

# WRITING A RESEARCH PROPOSAL

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## ABSTRACT

A research proposal is an important process of any research. The success of any research is depending on the quality of research proposal. The science and art of writing a research proposal depending on several factors, these include the time deadlines, quality benchmarks and associated costs. A research proposal should provide an overview of research, it gives the reader sufficient information about the research work, the complete work plan, the value and the scope of the research. A research proposal does not only communicates what researchers are trying to accomplish, but is also a tool for researchers to obtaining research fund. There are no specific rules on structure or format on writing a research proposal – it is depend on institution, funding agency and supervisor of thesis or dissertation. A research proposal may refine as the research on progress – it is not uncommon when comes to the final submission it might be a totally different document. Aim of this paper is to provide some guides and tips on writing a research proposal to new researchers, as well undergraduate or post graduate students.

**Keywords:** Writing, Research, Proposal

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## 1.0 Introduction

Research is an essential part of undergraduate and post graduate academic programme. The learning outcome of the programme will not be fulfilled in the absence of academic research, which is not as easy as it is thought. Research is a scientific and systematic investigation to acquire new knowledge, information's, facts, appropriate solution to a problem, deduce theory and generalisation. Through research an academician could expand their area of knowledge and further the study. Before conducting any research, the researcher has to prepare a research proposal for approval by supervisor, institution, funding agency and ethical committee.

Preparing a research proposal is an essential step in the research process. There are various micro steps to be undertaken by researcher to prepare a good research proposal. There is no specific format or structure to be followed by researcher in preparing a research proposal; it is depend on supervisor of thesis or dissertation, institution and funding agency. In this article the author proposes a research proposal structure as a guide to researcher or students. It is depending on institution, funding agency and thesis or dissertation supervisor, some components of the propose structure may require omission or inclusion of additional heading.

## 2.0 Purpose of a research proposal

A research proposal is an overall plan of the research that the researcher intended to carry out. It is an intellectual scholastic document that specifies,

- ✓ What the researcher want to do and why
- ✓ How the researcher will do it
- ✓ What researcher expect will be the result
- ✓ How the researcher will interpret the result

Research proposal is intended to convince supervisor, institution, funding agency or ethical committee that the researcher has a worthwhile research project, and the researcher has the competency and work plan to complete the research.

A research proposal should contain all the key elements in research and sufficient information should be included to assist the evaluator in evaluation process. The quality of a research proposal not only depends on the quality of proposed project, but also on the quality of research proposal writing. Therefore it is very important for a researcher to write a coherent, clear and compelling research proposal according to structured proposal writing format. A vague, weak or incomplete research proposal can lead to a long, painful, and often unsuccessful research implementation, hence lead to unsuccessful thesis or dissertation writing. A good and well thought research proposal will forms the back-borne of research – and probably will become part of thesis or dissertation itself.

## 3.0 Structure of a research proposal

In Table 1, a research proposal is structured according to thesis or dissertation writing style. It is likely to contain most of the elements stated in Table 1.

**Table 1:** Propose structure of a research proposal

	Components or Heading	Function/Purpose	Characteristics
1.	<b>Cover page</b>	Identifies the followings: <ul style="list-style-type: none"> <li>- Topic/Title</li> <li>- Name of researcher and co researchers</li> <li>- Institution</li> <li>- Purpose: fulfilment of degree or program, or funding</li> </ul>	<p><b>Title of research;</b></p> <p>Title should be descriptive of focus, simple, concise, eye-catching and use key words.</p> <p>The title of study would answer;</p> <ul style="list-style-type: none"> <li>- What</li> <li>- Who</li> <li>- Where</li> <li>- When</li> <li>- How</li> </ul> <p>Avoid “useless” word for title, i.e.: “A study of...” (Anywhere your research already a study), “Evaluating of...”</p>

2.	<b>Table of contents</b>	List chapters or sections of proposal with main heading, and page references	<p>Uses a hierarchy for heading and sub-heading, example:  <b>Chapter 1 Introduction</b>            1.1 Heading 1            1.2 Heading 2            1.3 Heading 3            .....</p> <p><b>Chapter 2 Literature Review</b>            2.1 Heading 1            2.1.1 Sub heading 1            2.1.2 Sub heading 2</p> <p>2.2 Heading 2            etc.....</p> <p><b>Chapter 3 Materials and Methods</b>            .....</p>
3.	<b>Abstract</b>	Write an abstract for the research proposal. An abstract is a summary of the research work.	Abstract should not exceed 300 words or a page. An abstract includes a brief background of research and methods employed in the research.
4.	<p><b>CHAPTER 1: INTRODUCTION</b></p> <p>Under Chapter 1 the following heading normally covered;</p>	<p>The purpose of the introduction is to construct logical information that will educate the reader about the research proposed.</p>	
	<b>1.1 Background</b>	<p><b>1.1 Background</b>            Provide background of research, to familiarize reader with research topic.</p>	May include information on geographical, population, historical, cultural, political, social and organizational.
	<b>1.2 Specific information on the research</b>	<p><b>1.2 Specific information on topic of study</b>, i.e. on epidemiology etc. to help on developing the problem statement of the research.</p>	<p>May include:</p> <ul style="list-style-type: none"> <li>i. Definition</li> <li>ii. Description of the epidemiology of problem to be study; global, national and local; including factors associated with the problem</li> <li>iii. Brief explanation on theoretical context of research</li> </ul>

