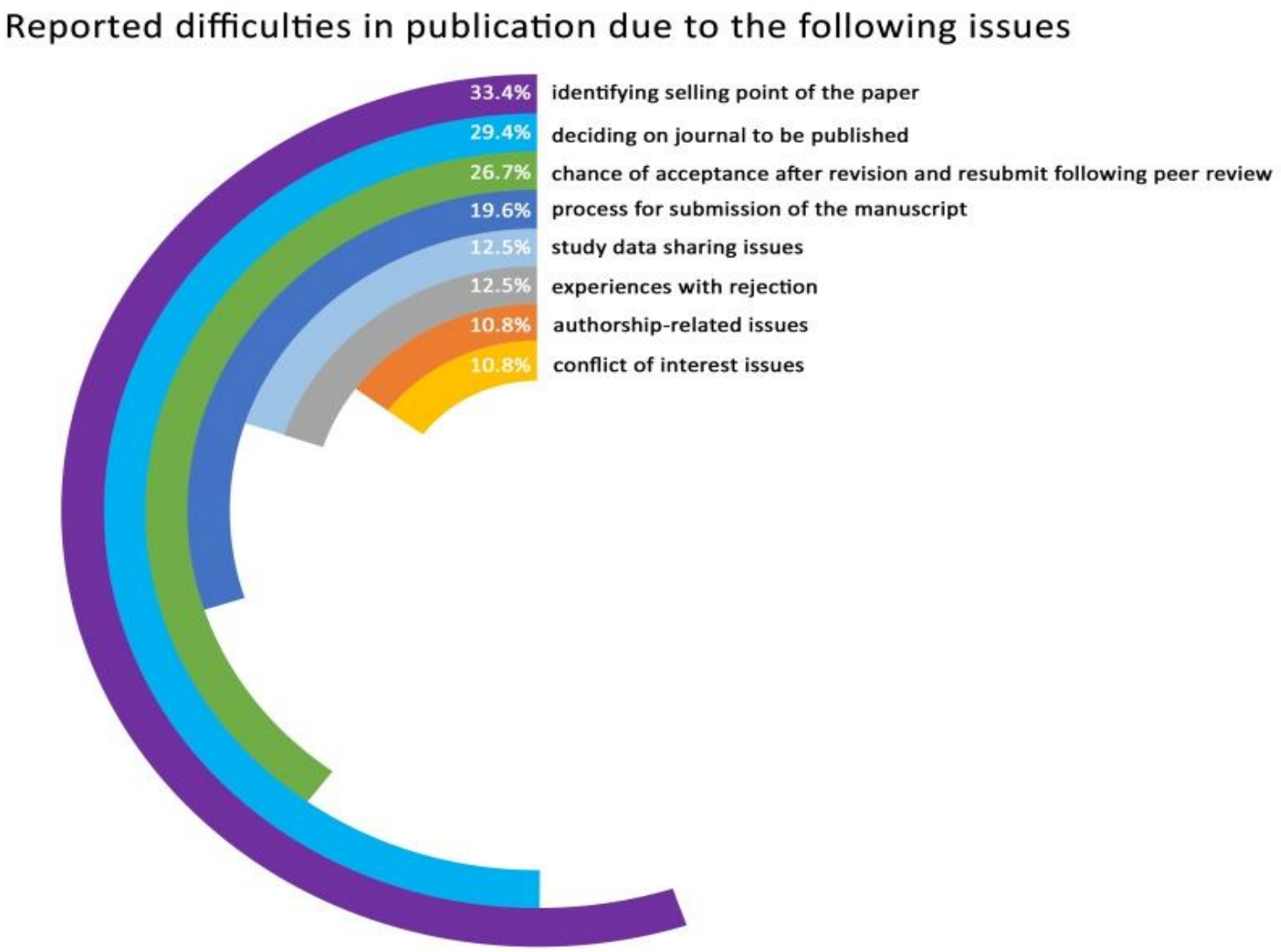
Fundamentals of Manuscript & Proposal Preparation

