

MAKERERE



UNIVERSITY

Title of Your Research Proposal in Sentence or Title Case

BY

FIRSTNAME SURNAME (BSc)

20XX/HDXX/XXXXXU

**A RESEARCH PROPOSAL SUBMITTED TO THE DIRECTORATE OF
GRADUATE TRAINING IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR AWARD OF THE DEGREE OF MASTER OF SCIENCE IN YOUR PROGRAMME
OF MAKERERE UNIVERSITY**

Month DD, YYYY

DECLARATION

I, FIRSTNAME SURNAME, hereby declare that this proposal is my original work and has not been submitted, in whole or in part, for any other degree or academic qualification at this or any other university or institution of higher learning. All sources consulted have been duly acknowledged and cited in accordance with academic convention.

Signature: Date:

This proposal is submitted with the approval of the following academic supervisors:

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ACKNOWLEDGEMENTS

Thank the people and institutions who made the work possible: supervisors, funders, host institutions, colleagues, family. One page is ample. Replace the paragraphs below.

I am grateful to my academic supervisors, [names], for their guidance and sustained support throughout the development of this proposal.

I acknowledge [institution] for providing an enabling environment for my scientific training and research development, and [funder] for financial support.

My appreciation goes to [family, colleagues and mentors] for their patience and encouragement.

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LIST OF ABBREVIATIONS

ANOVA:	Analysis of Variance
BLAST:	Basic Local Alignment Search Tool
DNA:	Deoxyribonucleic Acid
PCR:	Polymerase Chain Reaction
RNA-seq:	Ribonucleic Acid Sequencing

SUMMARY

One page. Cover, in order: the problem and why it matters; the gap in current knowledge; the aim and objectives; the methods, briefly; the expected outputs; and the boundary of the study, meaning what it will not establish. Write it last, once the chapters are settled.

[Context and importance of the problem, two to three sentences.]

[The specific gap this study addresses, and the aim that follows from it.]

[The approach: study design, materials, main methods, analysis.]

[Expected outputs, and an explicit statement of what the study will not demonstrate.]

CHAPTER 1: INTRODUCTION

1.1 Background to the Study

Move from the general to the specific in three or four paragraphs: the subject and its importance, the constraint or problem, what is already known, and what remains unresolved. Cite as you go.

[Opening paragraph establishing the subject and its importance (Surname & Othersurname, 2020).]

[Second paragraph narrowing to the constraint your study addresses (Author, 2019; Chapterauthor, 2021).]

1.2 Problem Statement

One paragraph. State the problem, the evidence that it is a problem, its consequence if unaddressed, and the specific uncertainty your study resolves. Avoid restating the background.

[Problem statement.]

1.3 Research Objectives

1.3.1 General Objective

[One sentence beginning with an infinitive: To determine. . . , To characterise. . .]

1.3.2 Specific Objectives

Two to four objectives, each achievable within the project window and each traceable to a method in Chapter 3 and to a research question below.

1. To [first specific objective].
2. To [second specific objective].

1.4 Research Questions

One question per specific objective, in the same order.

1. [Question matching objective 1?]
2. [Question matching objective 2?]

1.5 Research Justification and Significance

1.5.1 Scientific Justification

[Why this study, this approach and this timing are scientifically defensible.]

1.5.2 Research Significance and Expected Beneficiaries

[Who will use the outputs, and for what. Separate immediate outputs from downstream possibilities.]

1.5.3 Alignment with National, Regional and Global Priorities

[Link to national development plans, sector strategies and relevant Sustainable Development Goals, with citations to the policy documents.]

1.6 Conceptual Framework

Present the framework as a figure, then explain it in prose: independent variables, mediating and moderating variables, and the dependent outcome. Keep downstream outcomes clearly downstream.

The conceptual framework for this study is shown in Figure 1.1.

