How to Write a Good Research Proposal

by

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What is a research proposal?

A research proposal is...

- A document that contains details about a scientific investigation to be carried out (i.e., not started yet)

- It contains details about:
  - The problem to be studied
  - How the investigation will be conducted
  - Expected results and contribution
  - Work schedule / Time frame
  - Budget (for those seeking funds)
Why do we need a research proposal?

- A blueprint (plan) of the research program
- It forces us to contemplate in detail about
  - What we want to research
  - Why we want to do the research
  - How to do the research
  - What do we need to do the research
  - Are we able to do the research
Preparation

- Think about it
- Generate ideas
- Background reading

Ask yourself

- Am I familiar with other research that has been conducted in areas related to my research project?
- Do I have a clear understanding of the steps that I will use in conducting my research?
- Do I have the ability to go through each step?
Main purpose of a research proposal

- It is to show that
  - the problem you propose to investigate is significant enough to warrant the investigation,
  - the method you plan to use is suitable and feasible, and
  - the results are likely to prove fruitful and will make an original [or significant] contribution.
  - In short, what you are answering is 'will it work?'

- To organise your ideas
- To convince your audience
- To meet ethical requirements
Main purpose of a research proposal

To make the reader to understand:

- What you are going to do
- Rational of the research
- Objectives of the research
- Methodology
- Expected output
Key ingredients of a research proposal

- Title
- Background to the research
- Statement of problem
- Objectives of research
- Literature review
- Methodology
- Work schedule
Tips

Title - likely to change during the process
Background - context within the literature
Research questions and objectives - what you seek to achieve
Method - can be in two parts: research design and data collection
Timescale and Resources - (finance, data access, equipment)
References - include some key literature sources
Title

- A good proposal has a good title
- It is the first thing that help the reader begin to understand the nature of work
  - Focused
  - Highlighting the main contribution of the research work
  - Use the keywords
  - Avoid ambiguous or confusing word
Title

- Good titles identify the field(s) of research and indicate the kind of results to be obtained

- Avoid
  - Too long titles
  - Too general or vague titles, e.g., “Effects of fertilizers on crops”
Tips

• Try the colon trick:
• A colon makes a title short, snappy, easy to say

Some examples are:

• Impact of Coastal Inundation: Case of XXX Island
• Small and Medium Enterprises in China: An analysis of funding risks, risk mitigants and sustainable development
• Inter-state River Water Disputes in China: Institutions and mechanisms
• Negotiating Informality: Changing face of the footpaths in South Africa, 1994 – 2014
• Coffee House to Barista: A study of cultural change
• Un-gendering Sports: Towards a revaluation of the female athletes in India
Problem Statement

- The key effort is to make the reviewers/readers understand
  - What is the problem
  - Why is the problem important
- Problem statement answers one primary question: “Why do this project?”
  - The emphasis is on the “why”
- To answer this question, proposal writers must
  - (1) define the problem and
  - (2) document its existence
Problem Statement

- Your statement of the problem should quickly:
  - summarize the problem from the vantage point of the readers,
  - document its frequency and severity,
  - show your familiarity with prior research or work on the problem, and
  - justify why this problem should be investigated

- Do not assume that everyone sees the problem as clearly as you do
  - even if the problem is obvious, your readers want to know how clearly you can state it
Problem Statement

- Start with a general statement of the problem or issues
- Make sure the problem is restricted in scope
- Make sure the context of the problem is clear
- Cite the references from which the problem was stated previously.
- Provide justification for the research to be conducted
- Motivates to conduct the proposed research
- Highlight the problems/demerits of the available techniques
Research Questions

Does your proposal:

1. Specify the conditions you wish to change?
2. Define the gaps in existing programs, services, or knowledge?
3. Include appropriate statistical data about the frequency and severity of the problem?
4. Clarify what will happen if nothing is done about this problem?
Research Questions

5. State the problem in terms of human needs, not your opportunities?
6. Cite pertinent theoretical literature, research findings, or ongoing studies?
7. Convey the focus of your project early in the narrative?
8. Point out the relationship of your project to a larger set of problems or issues?
Research questions

- Research questions would guide the proposed research into the perspective of the other research.
- The questions serve to establish the link between the proposed research with previous research.
- The research questions should show clearly the relationship of the proposed research with the field of study.
Research questions

- Be specific enough that operational definitions may be formulated later or the methodology, independent and dependent variables may be identified.
- Make sure the research questions provide a framework for reporting the results and discussion later.
- Is it clear to the reader how the research questions arise from the issues and findings reported in the problem statement and later in the literature review?
Research questions

A good research question:-

- Involves the search for relationships between two or more variables.
- Is well defined and focused on specifics
- Should be able to tell the reader what actually you are looking in particular.
Research questions-examples

Which of these questions cannot be easily or fully researched

A. Do the economies that result from a trash burning plant outweigh or not outweigh its environmental impact?

- *It is researchable.* You'd have to sift through a lot of information, both pro and con, valid and invalid, in order to choose the best information to answer the research question and support your own point of view, but the point is that there is at least enough information to sift through.
Research questions-examples

- B. Does McDonald's or Burger King make a better burger?