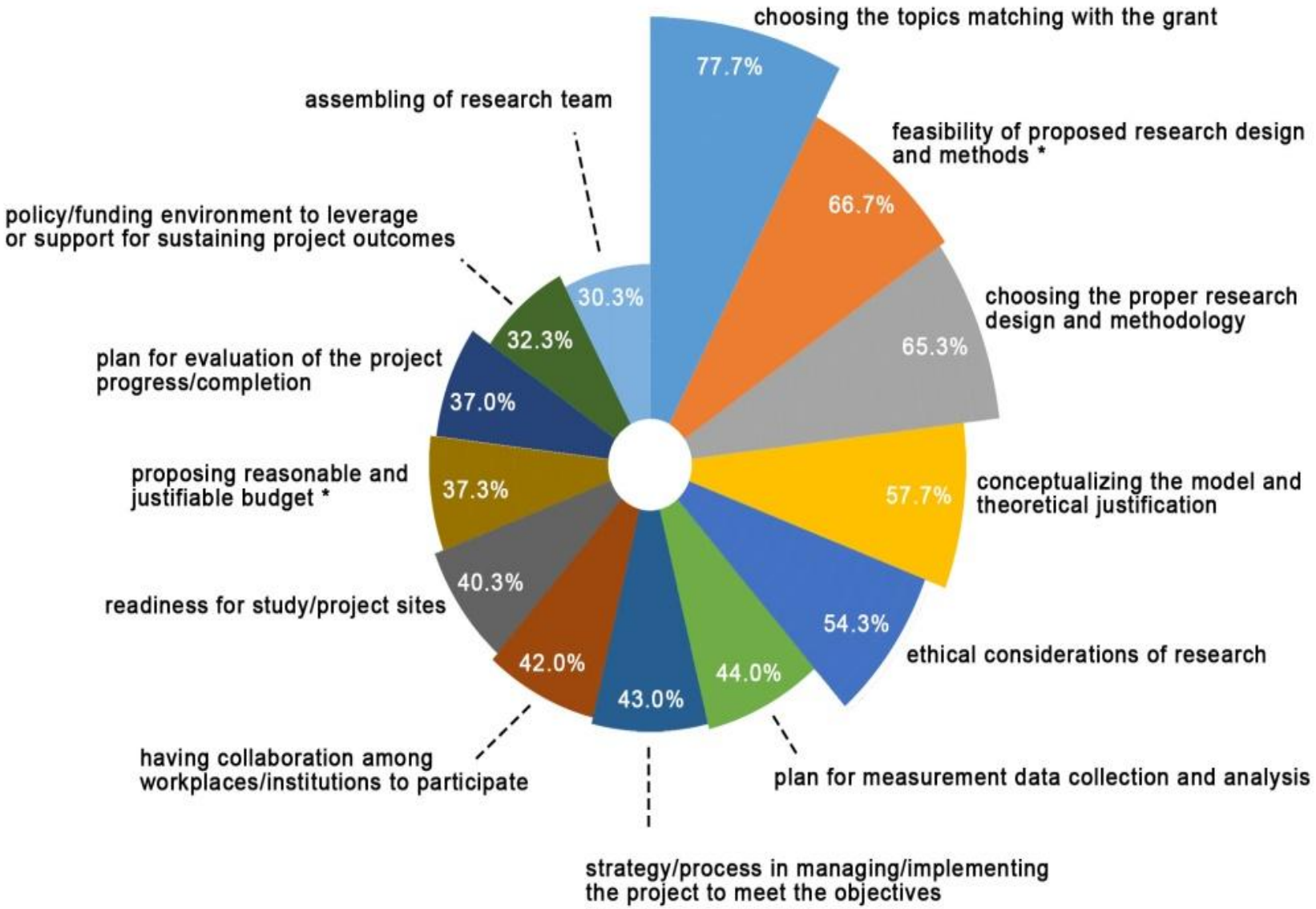
Perceived highest importance level of different issues considered by the journal reviewers