<p><b>1.3 Problem statements</b></p>	<p>In this sub section it stated the problem to be investigated in the research. Problem statement also stating why is this problem warranting the research, and the problem statements will lead to a research questions.</p>	<p>Problem statements will answer following questions;</p> <ol style="list-style-type: none"> <li>i. Why is the research important? Supported by facts on the magnitude of the problem</li> <li>ii. What other studies have been in the area? Highlight limitations and weakness of other studies, and identifies the gaps</li> <li>iii. Significant or benefits of the study;             <ul style="list-style-type: none"> <li>- Add to new knowledge</li> <li>- Input in policy decision making</li> <li>- Program planning</li> </ul> </li> </ol>
<p><b>1.4 Research questions</b></p> <p>A research question is a more precise and detailed expression of the research problem statements.</p>	<p>Research questions are listing of questions that the research seeks to answer. The research question together with research approaches will guide researcher and structure the choice of data to be collected and analysed.</p>	<p>The following points are highlight some of the features of good research questions;</p> <ol style="list-style-type: none"> <li>i. Relevant – research questions should be academically and intellectually interest to people in the field of study. For example; filling a gap of knowledge, analysing academic assumption or professional practice, comparing different approaches or testing theories</li> <li>ii. Manageable in term of research and in term of researcher own academic abilities – researcher need to be realistic about the scope and scale of the research. Therefore the question asks must be within researcher ability to tackle</li> <li>iii. Substantial and with original dimensions – shows researcher own imagination and ability to construct and developed research issues</li> <li>iv. Consistent with the requirement of study.</li> </ol>

			<p>v. Clear and simple</p> <p>vi. Interesting – this is essential, the question should maintain researcher interest throughout the study. Avoid question which are convenient or flashy.</p>
	<p><b>1.5 Objectives of the study</b></p> <p>1.5.1 General objective</p> <p>1.5.2 Specific Objectives</p>	<p>The objective of research should follow from the research problem statements and research questions. It is statements of what researcher want to achieve by doing the research.</p> <p>The objectives;</p> <ol style="list-style-type: none"> <li>i. Provide direction to the research</li> <li>ii. Serve as standard of performance</li> <li>iii. Determine the roles and efforts need to be coordinated in the research</li> </ol>	<p>The objectives are often first stated in fairly general term, followed by more detailed statement of the relevant specific objective.</p> <p><b>General objective</b> Example: To determine the incidence of dengue and its risk factors in Malaysia</p> <p><b>Specific objectives</b> The specific objectives of the above general objective could be; To determine incidence rate of dengue fever among urban and rural population of Malaysia, and more specific objectives can be developed for the above general objective.</p> <p>The SMART objectives;</p> <ul style="list-style-type: none"> <li>- Specific</li> <li>- Measurable</li> <li>- Achievable</li> <li>- Realistic</li> <li>- Time-bound</li> </ul> <p>The SMART objectives will guide researchers to plan research work according to output.</p>
	<b>1.6 Hypotheses</b>	<p>Hypotheses are supposition that is tested using statistic that leads to the acceptance or rejection.</p>	<p><b>Research hypothesis:</b></p> <p>A hypothesis could be stated as a positive declaration and known as research hypothesis.</p> <p>Example: <i>The prevalence of dengue fever in urban and rural area is</i></p>

			<p><i>different, or the prevalence of dengue fever is higher in urban area than rural area.</i></p> <p><b>Null hypothesis</b> A hypothesis could also be stated as a negative declaration and known as null hypothesis.</p> <p>Example: <i>There is no significant difference between the prevalence of dengue fever in urban and rural area, or there is an association of prevalence of dengue fever with.....</i></p> <p>If statistical testing is intended in the analyses, the hypotheses should be as specific as possible, and not implicit.</p>
	<b>1.7 Definition of terms</b>	In this section researcher may define some of the important terminology commonly used in the research.	
5.	<p><b>CHAPTER 2: LITERATURE REVIEW</b></p> <p>In literature review a research proposal will contain;</p> <p><b>2.1 Literature review</b></p> <p>Simple approach in writing a literature review is by following the usual academic writing, a literature review may have;</p> <ul style="list-style-type: none"> <li>- Introduction</li> <li>- Body</li> <li>- Conclusion</li> </ul> <p>Dilemma of students normally on the numbers of references to be included in the literature review – there is no specific</p>	<p>A literature review is an integral part of a research proposal; Reflecting the researchers knowledge of the topic and highlights the importance of the research proposal. It represent a review of finding from previous research, related to the topic intended to study. The researcher could use this information to put his or her own research into context and make the case for why it should be studied. It is very important to</p>	<p>A literature review is information dense; therefore it must be intelligently structured to help reader to grasp the key arguments. Following focus in writing a literature review could be helpful (The 5 C’s);</p> <ul style="list-style-type: none"> <li>i. Cite (source); keep primary focus on the literature review related with research topic</li> <li>ii. Compare; compare various arguments, themes, methodologies, approaches and findings of the literature; who else employs similar</li> </ul>

