

Objectives of presentation

At the end of this session the participant will be able to:

- ❖ What is research proposal?
- ❖ Components of research proposal.

What is a Research Proposal?

- a **document that presents a plan for the research project.**
- Its purpose is to convince reviewers that you are capable of successfully conducting the proposed research.

Components of research proposal

- ☐ Title
- ☐ Abstract
- ☐ Introduction
- ☐ Objective
- ☐ Methods
- ☐ Ethical considerations
- ☐ Work plan
- ☐ Cost of the project
- ☐ References
- ☐ annex

Title

- ❖ Should be in line with your general objective/ problem statement
- ❖ Should tell readers what your study is about and where it will be done

Introduction

- Can be divided into 3 sections or the concepts of the 3 sections can be merged together
- Sections:
 - Statement of the problem/ Problem statement
 - Literature review
 - Justification of the study

Statement of the Problem

- Statement of the problem describe the **problem** and the **questions** that will guide the research process.
- **Proper justification** requires some sense of the likely contribution to knowledge that the research will make and its place in current debate or technological advance.

What is a research problem?

- All research is set in motion by the existence of a problem.
- A problem is:
 - a perceived difficulty, a feeling of discomfort about the way things are, or
 - a discrepancy between what someone believes the situation should be and what it is in reality.

Why is it important to state and define the problem well?

A clear statement of the problem:

- Is the foundation for **further development** of the research proposal
- Makes it easier to find information and reports of similar studies.
- Enables to systematically point out **why** the proposed research on the problem should be undertaken and **what you hope to achieve** with the study results.

What information should be included in the problem statement?

1. A brief description of **socio-economic and cultural characteristics** and an overview of **health status** and the **health-care system** in the country/district in as far as these are relevant to the problem.
2. A concise description of the **nature of the problem** and of the size, distribution and severity of the problem.

What information should be included cont..

3. Analysis of the **major factors** that may influence the problem and a discussion of why certain factors need more investigation.
4. A brief description of **any solutions** to the problem that have been tried in the past, how well they have worked, and why further research is needed

What information should be included cont..

5. A description of the **type of information expected to result** from the project and how this information will be used to help solve the problem.

How to write a Problem Statement

- The section should be concise while not forgetting to mention essential points.
- An outline listing the major points to be covered could be prepared before any writing is done

Literature review

- Search widely
- Reference all literature that you refer to in your review
- Evaluate the relevance of the literature to your study
- Include information directly relevant to your study
- This section must be based on peer reviewed journal or other published materials that are accessible in public domain.

Literature review review cont...

- Group findings from several studies according to common theme rather than discussing individual paper
- Provide strong "umbrella" sentences at the beginnings of paragraphs, "signposts" throughout, and brief "so what" summary sentences at intermediate points in the review.

Literature review cont...

- ❖ Discuss the magnitude of the problem: globally, regionally, locally
- ❖ Discuss risk factors
- ❖ Present conceptual framework
- ❖ Discuss any methodological issues: what is the best or alternative approach to study the proposed problem? why? Are there ethical challenges in conducting the proposed study?
- ❖ Put forward the rationale of the proposed study by indicating the gaps in knowledge that is not addressed in the literature

Objectives

- The study proposal is primarily judged by the clarity of the study objectives;
- time to set the objective(s) of the study before working on other sections of the proposal.
- You don't have to write too many objectives but if your objective is comprehensive and requires assessing/measuring more than one aspect then divide your objective into general and specific.
- Write each specific objective in a manner it addresses one aspect of the study problem and in a logical order.

Methods

- **Study Setting:** focus on the description that is most related to the study . Include map if possible
- **Study design:** Describe the specific study design to be utilized to address the objectives of the study
- **Subjects:** describe inclusion/exclusion criteria, Sampling, Method of assignment to study groups
- **Sample size:** calculate sample size for each specific objectives with different assumptions; show your formula and results

Methods cont...

Data collection procedures - describe:

- data collection techniques/methods
- data source(record, interview, observation),
- data collection tool (content, language and source),
- where data will be collected (at home, at work, at health facility ...),
- when will be data collected?
- data quality control(training, pre-testing, supervision...)