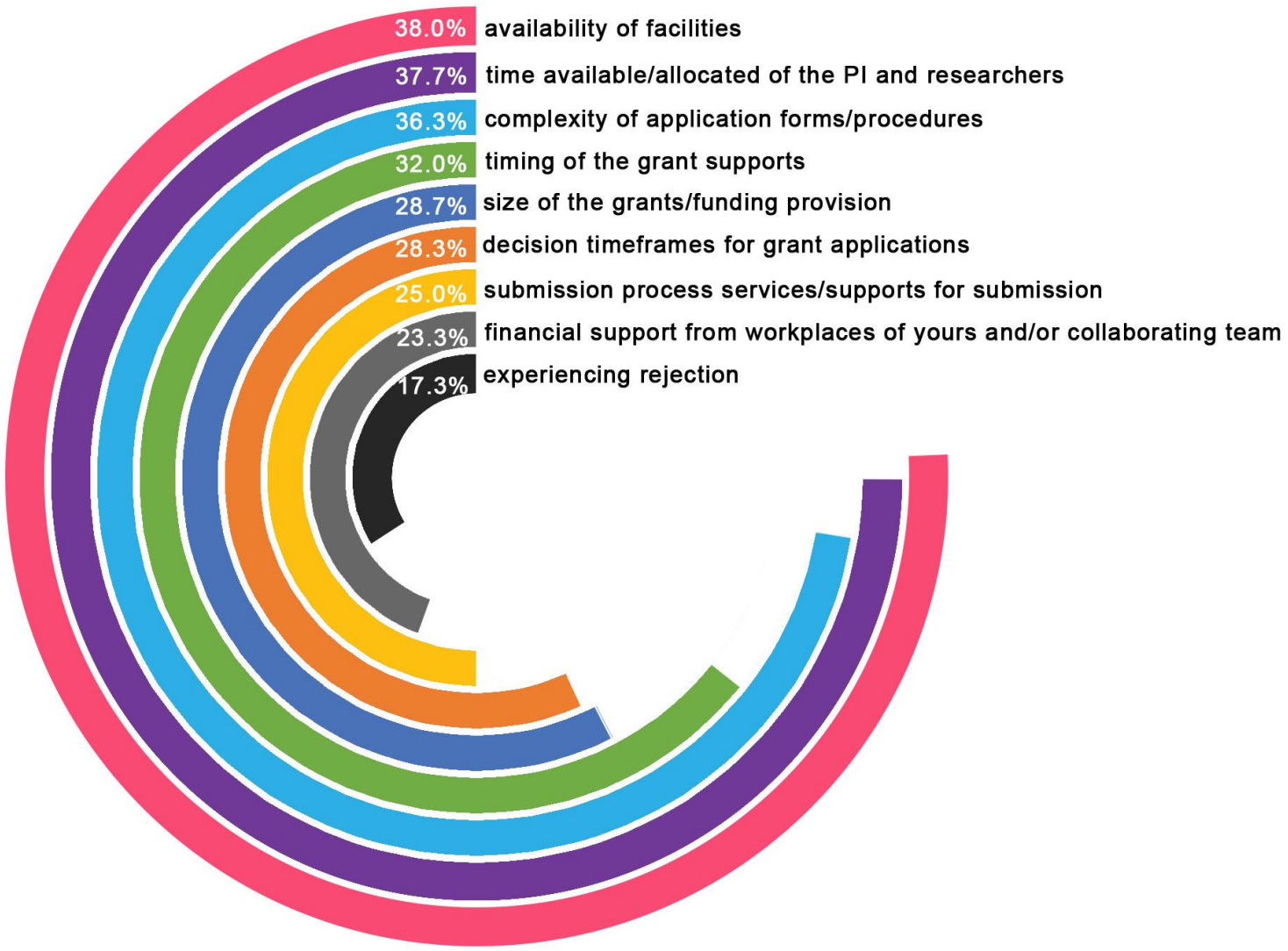
Reported difficulties and concerns for manuscript submission



Researchers' perceptions regarding the most important issues in grant applications