<p>rules on the numbers of references; it depends on the purpose of the review itself. Following as a guide only;</p> <ul style="list-style-type: none"> <li>- Undergraduate research: 10 to 20 references</li> <li>- Master: 40 to 50 references</li> <li>- Doctoral: 60+ references</li> </ul> <p>Your supervisor should specify on the numbers of references require.</p>	<p>distinguish a literature review with an annotated bibliography which describing and evaluating the text in one paragraph one after another. In contrast to a literature review which contains synthesises of many text in one paragraph.</p>	<p>methodologies.</p> <ul style="list-style-type: none"> <li>iii. Contrast; contrast various arguments, themes, methodologies, approaches and findings of the literature; areas of agreement and disagreement, and debate.</li> <li>iv. Critique; critically analysed the literature.</li> <li>v. Connect the literature or determine the relationship of the literature with the research.</li> </ul> <p>Like other academic writing, a literature review to be structure into:</p> <ul style="list-style-type: none"> <li>- Introduction</li> <li>- Body and,</li> <li>- Conclusion.</li> </ul>
<p><b>2.2 Conceptual Framework</b></p> <p>Provides the structure and content for the whole research based on literature. During conceptual framework development, researcher should avoid making assumption without backup by facts and data.</p>	<p>A conceptual framework contribute to a research in at least two ways:</p> <ul style="list-style-type: none"> <li>i. Identifies the research variables</li> <li>ii. Clarifies relationship among the research variables</li> </ul> <p>Conceptual frameworks provide researchers with:</p> <ul style="list-style-type: none"> <li>i. The ability to move beyond descriptions of ‘what’ to explanations of ‘why’ and ‘how’.</li> <li>ii. A means of setting out an explanation set that might be used to define and make sense of the data that flow from the research question.</li> <li>iii. As a filtering tool for selecting appropriate research questions and related data collection methods.</li> </ul>	<p>The research conceptual framework presentation could be in form of;</p> <ul style="list-style-type: none"> <li>i. Flow charts.</li> <li>ii. Tree diagrams.</li> <li>iii. Shape based diagrams – triangles, concentric circles, overlapping circles.</li> <li>iv. Mind maps.</li> <li>v. Soft systems.</li> </ul>

		<p>iv. As a reference point or structure for the discussion of the literature, methodology and results.</p> <p>v. The boundaries of the research work</p> <p>Conceptual frameworks, however, also have problems;</p> <p>i. Is influenced by the experience and knowledge of the individual – initial bias.</p> <p>ii. Once developed will influence the researcher’s thinking and may result in some things being given prominence and others being ignored – ongoing bias.</p> <p>Therefore very important to revisit the research conceptual framework as the research is on.</p>	
<p>6.</p>	<p><b>CHAPTER 3: METHODOLOGY</b></p> <p>In this section, the researcher should make clear to the reader the intended approach, technique and work plan for the implementation of the research.</p> <p>In the methodology section the following sub headings are normally covers;</p>	<p>This section is derived from research questions and research objectives. It provides a written description of the specific actions, plan, or strategy you will take to answer your research questions. It is dealing with the practical implementation of research in term of selection of research subjects, research instrumentations, data collection, data analysis and interpretation of results. At the proposal stage, the methodological philosophies of research methods are not require.</p>	