Methods cont...

- **Variables of the study** : outcomes, predictors
- **Operational definitions**: provide operational definition for key concepts and measurements in the study
- **Data Management**: describe the data handling, entry, and cleaning procedures
- **Data Analysis procedures**: describe the actual analysis you will perform to answer the specific objective of the study
- **Ethical consideration**: discuss the ethical concerns specific to your study and describe the procedures you will follow to minimize risk to study participants

Operationalizing variables (operational definitions)

- Many variables can easily be measured
- For some variables it is some times not possible to find meaningful categories unless the variables are made operational with one or more indicators
- Operationalizing variables means that you make them measureable

Operationalizing cont...

- Ex1- determining level of knowledge
- There is a need to develop a series of questions to assess knowledge
- The answer to these questions form an indicator of someone's knowledge on the issue, which can then be categorized
- E.g if 10 questions were asked, you might decide that the knowledge of those with:
 - 0 to 3 correct answers is poor
 - 4 to 6 correct answers is reasonable, and
 - 7 to 10 correct answers is good

Pre-test

- Pre-test is usually done as part of the training of field staffs
- At the end of the training, data collectors and supervisors go to the field to test the data collection instrument
- Pre-test is usually done on similar population but in an area different from the actual survey area

Purpose of pre-test

- Check the clarity of instruments
 - Are questions easily understood by the study participants?
- Assess the level of understanding of data collectors and supervisors
 - Do data collectors understand the questions and thus administer properly
- Correction of the survey instruments before the actual survey
 - What was the challenge during the pre-test?
 - What changes could be made to ensure the quality of the data collection ?
- To estimate the time and budget needed for the actual data collection
 - How many days will it take to collect data?

Sample size for pretest

Conduct pretest on a sample of about 30-50 people depending on the complexity of the items in the questionnaire

Dissemination and Utilization of Results

- **Briefly describe the dissemination plan**
- – **Feedback to the community**
- – **Feedback to local authorities**
- – **Identify relevant agencies that need to be informed**
- – **Scientific publication**
- – **Presentation in meetings/conferences**
- **Briefly describe how the study results can be best translated into application**

Work plan

- **Work plan summarizes (in a table, chart, graph) the various components of a research project and how they fit together.**
- **Includes:**
 - **Tasks to be performed**
 - **When the task will be performed**
 - **Who will perform the task including number of staff needed to perform the task**

Work plan cont..

A work plan can serve as:

- a tool in planning the details of the project activities and later the project funds.
- a visual outline or illustration of the sequence of the project operations.
- a management tool showing what activities are planned, their timing, and when various members will be involved
- a tool for monitoring and evaluation, when the current status of the project is compared to what was foreseen in the work plan.

Work plan cont..