Difficulties and concerns experienced while preparing a proposal



Effective Scientific Research Proposal

10 characteristics of an effective scientific research proposal

- Aims to advance science and benefit human knowledge, society, or the environment
- Has focused and measurable aims
- Has a sample whose results can be generalized (women, minorities, etc., should be adequately represented in the sample if necessary)
- Uses methods that are sufficiently rigorous, well developed, and appropriate to achieve the aims of the study
- Takes into consideration potential problems that can arise during the study and proposes alternatives to overcome these problems
- Is conducted by researchers with adequate training, experience, and expertise
- Is conducted in an environment that is likely to make it successful (e.g., with adequate institutional support or access to necessary facilities)
- Requires time and money commensurate to the tasks to be carried out
- Complies with ethical standards and is approved by an appropriate ethics committee
- Has a principal investigator who is independent and can lead others[1, 3, 4]

- ***Good Science***
- ***Focused & Measurable Aims***
- ***Well-developed methodology***

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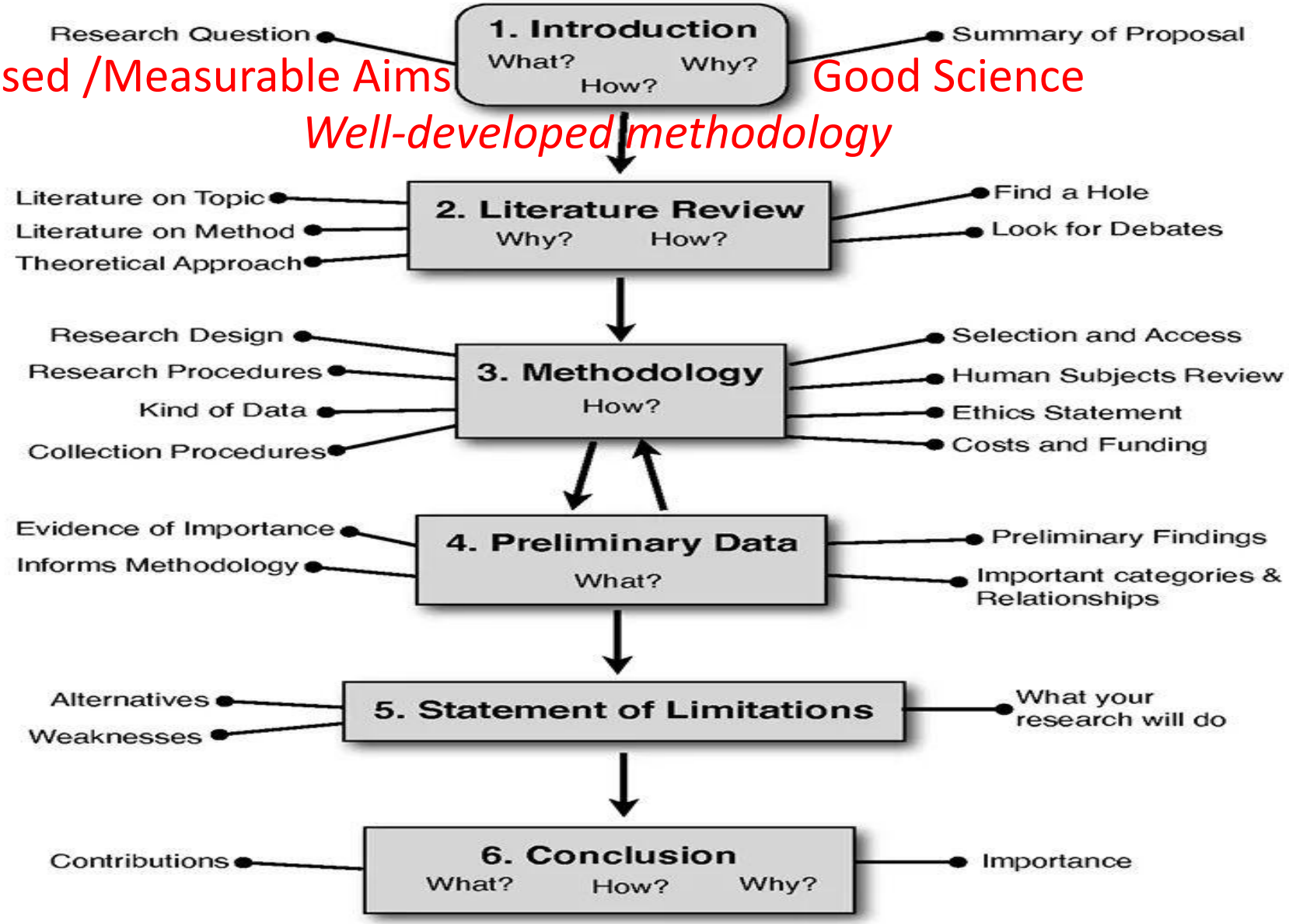
https://www.slideshare.net/LesleySmith40/successful-research-ppt

