Chapter 13
Writing a Research Proposal

If one of the requirements for this class is to write a research proposal, then you have come to the right place. This chapter will lead you through the process you need to take to write a research proposal. Even if you are not required to write a proposal for class, stick around anyway. What you learn here will be helpful in your research endeavors. You will learn what distinguishes acceptable proposals from unacceptable ones. You will also learn the importance of framing a question in a clear, logical manner so that it is easier to answer. In Chapter 3, there was a ton of information about reviewing the literature—both on and off line—an important part of preparing any research proposal. If you need to, review that now.

Writing a proposal is not an easy task for anyone, and it may be especially difficult if you have not written one before or if you have not done much writing. The job takes diligence, commitment, and hard work, but all the hard work is well worth it. You will end up with a product of which you can be proud, and that is only the beginning. If you actually follow through and complete the proposed research, you will be making a significant contribution to your field. With these words of encouragement, the following are the major steps to follow in the writing of a proposal, beginning with what a proposal looks like.

These, and thousands more like them, all about writing, funding, creating, and seeing through to the research stage of research proposals, are available in your library and online. Spend some time browsing and reading these before you begin serious writing—it will be well worth your while.

The Format of a Research Proposal

Knowing how to organize and present a proposal is an important part of the research craft. The very act of putting thoughts down on paper will help you clarify your research interests and ensure that you are saying what you mean. Remember the fellow on the television commercial who said, “Pay me now or pay me later”? The more work and thought you put into your proposal, the easier it will be to complete the research later. In fact, many supervising faculty suggest that a proposal’s first two or three chapters be actually the same as the entire finished thesis or dissertation—putting you way ahead of the game.

Research Matters

Unlike the previous chapters, the content of this chapter’s Research matters box does not focus so much on research that has been done using a particular method or assessment tool, but rather, other resources that you might find helpful in writing a research proposal. Here are three favorites.


The following is a basic outline of what should be contained in a research proposal and a few comments on each of these sections. Keep in mind that proposals can be organized differently and, whatever you do, be sure that your professor approves of your outline before you start writing.

I. Introduction
   A. Problem statement
   B. Rationale for the research
      1. Statement of the research objectives
   C. Hypothesis
   D. Definitions of terms
   E. Summary, including a restatement of the problem

II. Review of the relevant literature (the more complete it is, the better)
   A. Importance of the question being asked
   B. Current status of the topic
   C. Relationship between the literature and the problem statement
Writing a Research Proposal

D. 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

III. Method
A. Participants (including a description and selection procedures)
B. Research design
C. Data collection plans
  1. Operational definition of all variables
  2. Reliability and validity of instruments
  3. Results of pilot studies
D. Proposed analysis of the data
E. Results of the data

IV. Implications and limitations

V. Appendices
A. Copies of instruments that will be used
B. Results of pilot studies (actual data)
C. Institutional Review Board (IRB) application and letter of approval
D. Participant permission form
E. Time line
F. Actual data collected

If you have looked at someone else’s thesis or dissertation, you might notice that this outline is organized around the same general sequence of chapter titles—introduction, review of literature, methodology, results, and discussion. Because this is only a proposal, the last two sections cannot present the analysis of the real data or discuss the findings. Instead, the proposal simply talks about the implications and limitations of the study, and the last part (V) contains all the important appendices.

The first three sections of the finished proposal form a guideline about what the proposal should contain: introduction, review of literature, and method. The rest of the material (implications and such) should be included at your own discretion and based on the wishes of your adviser or professor. Keep in mind that completing the first three sections is a lot of work. However, you will have to gather that information anyway, and doing it before you collect your data will give you more confidence in conducting your research as well as a very good start and a terrific road map as to where you are going with your research.

Appearance

Although the words in your proposal are important, the appearance of your proposal is also important. What you say is more important than how you say it, but there is a good deal of truth to Marshall McLuhan’s statement that the medium is the message. Here are some simple, straightforward tips about proposal preparation. If you have any doubts about presentation (and if you don’t have any other class guidelines), follow the guidelines set forth in the sixth edition of the Publication Manual of American Psychological Association (APA 2009), which is discussed and illustrated in Chapter 14.

