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PhD Applications  
Graduate Studies in STEM



# Outline

- Independent PhD vs. Joining a Project
- Choosing a Supervisor
- What is a Research Proposal?
- PhD Proposals
- Questions



# Independent PhD vs Joining a Project

- If you are considering a PhD, there may be several options available to you:
  - You may have opportunities to apply for a funded PhD where you join an existing project at a university (here, your application looks similar to a job application).
  - Some universities allow you to design your own research project (here, the research proposal will form a central part of your PhD application).



# Choosing a Supervisor

- **Area of Expertise:**
  - Check their current research
  - Check if it aligns to your interests
  - Be proactive but also flexible
- **Personality Check:**
  - Care is more important than prestige
  - Look for qualities like Kindness, empathy, etc.
  - A good supervisor says all the right things
- **Talk to Socially Relevant Others:**
  - Talk to current students
  - Talk to past students



# Choosing a Supervisor

- **Compatibility and Expectations:**
  - What common ground have you got?
  - What expectations do you have?
  - What expectations do they have?
- **Consider the Entire Experience:**
  - Your PhD supervisor is only one—albeit large—piece of your PhD puzzle
  - Take other factors into account like work-life balance, environment, etc.
- **Be Unique:**
  - Don't compare yourself with other students
  - There is no standard formula
- **Listen to your Instincts:**
  - You have already completed your masters
  - Listen to your internal dialogue



# What is a Research Proposal?

- A **research proposal** is a document that provides a detailed description of the intended program.
- It is like an outline of the entire research process that gives a reader a summary of the information discussed in a project.
- The objective in writing a proposal is to describe what you will do, why it should be done, how you will do it and what you expect will result.



# PhD Proposals – Basic Components

- Title
- Abstract
- Introduction
- Review of Literature
- Aims
- Objectives
- Questions and/ or Hypotheses
- Methodology
- Plan for Analysis of Results
- Bibliographic References
- Gantt Chart/ Timetable
- Budget
- Annexes



# PhD Proposals

- **Title of the Research**
  - It should be concise, descriptive, informative and catchy.
  - Titles should clearly indicate the independent and dependent variables.
  - The title provides the 'key words' for the classification and indexing of the project.
  - It is important to specify what population or universe will be investigated.
- **Abstract**
  - It is a brief summary of approximately 300 words.
  - It should summarize all the central elements of the protocol. For e.g. the rationale, objectives, methods, populations, time frame, and expected outcomes.
- **Introduction**
  - The introduction provides the readers with the background information.
  - It should have: topic area, research question, significance to knowledge.





# PhD Proposals

- **Review of Literature**

- In this section, **what is already known** about the topic is written including the lacunae.
- You do not need to report on every published study in the area of your research topic.
- Choose those studies which are **most relevant and most important**.
- Reviews of the literature are **not summaries**, they are **arguments** (that there is a gap that needs filling; that you have sound reasons for believing your hypotheses are likely to be true; that your methods have been well thought through in relation to your research goals).
- A literature review should:
  - Convince the reader that the **research area is significant/ important/ interesting**
  - Convince the reader that we **shouldn't be (completely) satisfied** with the existing literature on the topic
  - Convince the reader that your research **will fill some important or interesting gap** or address some **important limitation or deficiency**
  - Explain and **justify your research hypotheses/ ideas**
  - Convince the reader that your **research methods are well thought through**



# PhD Proposals

- **Aim**

- The aim is about what you hope to do, your overall intention in the project.
- It's what you want to know.
- An aim is therefore generally broad.

- **Objectives**

- The objectives are the specific steps you will take to achieve your aim.
- The aim is the what of the research and the objective is the how.
- Research objectives are the goals to be achieved by conducting the research.
- Objectives should be:
  - Logical and coherent
  - Feasible
  - Realistic, considering local conditions
  - Defined in operational terms that can be measured
  - Phrased to clearly meet the purpose of the study (relevant)



# PhD Proposals

- **Questions and/ or Hypotheses**

- A hypothesis can be defined as a tentative prediction or explanation of the relationship between two or more variables.
- Unambiguous prediction of expected outcomes.

- **Methodology**

- The methodology explains the procedures that will be used to achieve the objectives. It covers:
  - Approach to the question
  - Research design
  - Research subjects
  - Inclusion or exclusion criteria
  - Sampling procedure
  - Controls or comparison groups
  - Data needs
  - Analytic techniques
  - Plan for interpreting results
  - Ethical issues



# PhD Proposals

- **Gantt Chart/ Timetable**

- A Gantt Chart is an overview of tasks/ proposed activities and a time frame for the same.
- You put weeks, days or months at one side, and the tasks at the other.
- You draw fat lines to indicate the period the task will be performed to give a timeline for your research study.

- **Budget**

- The budget translates project activities into monetary terms.
- A proposal budget is with item wise/ activity wise breakdown and justification for the same.
- Indicate how will the study be financed.



# PhD Proposals

- **Bibliographic References**

- References should be written in Vancouver Style.
- Citing references:
  - Number references consecutively throughout the body of the text in the order in which they are first mentioned.
  - Identify references in text, tables and legends by numerals in parenthesis e.g. (1), (2, 3) or (3-6).
  - Some journals require references to be indicated in superscript which makes typing more difficult.
  - DO NOT include references in your abstract.

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