Research Proposal Flow Chart



http://mjiit.utm.my/hafizal-yahaya/tips-for-writing-your-research-proposal/fb_img_1460806017455/

EwAXoECAUQBA#imgrc=ITtlQEC1IUjZgmM:

Effective Scientific Research Proposal

Before you start writing your proposal

a. Learn as much about the funding agency as possible

- Even a perfectly written proposal outlining an impeccable study design is likely to be rejected if the writer has not taken the trouble to ascertain the mission and objectives of the funding agency.
- Grant committees look at the relevance of the research to the agency's mission
- Think of the agency as your partner in research, with concerns and goals that are similar to your own.

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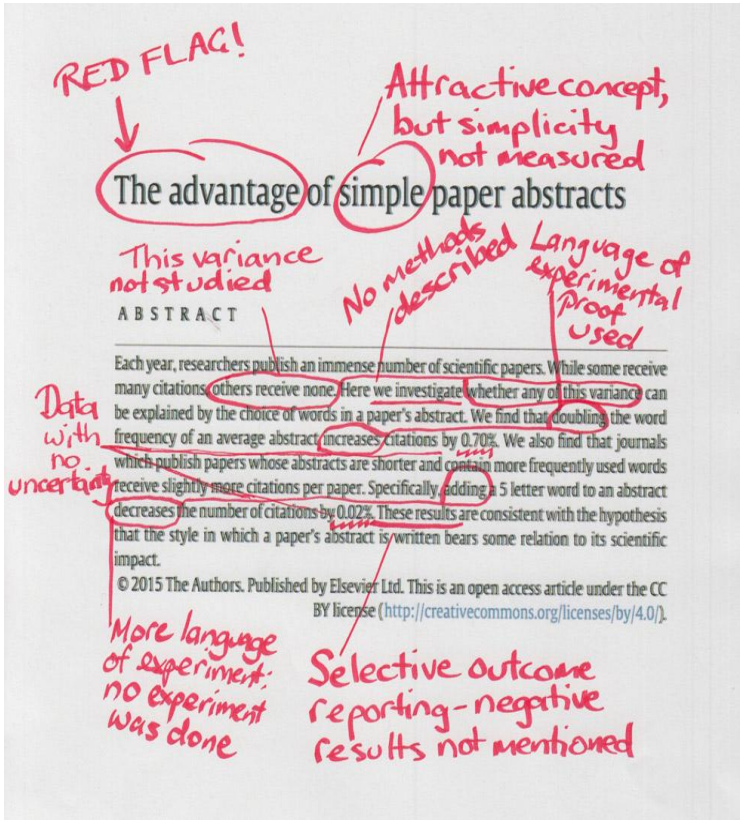
https://www.123rf.com/clipart-vector/funding.html?sti=lvbv96pxwohb3dst22|

https://twitter.com/ZOLLaeds/status/885528814700437504

Effective Scientific Research Proposal

Before you start writing your proposal

b. Understand your target audience



- Proposals are often read by informed laypersons and researchers from other disciplines rather than subject specialists.
- Avoid jargon and subject-specific acronyms.
- A good practice is to check the details of the review committee, usually provided on the website of the funding agency; this will help you determine what aspects of your subject should be explained in detail.

c. Go through the sponsor's guidelines for proposals

https://blogs.plos.org/absolutely-maybe/2016/03/17/how-to-spot-research-spin-the-case-of-the-not-so-simple-abstract/

Effective Scientific Research Proposal

Parts of a grant proposal

Abstract

Like in a research paper, the abstract is the first thing the funding agency will read. It may be the only part read to decide whether to assign the proposal to reviewers.