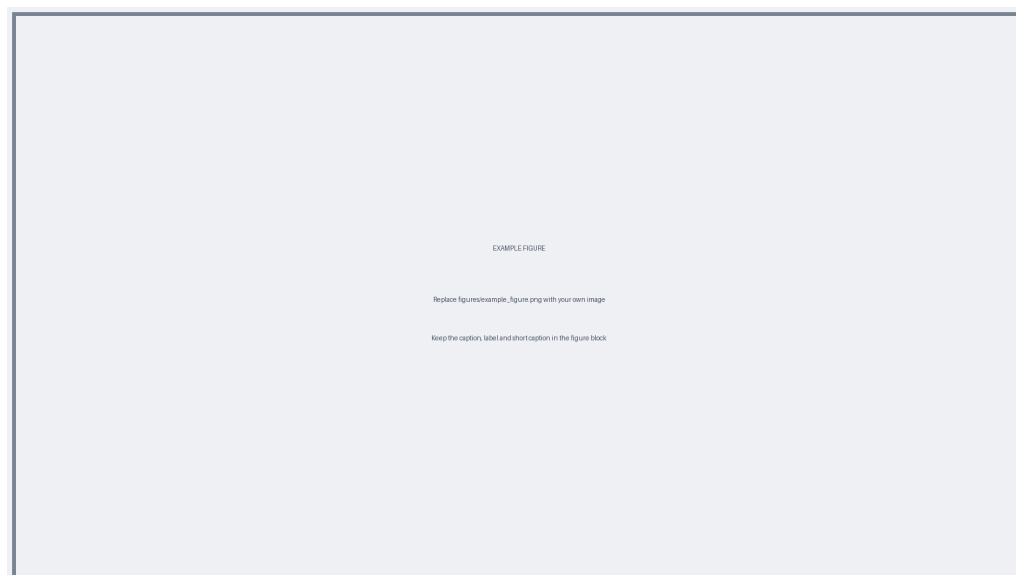


Figure 1.1: Conceptual framework linking [inputs], [evidence layers] and [the study outcome]. Source: author.

[Paragraph explaining the framework.]

1.7 Research Scope

State what the study covers, where and when, and then state plainly what it does not cover. A clear boundary here prevents scope drift in Chapter 3 and protects you at the defence.

[Scope: materials, sites, period, methods.]

[Boundary: this study will not . . .]

CHAPTER 2: LITERATURE REVIEW

2.1 [The Subject and Its Importance]

2.1.1 [Global and Regional Context]

[Synthesise, do not list. Group studies by what they establish, and say where they disagree (Surname & Othersurname, 2020; Chapterauthor, 2021).]

2.1.2 [Local Context]

[Evidence specific to your country, crop, system or population.]

2.2 [The Constraint Your Study Addresses]

2.2.1 [First Dimension of the Constraint]

[Text.]

2.2.2 [Second Dimension of the Constraint]

[Text.]

2.3 [Approaches That Have Been Tried]

Assess each approach on its own terms: what it achieved, under what conditions, and why it has not resolved the problem. Distinguish evidence from extrapolation.

[Text, with a comparative table if it helps. See Table 2.1.]

Table 2.1: [Comparison of approaches reported in the literature].

Approach	Reported outcome	Limitation
[Approach 1]	[Outcome]	[Limitation]
[Approach 2]	[Outcome]	[Limitation]

2.4 Methodological Basis for the Study

Justify the methods you will use in Chapter 3 against alternatives. This is where you show that the design is considered rather than conventional.

[Text.]

2.5 Knowledge Gaps Addressed by the Study

State each gap as a numbered or clearly separated claim, and make sure each one maps onto a specific objective. Close with what the study will not answer.

[First gap.] [Second gap.] [Third gap.]

[The study addresses these gaps. It will not answer . . .]

CHAPTER 3: MATERIALS AND METHODS

3.1 Research Design

Name the design, then say how the objectives map onto its stages and what gates progression from one stage to the next.

[Design and analytical sequence.]

3.1.1 Overall Workflow

The work will proceed through the stages shown in Figure 3.1.