- All pages should be typed with at least 1-inch margins on top, bottom, left, and right to allow sufficient room for comments.
- All pages should be double-spaced.
- All written materials should be proofread. This does not mean just using a spell checker. These marvels check only your typing skills (to, two, or too?), not your spelling or grammar. So, proofread your paper twice—once for content and once for spelling and grammatical errors. And, it would not be a bad idea to ask a fellow student to read it once.
- The final document should be paper clipped or stapled together, with no fancy covers or bindings (too expensive and unnecessary).
- All pages should be numbered with a running head (all of which is right justified) and a page number.

As for the format of the contents, you cannot go wrong if you follow the example given in Chapter 14, which is written using the APA guidelines for manuscript presentation. There are some differences between what you are reading here and what you will see in Chapter 14, but nothing major. For example, APA guidelines do not require the author’s name on each page because the review for journals is blind. Your professor, however, needs your name on each page.

Evaluating the Studies You Read

As a beginning researcher, you might not be ready to take on the experts and start evaluating and criticizing the work of well-known researchers, right? Wrong! Even if you are relatively naive and inexperienced about the research process, you can still read and critically evaluate research articles. Even the most sophisticated research should be written in a way that is clear and understandable. Finally, even if you cannot answer all the questions listed below to your satisfaction at this point, they provide a great starting place for learning more. As you gain more experience, the answers will appear.

When you begin to go through research articles in preparation for writing a proposal (or just to learn more about the research process), you want to be sure that you can read, understand, and evaluate the content.
So what makes good research? B. W. Hall, A. W. Ward, and C. B. Comer (1988) asked that very question about 128 published research articles. Among a survey of research experts, they found the following shortcomings (in order of appearance) to be the most pressing criticisms. Even though this article is almost 16 years old, the findings are still relevant to any proposal.

- The data collection procedure was not carefully controlled.
- There were weaknesses in the design or plan of the research.
- The limitations of the study were not stated.
- The research design did not address the question being asked by the researcher(s).
- The method of selecting participants was not appropriate.
- The results of the study were not clearly presented.
- The wrong methods were used to analyze the information collected.
- The article was not clearly written.
- The assumptions on which the study was based were unclear.
- The methods used to conduct the study were not clearly described or not described at all.

This is quite a series of pitfalls. To help you avoid the worst of them, you might want to ask the following set of questions about any research article.

Criteria for Judging a Research Study

REVIEW OF PREVIOUS RESEARCH
1. How closely is the literature reviewed in the study related to previous literature?
2. Is the review recent? Are there any outstanding references you know about that were left out?

PROBLEM AND THE PURPOSE
3. Can you understand the statement of the problem?
4. Is the purpose of the study clearly stated?
5. Does the purpose seem to be tied to the literature that is reviewed?
6. Is the objective of the study clearly stated?
7. Is there a conceptual rationale to which the hypotheses are grounded?
8. Is there a rationale for why the study is an important one to do?

HYPOTHESES
9. Are the research hypotheses clearly stated?
10. Are the research hypotheses explicitly stated?
11. Do the hypotheses state a clear association between variables?
12. Are the hypotheses grounded in theory or in a review and presentation of relevant literature?
13. Are the hypotheses testable?

METHOD
14. Are the independent and dependent variables clearly defined?
15. Are the definition and description of the variables complete?
16. Is it clear how the study was conducted?

SAMPLE
17. Was the sample selected in such a way that you think it is representative of the population?
18. Is it clear where the sample came from and how it was selected?
19. How similar are the subjects in the study to those that have been used in other similar studies?

RESULTS AND DISCUSSION
20. Does the author relate the results to the review of the literature?
21. Are the results related to the hypotheses?
22. Is the discussion of the results consistent with the results?
23. Does the discussion provide closure to the initial hypotheses presented by the author?

REFERENCES
24. Is the list of references current?
25. Are the references consistent in their format?
26. Are the references complete?
27. Does the list of references reflect some of the most important reference sources in the field?
28. Does each reference cited in the body of the paper appear in the reference list?

GENERAL COMMENTS ABOUT THE REPORT
29. Is the report clearly written and understandable?
30. Is the language unbiased (nonsexist and relatively culture free)?
31. What are the strengths and weaknesses of the research?
32. What are the primary implications of the research?
33. What would you do to improve the research?
In my class, students are required to answer all 33 of these questions for a research article that reports about an experimental study in their discipline.