Therefore, it is important that the abstract:

what to do in your first sentence..

- ***be short***
- ***tell clearly what the proposal is about***
- ***be definite, straightforward statements***
- ***answer the question "so what?"***
- ***want to read on***

- is comprehensible to non-specialists
- serves as a concise summary, highlighting all important aspects of the study
- clearly indicates the nature of the problem, the need for research on it, hypotheses to be tested and expected outcomes, approaches to be used, and the significance or novelty of the study

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https://blog.webshop.elsevier.com/tips-for-writing/the-sentence-not-to-start-your-paper-with/

Effective Scientific Research Proposal

Introduction

This section can serve as the cornerstone of the entire grant proposal; therefore, it should

- highlight the practical applicability and importance of your research
- explicitly state the specific aims or hypotheses of the study
- thoroughly review the existing relevant literature1 and explain how your study will fill gaps, correct errors, or resolve controversies.

Focus on 4 points …

- **Establish the importance of the topic**
- **Discuss current/previous work in the field**
- **Identify the problem and explain the approach taken to address it**
- **Clearly describe the present proposal aims**

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https://www.enago.com/academy/top-three-tips-for-writing-a-good-introduction/

Effective Scientific Research Proposal

Research design and methods

This section is the basis on which reviewers judge whether your proposed study will produce the results it promises. In this section, you should aim to

- provide a detailed schedule of the proposed work, showing when each important task will be commenced and completed, in order to show that the time required is feasible
- describe the study population and explain how participants will be recruited, detailing your inclusion and exclusion criteria, so that your sample does not appear biased.

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Effective Scientific Research Proposal

Research design and methods

In this section, you should aim to

- provide details on incentives for participation, randomization, sample size, power calculations, etc.
- describe the data collection methods to be used, and provide citations/ manufacturer details to show that the techniques/instruments to be used are valid and reliable
- show that your methods are ethically sound, supplemented with approval from an appropriate ethics board

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Effective Scientific Research Proposal

Preliminary studies

Before submitting your proposal, you should have already conducted some preliminary or pilot studies. Providing data from these studies is extremely important, to show that

- you have expertise in the field and know how to conduct research
- adequate groundwork has been done
- the project is feasible, as indicated by your preliminary results
- the hypotheses have merit
- you have adequate institutional support

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Effective Scientific Research Proposal

Research design and methods

In this section, you should aim to

- list all variables and mention how they will be used in the analyses
- describe how you will manage the data and ensure its quality (e.g., avoiding duplication, cross-checking for accuracy)
- provide details on the statistical methods and software to be used.

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Effective Scientific Research Proposal

Limitations

You should thoroughly explain any realistic limitations of your study, to ensure that your project is not criticized as over-ambitious. It is best that you "assume the point of view of the reviewers and anticipate what they might ask and what they will want to know."

Budget

While preparing this, remember to check the current prices of the equipment and supplies you need (prices may vary even from week to week) go over your methods and account for every item listed there

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Effective Scientific Research Proposal

Personnel

you should

- provide details to show that the researcher(s) possesses expertise in the field (e.g., a list of all previous studies or the most recent or relevant among them, h-index and other citation metrics)
- describe how each research assistant will contribute in recruiting participants, collecting data, etc., and provide evidence that all personnel are trained for these purposes.

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Effective Scientific Research Proposal

Research environment and institutional resources

Convince the reviewer that your university or institute can aid the success of your study, by highlighting, for example, that

- it has faculty and staff who are experts in the concerned or related fields
- it offers unique and adequate facilities, like laboratory space and library facilities
- it has experienced and qualified research assistants
- it has a history of credible and high-value research
- it is already providing part of the funds needed for your study

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Effective Scientific Research Proposal

Items you can include as appendices

- A sample of the questionnaire or instrument you are planning to use
- Supporting letters from your Department Head or Dean, guaranteeing that sufficient time and resources will be provided to you for your research
- Letters of recommendation from colleagues, supervisors, or former mentors, mentioning specific examples of achievements and personal traits ideal for research

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Why Academics Have a Hard Time Writing Good Grant Proposals