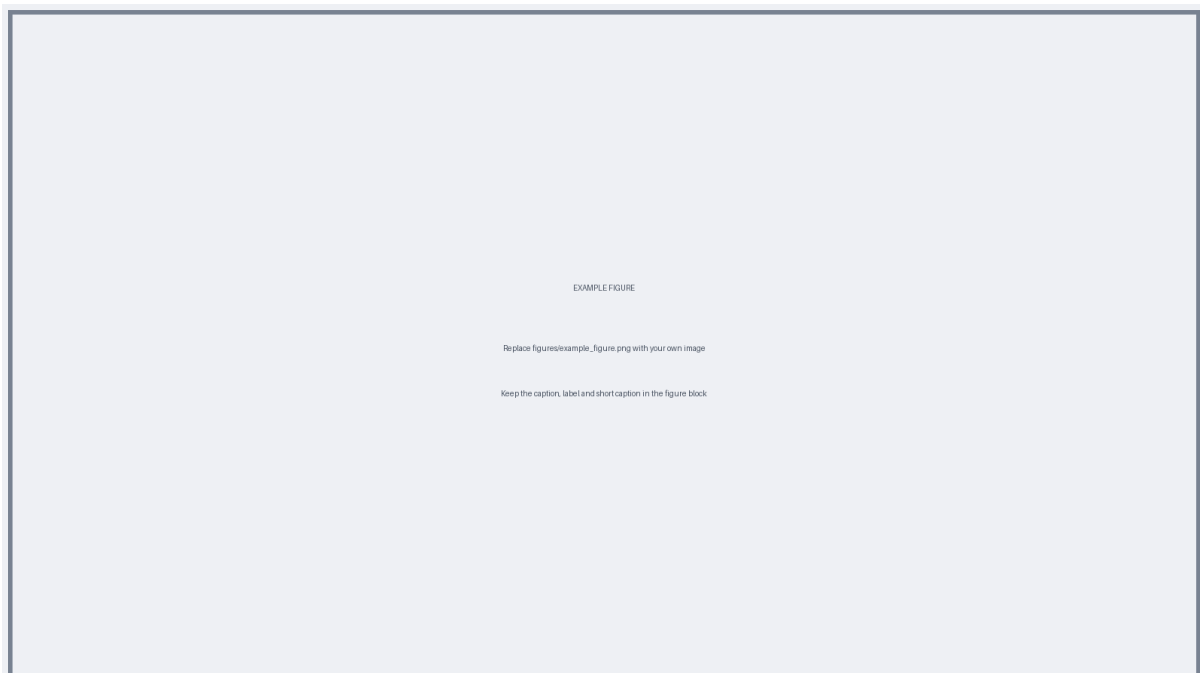


Figure 3.1: Overall study workflow from [first stage] to [final stage]. Source: author.

3.1.2 Materials, Software and Reproducibility

Record versions. A proposal that names software without versions cannot be reproduced, and examiners notice.

Table 3.1 lists the tools to be used.

Table 3.1: Core software, versions and analytical functions.

Analysis stage	Software / version	Primary function
[Stage]	[Tool x.y.z]	[What it does here]
[Stage]	[Tool x.y.z]	[What it does here]

3.2 Study Location

[Where the work will be done, and what facilities that site provides.]

3.3 Study Material and Sampling

3.3.1 Study Material

[Genotypes, accessions, isolates, participants or datasets, with their source and identifiers.]

3.3.2 Sampling and Replication

State the experimental unit, the number of independent biological replicates, and what pooling does and does not achieve. Distinguish technical from biological replication.

[Sampling plan, replication and the resulting sample size.]

3.3.3 Contingency

[What happens if the material or condition you depend on is not available in time, and the date by which that decision will be taken.]

3.4 [Objective 1 Methods]

One section per objective, with subsections for each procedure. Give thresholds, parameters and acceptance criteria, not just tool names.

3.4.1 [Procedure]

[Method, with parameters, for example an E-value threshold of 1×10^{-5} and coverage of $\geq 50\%$.]

3.4.2 [Procedure]

[Method.]

3.5 [Objective 2 Methods]

3.5.1 [Procedure]

[Method.]

3.5.2 [Procedure]

[Method.]

3.6 Statistical Analysis

Name the model, the experimental unit, the error control and the reporting convention. Say in advance how assumption failures will be handled, so that the choice is not made after seeing the data.

[Analysis plan, for example: significance at $q < 0.05$ after Benjamini-Hochberg correction, with effect sizes and confidence intervals reported alongside adjusted P values.]

3.7 Quality Assurance and Quality Control

[Controls, calibration, exclusion rules, logs and audit trail.]

3.8 Ethical and Biosafety Considerations

[Approvals needed, permissions obtained, waste handling, and a statement of any approvals that fall outside this study.]

3.9 Study Limitations and Mitigation

Table 3.2 sets out the anticipated limitations.

Table 3.2: Anticipated limitations, their effects and planned mitigation.

Limitation	Potential effect	Mitigation
[Limitation]	[Effect]	[Mitigation]
[Limitation]	[Effect]	[Mitigation]

3.10 Expected Outputs

[Datasets, protocols, code, and a statement of what is not an expected output.]

3.11 Data Management and Dissemination

[Storage, backup, identifiers, version control, and how results will be disseminated.]

REFERENCES

Author, A. B. (2019). *Title of a book, in sentence case* (2nd ed.). Publisher Name.

Chapterauthor, C. D. (2021). Title of a chapter in an edited volume. In E. F. Editor (Ed.), *Title of the edited volume* (pp. 101–120). Publisher Name. <https://doi.org/10.1000/example.2021.002>

Surname, F., & Othersurname, S. (2020). Title of a journal article, with DNA and other acronyms protected. *Name of the Journal*, 12(3), 45–67. <https://doi.org/10.1000/example.2020.001>

APPENDIX I:

Table I.1: Provisional Research Budget

No.	BUDGET ITEM	UNIT	QTY.	UNIT COST (US\$)	TOTAL (US\$)
A. [First category]					
1	[Item]	Lot	1	200	200
2	[Item]	Lot	1	150	150
				Subtotal A	350
B. [Second category]					
3	[Item]	Pair	10	30	300
				Subtotal B	300
C. Contingency					
4	[Repeat assays, price variation, replacement consumables]	Lot	1	120	120
				Subtotal C	120
				GRAND TOTAL	US\$770

APPENDIX II:

Table II.1: Project Work Plan

No.	Activity	Month 1	Month 2	Month 3	Month 4	Month 5	Expected Output/Milestone
1	[Proposal refinement and approvals]	●					[Approved protocol]
2	[Set up materials, environment or field site]	●	○				[Ready to begin]
3	[Data generation]		●	●	○		[Dataset]
4	[Analysis]			○	●	●	[Results]
5	[Writing and dissemination]				○	●	[Draft dissertation]

● = main period of activity; ○ = partial, preparatory or follow-up activity.