- It is not researchable as it is worded, since it has no concrete meaning. What does "better" mean? Better in terms of nutrition? Better tasting? Better value? Fewer calories? Better for making your kids happy? This question could become researchable only if you define its terms.
Select the best research question

a. What marketing strategies does the Coca-Cola company currently apply?

b. What is the Coca-Cola company's future marketing plan?

c. What marketing strategies has the Coca-Cola company used in the past?
Select the best research question

- **Question "a" is the best research question.** Your research to answer this question may include observation of print, television, and radio advertisements as well as research into various current marketing theories and strategies. Both types of research are "do-able," and the question is focused enough to yield a fully-developed research paper.

- **Question "b" is very broad as well as being unresearchable--it's unlikely that Coca-Cola personnel will reveal their marketing plan.**

- **Question "c" may be too broad as well, since "the past" covers a lot of time, especially since the Coca-Cola company was incorporated in 1919.**
Select the best research question

- What impact has deregulation had on the airline industry?

- What percentage of commercial airline crashes were traced to negligent maintenance during the 10 years immediately preceding and following deregulation?

- What impact has deregulation had on commercial airline safety
Select the best research question

- Question "a" is too broad, once you get into the research, since deregulation may have had impact on safety, costs, passenger fees, ability to comply with government regulations, and many other areas of the airline industry, too many to deal with in depth in one research paper.

- Question "b" is too narrow. It can be answered with simple percentages and cannot be developed into a full research paper.

- Question "c" is the best research question. You may use statistics such as question "b" would uncover as you answer question "c," which is focused enough to allow you to research the question in some depth yet broad enough to allow you to consider the various effects of deregulation on airline safety.
Tips

- Choose only one question that deserves special attention
- Will be interesting to larger audience
- Will produce results that will be new

*This is essentially what drives the goal of research; the hypothesis needs to be tested...*
Research objectives

- Objectives describe the purpose of the study
- Must be
  - specific
  - clear
  - logical
  - immediate (have a time frame)
  - concise, and
  - achievable (measurable)
Writing clear research objectives

- Check your examining body’s preferences for stated objectives
- Use a general focus question to achieve precise objectives

Include SMART Personal objectives

- S pecific
- M easurable
- A chievable
- R ealistic
- T imely
Writing clear research objectives

- Use action verbs in objectives such as

<table>
<thead>
<tr>
<th>Anticipate</th>
<th>Construct</th>
<th>Discriminate</th>
<th>Measure</th>
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<tr>
<td>Arrange</td>
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<td>Solve</td>
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<tr>
<td>Conduct</td>
<td>Discover</td>
<td>Increase</td>
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Writing clear research objectives

- May have two sections: general and specific objectives
- Or split study into parts/sections, and for each section a statement of its study objectives
  - But ensure the sections are related to one another to solve or investigate the overall problem
- Hypothesis to be tested
  - Expected results
  - What you expect/believe the results would be
Literature review

- Important to
  - Identify,
  - Evaluate,
  - Interpret,
  - Assimilate,
  - and Summarize all studies relevant to your study

- Impartial review of all studies

- Do not put all past studies into your proposal!
  - Select those really important (and current) studies
Literature review

- Only relevant ones
  - Relevant literature
  - Show what is said
  - Identify gaps
  - Show your proposed contribution

- Interactive sessions to discuss some examples
  - Decide the goal of study
  - Decide the objective of the study
Literature review

- Selecting Sources
  - Select literature that is relevant or closely related to the problem and purpose
  - Emphasize the primary sources
  - Use secondary sources selectively
  - Concentrate on scholarly research articles
  - Discuss your criteria for inclusion of articles
How to write the literature

- The literature should have an introduction, body and conclusion
- The introduction defines the framework of the review, the body that evaluates the literature and the conclusion summarizes the current state of knowledge on the problem
- Organize the review by topics or ideas, not by author
- Organize the review logically (least to most relevant – evolution of topic – by key variables)
- Discuss major studies/theories individually and minor studies with similar results or limitation as a group
How to write the literature