Academic Writing versus Grant Writing: Contrasting Perspectives

Academic Writing	Grant Writing
Scholarly pursuit:	**Sponsor goals:**
Individual passion	*Service attitude*
Past oriented:	**Future oriented:**
Work that has been done	*Work that should be done*
Theme-centered:	**Project-centered:**
Theory and thesis	*Objectives and activities*
Expository rhetoric:	**Persuasive rhetoric:**
Explaining to reader	*"Selling" the reader*
Impersonal tone:	**Personal tone:**
Objective, dispassionate	*Conveys excitement*
Individualistic:	**Team-focused:**
Primarily a solo activity	*Feedback needed*
Few length constraints:	**Strict length constraints:**
Verbosity rewarded	*Brevity rewarded*
Specialized terminology:	**Accessible language:**
"Insider jargon"	*Easily understood*

Robert Porter, Ph. D., Program Development Manager, Research Division, Virginia Tech

NIH core review criteria for research project grant proposals

Review Criterion	Key Question
Significance	Why does the research matter?
Innovation	How is the research new?
Approach	How will the research be done?
Environment	In what context will the research be done (e.g., facilities, resources, equipment, and institutional support)?
Investigator	What is special about the people doing the research?
Overall Impact[b]	What is the return on investment?

NIH, National Institutes of Health.

Holly J. Falk-Krzesinski, et.al., J Res Adm. 2015 ; 46(2): 79–94.

Eight key questions considered by reviewers of research grant proposals and the associated review criteria terms used by 10 US federal funding agencies

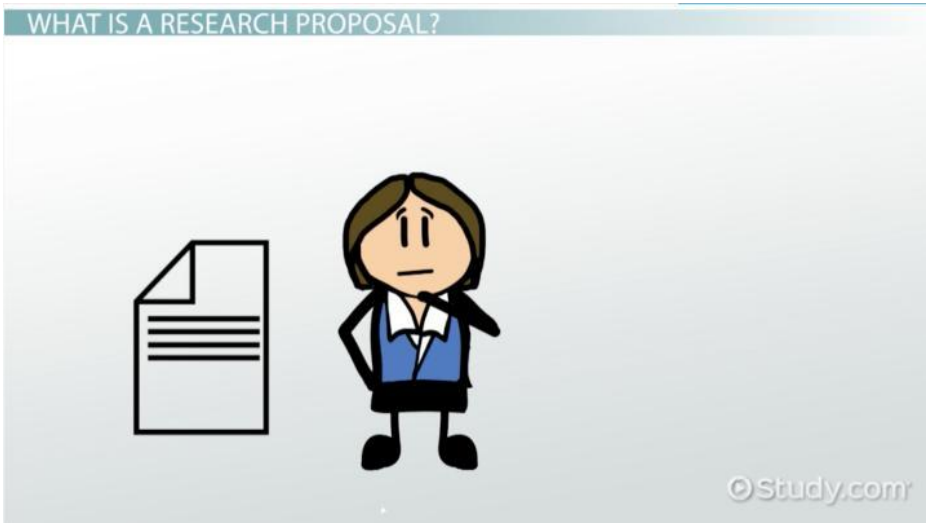
Key Question	Review Criteria Terms
Why does it matter?	Significance Importance
How is it new?	Innovation Novelty Creativity
How will it be done?	Approach Plan Methodology Objectives Aims
In what context will it be done?	Environment Resources Populations Facilities
What is special about the people involved?	Investigators Organization People Researchers Personnel Partners Collaborators Staff
What is the return on investment?	Impact Value Relevance
How effectively will the financial resources be managed?	Budget
How will success be determined?	Evaluation Assessment

Holly J. Falk-Krzesinski, et.al., J Res Adm. 2015 ; 46(2): 79–94.

Effective Scientific Research Proposal

Conclusion

- Writing a good proposal is not easy.
- However, a well-crafted proposal will not only provide the funding you require, but also make you better prepared for the study itself.



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https://study.com/academy/lesson/what-is-a-research-proposal-components-examples.html

Good Luck


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คนที่ทำผิดตลอด
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