Ways of presenting a work plan

Work schedule

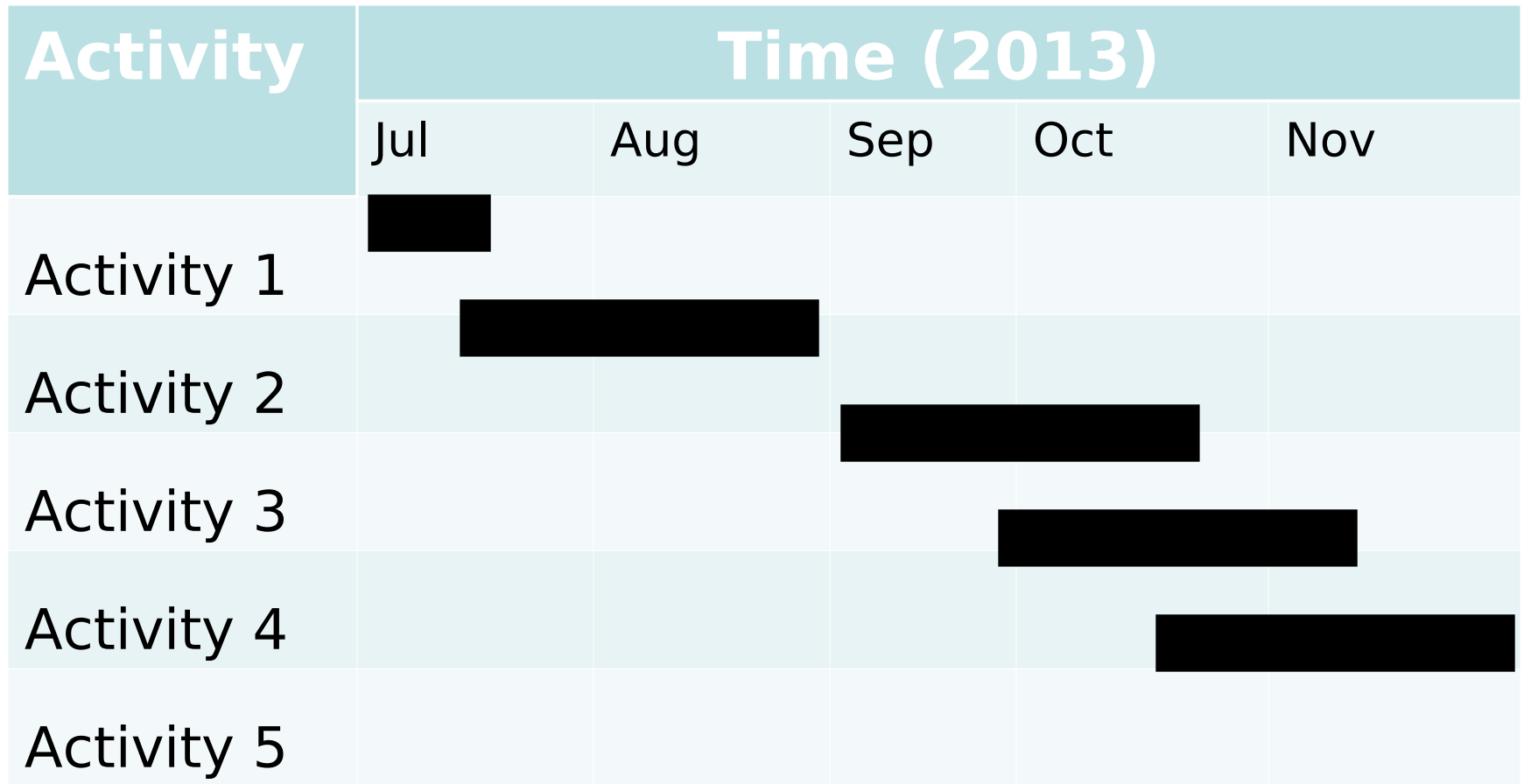
GANNT chart

PERT chart.

The GANTT Chart

- Is a planning tool which depicts graphically the order in which various tasks must be completed and their duration of activity.
- A typical Gantt chart includes the following information:
 - The tasks to be performed
 - Who is responsible for each task; and
 - The time each task is expected to take.
 - The length of each task is shown by a bar that extends over the number of days, weeks or months the task is expected to take.
- ***The Gantt chart doesn't show how various tasks are related.***

GANTT Chart cont...



Work plan cont..

- **The PERT Chart**
- PERT - **P**rogram **E**valuation **R**everse **T**echnique
- PERT chart involves identifying the various “steps” necessary for implementing a project and then planning the optimal feasible schedules for completing a study.
- **PERT chart** shows the steps or events in the project that must be completed as well as illustrating graphically how the steps are interrelated.
- It has the added advantage of helping the investigator determine the best timing for particular tasks and how to complete the project in the least possible time.
- *It doesn't indicate who will complete the work*
- *It is somewhat more complicated to use than the other techniques.*

The Work Schedule

- Is a table
- Summarizes:
 - tasks to be performed
 - duration of each activity, and
 - staff responsible.
- *The work schedule does not show how various tasks are related, nor give a visual picture of the time schedule.*

The Work Schedule cont..

Cost of the project (Budget)

How should a budget be prepared?

- It is necessary to use the work plan as a starting point.
- Specify, for each activity in the work plan, what resources are required.
- Determine for each resource needed the **unit cost** and the **total cost**.