Planning the Actual Research

You are well on your way to formulating good, workable hypotheses, and you now know at least how to start reviewing the literature and making sense out of the hundreds of available resources. But what you may not know, especially if you have never participated in any kind of research endeavor, is how much time it will take you to progress from your very first visit to the library to your final examination or submission of the finished research report. That is what you will learn here.

Although you still have plenty to learn about the research process, now is a good time to get a feel for the other activities you will have to undertake in order to complete your research project. It is also helpful to get a sense of how much time these activities might take.

First the activities. Table 13.1 shows an example of a checklist of activities you probably need to complete in order to complete your proposal (or research). The activities are grouped by the general headings previously discussed.

Now for computing how much time the process will take. One effective way to do this is to estimate how much time each individual activity (writing the literature review, collecting data, etc.) will require, using some standard measure, such as days, keeping in mind that sometimes things go

• Just as planned
• Not as well as planned
• Not well at all (which usually is the rule, rather than the exception).

Now take the average of these values. To be more precise, let’s break workdays into 4-hour chunks (for morning and evening) and call each chunk one unit of time. There are then 10 units of time in 1 week. If you enter Table 13.1 as a spreadsheet (using a program such as Excel), you can easily sum the columns as you fiddle and tinker with the amount of necessary time.

For example, let’s look at a search through primary sources (as part of the literature review) and estimate that it will take you

• 4 days, or 8 time units, if things go great
• 6 days, or 12 units, if things do not go exactly as planned
• A whopping 8 days, or 16 units, if things do not go well at all

Once you have these estimates, average them for the activity, and you will have a singular estimate of how long any one activity should take, such as

$$\frac{8 + 12 + 16}{3} = 12 \text{ units}$$

or 6 days, which is about one very full week’s work (if you work on Saturday or Sunday).

If you want to be even more precise, weight the estimates. For example, let’s say that you anticipate having trouble finding a sample, and at best you can expect things to go only okay. Writing the descriptive section, though, should be a snap. You should weight the “not as well as planned” estimate two or three times greater than the others.

These estimates can be computed for all the activities you see in Table 13.1 and then summed to get an estimate for the overall activity. Keep in mind that everything takes longer than you initially think, so be generous, even for your most optimistic estimate.

Selecting a Dependent Variable

You have read at several places in this volume how important it is to select a dependent variable or an outcome measure with a great deal of care. It is the link between all the hard preparation and thinking you have done and the actual behavior you want to measure. Even if you have a terrific idea for a research project and your hypothesis is right on target, a poorly chosen dependent variable will result in disaster.

The following nine items are important to remember when selecting such a variable. Use the following as a checklist when you search through previous studies to find what you need.

• Try to find measures that have been used before. This gives them credibility and allows you to support your choice by citing previous use in other research studies.
• Ensure that the validity of the measure has been established. Simply put, don’t select dependent variables whose validity either has not yet been established or is low. Doing so will raise too many questions about the integrity of your entire study. Remember, you can find out if a test has been shown to be valid through a review of other studies where the test has been used or through an examination of any manuals that accompany the test or assessment tool.
• Ensure that the reliability of the measure has been established. As with validity, reliability is a crucial characteristic of a useful dependent variable.
• If the test requires special training, consider the time and the commitment it will take to learn how to use it. This does not mean simply reading the instructions and practicing the administration of a test. It means
undergoing intense training such as that required for the administration of intelligence tests and several personality scales.

- Be sure you can get a sample of the test before you make any decision about whether you will use it. You might have read about it in a previous study, but you should not make a final decision until you examine its guidelines on the intended testing population, requirements for administration, costs, and so on. You can usually get a sample packet either at no cost or at a minimal cost from the test developer or publisher (although you may need a letter from your adviser because several test companies will not send materials to just anyone who requests it).

- If you will need them, be sure that norms are available. Some tests do not require the use of norms, but if your intention is to compare the performance of different samples with scores from a more general population, you must have something to compare it with. As you will see later, norms are especially important for norm-referenced tests.