- Adequately criticize the design and methodology of important studies so readers can draw their own conclusions.
- Compare and contrast studies.
- Note for conflicting and inconclusive results.
- Explicitly show the relevance of each to the problem statement.
- Summary including a restatement of the relationships between the important variables under consideration and how these relationships are important to the hypothesis proposed in the introduction.
- Identify the gaps in the current techniques that would be filled in by the proposed technique.
- Highlight the novelty of the proposed technique as compared to other existing techniques.
Methodology

- Must related to the research objectives
- Highlight the breadth and depth of research
- Identify variables
- Research design – it would be good to put it into a flow chart
- Data collection plan
- Give a detailed sampling plan – the target population characteristics, specific sampling plan, target sample size
Methodology

- Lab analysis methodology
  - Cite reference; do not elaborate on commonly used methods
- Site location and its general characteristics
- Experimental design and layout
  - Ensure robustness of statistical analyses
- Statistical methods for data analysis
- Equipment and software needed
Methodology

Data collection
- When will it begin and end
- Frequency of data collection
- What and how will be the data be collected
  - Type of data to be collected
- How much data are needed
Instrument

- Describe the instruments will be used to gather data (tests, techniques, surveys, etc)
- Provide reliability and validity information to show techniques are valid for the study
- Describe how the variables will be measured
- Provide justification for selection of instruments based on theory, research question, subject characteristics, etc.
- Provide published reliability of instrument and plan to establish reliability
Procedure

- Describe how the study will be conducted
- When, how, where and by whom the data will be collected
- Describe the design of the test will be conducted or statistical test will be selected in this section.
Anticipated Results

- Describe your anticipated results based on the literature review and theory based
- Write your conclusions if your research questions would be supported
- Write your tentative conclusions if your research questions would not be supported
Reasons of research proposal failure

- The problem is of insufficient importance
- Purpose or demonstrated need is vague
- Problem is more complex than the propose realizes
- Research is based on hypothesis that is doubtful or unsound
- Proposed research based on conclusions that may be unwarranted
Reasons of research proposal failure

- Assumptions are questionable; evidence for procedures is questionable
- Approach is not rigorous enough, too naïve, too uncritical.
- Approach is not objective enough
- Validity is questionable, criterion for evaluation are weak or missing
- Approach is poorly thought out; methods poorly demonstrated
Reasons of research proposal failure

- Application is poorly prepared or poorly formulated
- Proposal is not explicit enough, lack of details, too vague or too general
- Rationale is poorly presented, logical processes not followed
- Methods or procedures unsuited to stated objectives
Reasons of research proposal failure

- The design is too ambitious or otherwise inappropriate
- Some administrative or practical problems are unsolved
- Unethical or hazardous procedure will be used
- The procedure is not well enough organized, coordinated or planned
Reasons of research proposal failure

- Some problems are not realized or dealt with adequately
- The overall design is unsound or some techniques are unrealistic
- The results will be confusing, difficult to interpret or meaningless
- Results from previous research are inadequate
- Proposer’s knowledge or judgment of the scientific literature is poor
Finally....

- The proposal can be used as first few chapters in the thesis
- Change the tense from future tense to past tense and then make any additions or changes so that the methodology section truly reflects what has been conducted
Work schedule

- Describes the time table for your work
  - When you will begin and end each part of your study
- Create a table or Gantt chart to depict your schedule

| ACTIVITIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Activity 1 |     |     |     | X   | X   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Activity 2 |     |     |     |     |     |     |     | X   | X   | X   | X   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Activity 3 |     |     |     |     |     | X   | X   | X   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| Activity 4 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | X   | X   | X   | X   | X   | X   | X   | X   | X   |
| Activity 5 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | X   | X   | X   |
References

- Choose and follow a specific reference format

- Use current/latest references (after year 2004)
  - Avoid old references unless they are key references or key studies
Cleaning up your research proposal

- Check your proposal’s spelling and grammar
- Brevity is important
  - Your proposal is not a thesis or a journal research paper
  - Highlight important issues, no need to put all information into the proposal
- Number of pages?
  - Check with what is required (including format of proposal)
  - Usually only ? pages
Final Steps

- Use each day from today to write the proposal
- Sleep on draft, then re-read, and edit it
- Think, think and think…
- Write, read, re-write, re-read…
- Make final revisions
- Get approvals from peers
- Fill up form with immense care
- Keep to the deadline and submit the Application Form on time
THANK YOU

Any questions?