3.1 Study location	Description of study location to make reader understand any problems and limitations face by researcher during implementation of the research.
3.2 Study design	Study design should best suits research. The study design indicates the plan or strategy to be used in research. The type of study design and duration of study will be included in this sub section.
3.3 Study population	A study population is define as all people or subjects with the characteristic one wishes to study.
3.4 Sampling population	A sampling population is the selected population or subject from which the study sample is drawn.
3.5 Inclusion and exclusion criteria	Characteristics of population or subjects in sampling population to be included or excluded from the study.
3.6 Sampling frame	Sampling frame is a list of the population or subjects (preferably the entire population) with appropriate contact information to be included in the study. For example, in an opinion poll, possible sampling frames include a list of people in electoral register or a list people in telephone directory.
3.7 Sampling size	In this sub section of your research proposal, you will describe the sample size and how you determined sample size to be include in the study and what attributes they have which make them uniquely suitable for the study. We recommend using formula in sample size calculation, and reasons to use the formula need to be explained. The parameter used in calculation need to be explained and require reference.
3.8 Sampling methods	Describe sampling method intended to be employ in the study.
3.9 Study variables	You need to identify independent variables and dependent variable of the study. Each of the variables needs to be defined operationally.  <b>Independent Variable (IV)</b> The independent variable, also known as the IV, is the variable that the researchers are manipulating in the study. It is also the label given to the "criterion" variable in certain types of regression analysis.  <b>Dependent Variable (DV)</b> The dependent variable, or DV, is the one that is being measured by the researcher; it is the outcome variable. There is often confusion between the IV and the DV among new science students, but a good way to distinguish them is to remember that the outcome of measuring the DV is hypothesized to depend on the manipulation of the IV.

	<p>Other types of variables are;</p> <p><i>Covariate</i> A covariate is a variable that the researchers include in an analysis to determine whether the IV is able to influence the DV over and above any effect the covariate might have. The classic example is when researchers take a baseline measurement, perform some manipulation, and then take the measurement again. When they analyse this data, they will enter the baseline scores as a covariate, which will help cancel out any initial differences between the participants.</p> <p><i>Extraneous Variables</i> An extraneous variable is a little different from the rest because it is not directly measured, or often unwanted, by the researchers. It is a variable that has an impact on the results of the experiment that the researchers didn't anticipate.</p>
3.10 Study instrument	<p>In this subsection describing any the instruments to be use in the research. The following information should be included:</p> <ol style="list-style-type: none"> <li>i. Type of instruments: questionnaire, equipment or performa</li> <li>ii. Variables measured by instruments</li> <li>iii. Why the instruments or apparatus are used.</li> <li>iv. Reference indicating where apparatus or instruments can be obtained</li> <li>v. Quality control</li> <li>vi. Reliability and validity of instruments.</li> </ol>
3.11 Data collection	<p>Data collection is the process of gathering and measuring information on variables of study interest. A formal data collection process is necessary as it ensures that data gathered are both defined and accurate and that subsequent decisions based on arguments embodied in the findings are valid.</p> <p>In this sub section researcher require to describe all methods of data collection that will be employs in the study.</p>
3.12 Data analysis	<p>Describes exactly how you propose to analyse the data and type of software to be employs.</p> <p>In a quantitative study, you will use some type of statistical analysis. You need to specify those analyses.</p>
3.13 Expected results	<p>In this sub section should give a good indication of expected result from the study. The expected result should answering the research questions and research objectives; and back up with statistics and theory employs in the study.</p> <p>In this sub section also good place to summarize the significance of the study.</p>

	3.14 Ethical approval	All ethical requirements of institution or research including consent should be indicated in this sub section.
7.	<b>STUDY LIMITATION</b>	Two types of study limitation; i. Design limitation ii. Researcher limitation Research design is largely established by the limitations of the researcher. You need to consider how much time you have to complete the study, budget constraints, and physical proximity.
8.	<b>WORK PLAN</b>	The research work plan could act as a brief reminder of what it is that the researcher are going to achieve and what will follow from the one activity to another activity. In developing time-lines of research, institutional and funding agency requirement must be taken into consideration; Example the duration of study and duration of funding grant. Work plan could be develop by breaking up objectives or main research activities into small tasks. Time of completion of each task and it output could be used as milestone and will guide researcher on progression of the research. Presentation of the work plan could be in the form of; - Chart (Commonly use Gantt's Chart) - Timelines - Flowchart
9.	<b>BUDGET</b>	Preparing a detailed budget during the proposal stage can minimize budget management difficulties during project implementation once the project is funded. A carefully constructed detailed budget increases the likelihood of securing funding because it documents the research team's expertise to the funding agency. Different funding agencies have different format and requirement for research budget preparation.
10.	<b>References</b>	List all work that have been referred, and use referencing conventions recommended by the institution or supervisor.

## 2. General guidelines

Other general guidelines need to follow institutional requirement, example; language, pagination, page margin, spacing, and font type and size.

## 3. Need more help

Your supervisor, potential co-researchers or mentor are the best persons to be consulted if you having problem in writing research proposal.

#### 4. Conclusion

A research proposal writing is an effort that highlights topic of the research, the method that will be use to investigate it, and an effort to either to confirm or test a theory or to add to a scarce or non-existent body of academic literature. The research proposal should also present a modest literature review citing existing research that supports both the topic and the relevance of a research project that confirms or supports existing theory or that presents new information to the academic world. A good and well thought research proposal will forms the back-borne of the research.

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