- Obtain the latest version of the test. Publishers are always changing test materials, whether it is a re-packaging of the materials or a change in the actual normative or reliability and validity data. Just ask the simple question, “Is this the latest version available?”

- The test needs to be appropriate for the age group with which you are working. If a test measures something at age 10, it does not mean it will be equally reliable and valid at age 20, or even that it will measure the same underlying construct or behavior at that age. Look for other forms of the same test or another test that measures the same construct for the intended age group.

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<th>Table 13.1 A checklist of activities to help you complete your proposal or research.</th>
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• Finally, look for reviews of the test in various journals and reference sources, such as at the Buros Institute (at www.unl.edu, then search “Buros”), which lists thousands of tests on just about everything, and the Mental Measurement Yearbook (14th ed.), which is also published by the Buros Institute. Both these publications contain extensive information about different types of tests including administration procedures, costs, critical reviews of the tests by outside experts, and so on. Examine these critical reviews before you decide to adopt an instrument.

Reviewing a Test

What follows is more about selecting dependent variables (or screening measures for assignment to groups as independent variables). At best, with all things going in your favor, it is difficult to find exactly the test you want to use to diagnose, evaluate, determine effects, use as a placement tool, and so on. The dependent variable you select may not even be a test in the formal sense of the word. But if it is, you need to be concerned about many different characteristics and qualities of the instrument.

With that in mind, the following outline of criteria will help you compare and contrast various tests. For each test you want to consider, complete the outline to the extent possible and then use this information to make a decision. Be sure to weigh each of the criteria accordingly. For example, although a test might be appropriate as far as its design and purpose, if it is prohibitively expensive or requires special training (which you do not have) to administer it, it is not likely that you will be able to use it.

Basic Information

1. Name of the test
2. Date of publication
3. Test author(s)
4. Publisher
5. Cost of all needed test materials
6. Cost of sample packet

General Test Information

7. Purpose of the test as stated by author(s)
8. Purpose of the test as used in other studies
9. Age levels included
10. Grades included
11. Special populations included
12. Method of administration (individual or group)
13. Method of scoring (manual or computer)
14. Amount of time required for administration
15. Ease of administration
16. Ease of scoring
17. Amount of training required for administration
18. Adequacy of test manual and other materials

Design and Appearance

19. Clear and straightforward directions
20. Design and production satisfactory
21. Arrangement of items on page
22. Ease of reading

Reliability

23. Reliability data provided
24. Type of reliability established (test-retest, parallel forms, etc.)
25. Independent studies used to establish reliability

Validity

26. Validity data provided
27. Type of validity established
28. Independent studies used to establish validity

Norms

29. Norms available
30. Description of norm groups
31. How norm groups were selected
32. Appropriateness of norm groups for your purpose

Evaluation

33. How used in the past
34. Summary of outside review(s)
35. Other evaluative information

Selecting a Sample

Many researchers feel that there is nothing more important than selecting a sample that accurately reflects the characteristics of the population they are interested in studying. Yet sample selection can sometimes be a risky business, with all kinds of questions needing to be answered before you can make any moves toward the sample selection process. Here is a list of factors to keep in mind:

1. Imagine yourself trying to find a suitable pool of candidates from which to select a sample, and multiply
the number of other people trying to do the same thing in your community by 100. That is a small estimate of how many people in every university community are looking for a sample to include in their study. Where can you look? Try some of the following:

- Church and synagogue groups
- Boy and Girl Scouts
- Retirement homes and communities
- Preschools
- Singles clubs
- Special interest and hobby groups
- Fraternal organizations

2. Remember, you do not want to select any group that is organized for a particular reason if that reason is even remotely related to what you are studying. For example, you would not select members from the Elks Club for a study of loyalty or friendship or parents who send their kids to private schools for a survey on attitudes toward supporting public education, unless the selection of such samples is an important part of your sampling plan.

3. Approach candidates with a crystal clear idea of what you want to do, how you want to do it, and what they will get in return (a free workshop, the results of the study, or anything else you think might be of benefit to them).

Similar to the previous point, the population must match the characteristics of those groups you want to study. It might go without saying (but I’ll say it here anyway), but selecting a sample from a poorly identified population is the first major error in sample selection. If you want to study preschoolers, you cannot study first graders just because the two groups are close in age. The preschool and the first-grade experience differ substantially.