Budget cont...

The Budget Format and Justification

- The type of budget format to be used may vary
- Most donor organizations have their own special project forms, which include a budget format.

Budget cont...

- **Advice on budget preparation**
- Include a 5%-10% contingency fund
- If inclusion of a contingency fund is not allowed, an alternative is to slightly over-budget in major categories.
- No need of presenting very detailed categories and amounts, especially if regulations do not allow adjustments afterwards.
- Ask the funding agency to agree that, if necessary there may be some transfer between 'line items' in the budget.

Budget cont...

- If the budget is for a period longer than a year, build in allowances for inflation before the project begins and in subsequent years by increasing costs by a set percentage.

Budget cont...

- **Budget justification**
- It is not sufficient to present a budget without explanation.
- The budget justification follows the budget as an explanatory note justifying briefly why the various items in the budget are required.
- Emphasis during justification:
 - items that may seem questionable
 - items that are costly
 - how complicated expenses have been calculated.
- If a strong budget justification has been prepared, it is less likely that essential items will be cut during proposal review.

References

Methods of citations in preparing literature review:

A) Vancouver system

This system have been adopted as standard by over 300 biomedical journals

- **For an article the following information should be noted:**

Author(s)' Surname followed by initials. Title of article.
Name of Journal. Year, Volume(number): page numbers of article.

- **Example:** Louria DB. Emerging- and re-emerging infections: The societal variables. *International Journal of Infectious Disease*. 1996, 1(2):59-62.

References cont...

- **For a book** the following information should be noted:
- Author(s)' Surname followed by initials.
Title of book. Place: Publisher, Year, Edition
- **Example:** Abramson JH. *Survey methods in community medicine. Edinburgh: Churchill Livingstone, 1990, 4th ed.*

References cont..

- **For a chapter in a book, the reference can include:**
- Author(s) of chapter (Surname(s) followed by initials). Chapter title. In: Editor(s) of book, (Surname(s) followed by initials) (eds). *Title of book*. Place: Publisher, Year: Page numbers of chapter.
- **Example:** Todd J and Barongo L. Epidemiological methods. In: Ng'weshemi J, Boerma T, Bennett J and Schapink D (eds). *HIV prevention and AIDS care in Africa; A district level approach*. Amsterdam: KIT Press, 1997: 51-68.

References cont..

B) the Harvard System

- *In other journals and books it is common to put the year, between brackets, straight after the name of the author(s).*
- This is called the Harvard system.
- Name of the author(s) (year). Title. Place of Publication: Publisher
- Ex- Abramson JH (1990), 4th ed. *Survey methods in community medicine*. Edinburgh: Churchill Livingstone.
- *There are more systems in use for referencing to literature.*
- Always carefully look what system is used in the journal you are submitting an article to and follow it systematically.

References cont...

- When you use the Vancouver system, you will use consecutive numbers in the text to indicate your references
- At the end you will then list your references in that order, using the format described above
- In Harvard System, put the surname of the author, year of publication and number(s) of page(s) referred to between brackets, (E.g. Shiva 1998:15-17)
- If this system of citation is used, the references at the end of the proposal, should be listed in Alphabetical order.

Annex

- Include in the appendices of your proposal any additional information you think might be helpful to a proposal reviewer.
- For example, include:
 - Biographical data on the principal investigator
 - The study questionnaire.
 - The consent form.
 - A copy of the approval from the Institutional Review Board.

References

- Bowling A. Research Methods in Health. Investigating Health and Health Services. Open University Press, 2000
- John W. Creswell. Research Design. Qualitative, Quantitative, and Mixed Method Approaches (third edn). SAGE Publications, Inc., 2009
- Davies M. Brett. Doing a successful research project. Using Qualitative or Quantitative Methods. Palgrave macmillan, 2007
- Ann Aschengrau, George R. Seage III. Essentials of Epidemiology in Public Health (2nd edn). Jones and Bartlet Publishers, 2008
- Hennekens CH and Buring JE. Epidemiology in Medicine. Philadelphia: Lippincott Williams & Wilkins, 1987 ■