The type of research you do will depend on the type and size of sample you need. For example, if you are doing case study descriptive research, which involves long, intense interviews and has limited generalizability (which is not one of the purposes of the method), you will need very few participants in your sample. If you are doing a group differences study, you will need at least 30 participants for each group.

A highly reliable test will yield more accurate results than a homemade essay exam. The less reliable and valid your instruments, the larger the sample size that will be required to get an accurate picture of what you want.

Consider the amount of financial resources at your disposal. The more money (and resources in general) you have, the more participants you can test. Remember, the larger the sample (up to a point) the better, because larger samples come closer to approximating the population of which they are a part.

The number of variables you are studying and the number of groups you are using will affect the sample selection process. If you are simply looking at the difference in verbal skills between males and females, you can get away with 25–30 participants in each group. If you add age (5- and 10-year-olds) and socioeconomic status (high and low), you are up to six different possible combinations (such as 5-year-old girls of high socioeconomic status) and up to 6 × 30, or 180, subjects for an adequate sample size.

Data Collection and Analysis

If you are following the steps in this chapter, you can do the following:

- Understand the format of a research proposal
- Choose a problem of some significance in your field and specify what the variables of interest (both dependent and independent) will be
- Locate measures of the dependent variable that are both reliable and valid

Now you are ready to begin the data analysis stage. In Chapters 7 and 8, you learned how to use some basic statistical tools to describe the characteristics of the data you collect during the early stages of your research.

At this point in your proposal, you want to address the following tasks and ensure that they are completed before you continue:

1. Development of a data collection form to help you with organization and accuracy.
2. Specification of which types of descriptive statistics you will use to describe the variables you are examining. At what level of measurement do they fall, and what level of measurement—nominal, ordinal, interval, or ratio—best reflects what you are trying to say?
3. Identification of the other kinds of information you need to present in this initial analysis of what your data look like. Maybe you need demographic information, such as the gender, age, socioeconomic status, or political affiliation, of the participants. Even if this information is not directly related to the question you are asking, it does not hurt to collect it at this point. Later on you might want to go back and look at some of the other information, and you will be glad you collected it. This does not mean that the demographic questionnaire you use is 10 pages long and contains more than 1,000 questions. It means that, within reason, you collect information related to, but not directly bearing upon, your main question.
4. Pilot data collection, so that you can practice the simple descriptive and inferential statistics discussed in Chapters 7 and 8. Treat the analysis as if it were the real thing and go through every step that you plan to go through for the final data analysis. In this way, you will know exactly what you do and do not understand and can get help if necessary. Do the data analysis
Correct selection. You got a little bit of the why of inference in Chapter 8, but to get all of the why, enroll in that Statistics 1 class and make your adviser (and parents) happy.

Protecting Human Subjects

As you learned in Chapter 2, most organizations that sponsor research (such as universities) have some kind of committee that regularly reviews research proposals to ensure that humans (and animals) are not in any danger should they participate.

Before investigators begin their work, and as part of the proposal process, an informed consent form is completed and attached to the proposal. The committee reviews the information and either approves the project (and indicates that human subjects are not in danger) or tries its best to work with the investigator to change the proposed methods so that things proceed as planned.

Summary

When the time comes to write a proposal, here is the quote you want to paste over your desk:

Pay me now or pay me later.

And that is the truth. Successful scientists will tell you that if you start out with a clear, well-thought-out question, the rest of your proposal, as well as the execution of your research, will fall into place. On the other hand, if your initial question is unclear, you will find yourself floundering and unable to focus on the real issue. Work on writing your proposal every day, read it over, let it sit for a while, have a friend or colleague glance at it and offer suggestions, write some more, let it sit some more. Get the message? Practice and work hard, and you will be well rewarded.

Exercises

1. Develop a demographic questionnaire with 6–8 items related to demographic variables. Be sure to include answer choices for categorical variables.

2. Go to the library and select a journal article that represents work in your field of interest. Apply each of the criteria that we specified in this chapter (see the section titled Criteria for Judging a Research Study). To make this exercise even more interesting, work on the task with a colleague, or select the same journal article as a colleague and compare your results.

3. What elements do you think should be part of a human experimentation or IRB form?