

# Step 1 Formulating a Research Problem

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IT 3204N – RESEARCH METHODS IN COMPUTING



# Topics

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Reviewing the literature

Formulating a research problem

Identifying variables

Constructing hypotheses

# Reviewing the literature


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# Literature Review

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It is an integral part of the research process and makes a valuable contribution to almost every operational step.


Functions:

- It provides a theoretical background to your study.
  - It helps you establish the links between what you are proposing to examine and what has already been studied.
  - It enables you to show how your findings have contributed to the existing body of knowledge in your profession.
  - It helps you to integrate your research findings into the existing body of knowledge.
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# Literature Review

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## Usefulness

1. Bring clarity and focus to your research problem.
  2. Improve your research methodology.
  3. Broaden your knowledge base in your research area.
  4. Contextualize your findings.
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# Steps in Conducting a Literature Review

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1. Searching for the existing literature in your area of study.
  - Compile a bibliography from books, journals, and internet.
  - Books - material published is usually important and of good quality, and the findings are 'integrated with other research to form a coherent body of knowledge' but material is not completely up to date, as it can take a few years between the completion of a work and its publication in the form of a book.
  - Journals - provide you with the most up-to-date information, even though there is often a gap of two to three years between the completion of a research project and its publication in a journal.
  - Internet - can identify published material in books, journals and other sources with immense ease and speed.

# Steps in Conducting a Literature Review

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## 2. Reviewing the selected literature.

- Note whether the knowledge relevant to your theoretical framework has been confirmed beyond doubt.
- Note the theories put forward, the criticisms of these and their basis, the methodologies adopted (study design, sample size and its characteristics, measurement procedures, etc.) and the criticisms of them.
- Examine to what extent the findings can be generalized to other situations.
- Notice where there are significant differences of opinion among researchers and give your opinion about the validity of these differences.
- Ascertain the areas in which little or nothing is known – the gaps that exist in the body of knowledge.

# Steps in Conducting a Literature Review

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## 3. Developing a theoretical framework.

- It consists of the theories or issues in which your study is embedded.
- In writing about such information, you should start with the general information, gradually narrowing it down to the specific.

## 4. Developing a conceptual framework.

- It stems from the theoretical framework and usually focuses on the section(s) which become the basis of your study.
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# Example #1

Developing a theoretical framework – the relationship between mortality and fertility

The theoretical framework includes all the theories that have been put forward to explain the relationship between fertility and mortality. However, out of these, you may be planning to test only one, say the fear of non-survival.

If you want to study the relationship between mortality and fertility, you should review the literature about:

- *fertility* – trends, theories, some of the indices and critiques of them, factors affecting fertility, methods of controlling fertility, factors affecting acceptance of contraceptives, and so on;
- *mortality* – factors affecting mortality, mortality indices and their sensitivity in measuring change in mortality levels of a population, trends in mortality, and so on; and, most importantly,
- *the relationship between fertility and mortality* – theories that have been put forward to explain the relationship, implications of the relationship.

Out of this literature review you need to develop the theoretical framework for your study. Primarily this should revolve around theories that have been put forward about the relationship between mortality and fertility. You will discover that a number of theories have been proposed to explain this relationship. For example, it has been explained from economic, religious, medical and psychological perspectives. Within each perspective several theories have been put forward: 'insurance theory', 'fear of non-survival', 'replacement theory', 'price theory', 'utility theory', 'extra' or 'hoarding theory' and 'risk theory'.

Your literature review should be written under the following headings, with most of the review involving the examination of the relationships between fertility and mortality:

- fertility theories;
- the theory of demographic transition;
- trends in fertility (global, and then narrow it to national and local levels);
- methods of contraception (their acceptance and effectiveness);
- factors affecting mortality;
- trends in mortality (and their implications);
- measurement of mortality indices (their sensitivity);
- *relationships between fertility and mortality* (different theories such as 'insurance', 'fear of non-survival', 'replacement', 'price', 'utility', 'risk' and 'hoarding').

## Example #2

Theoretical framework for the study 'community responsiveness in health'.

Conceptual framework is focused on indicators to measure the success or failure of the strategies to enhance community responsiveness.

*Note: Preliminary discussions with some stakeholders revealed that not much was known to them about community responsiveness and therefore it was proposed that the study be carried out in two phases: preparatory phase and actual evaluation phase. The main aim of the preparatory phase was to ascertain the understanding of the concept, identify the strategies that are being or can be used, and developing a set of indicators for measuring its success or failure. This framework became the basis of the first phase of the study.*

*The review of literature was written around the following theoretical framework which, of course, emerged from the literature review itself.*

**Community responsiveness:** What do the stakeholders (service providers, service managers and the consumers) understand by community responsiveness, why it is needed, and what purpose does it serve?

**Historical and philosophical perspectives:** Start of the concept, an historical overview of its emergence, philosophical perspective that underpins the concept.

**Implementation strategies:** What strategies have been used to achieve community responsiveness in the service delivery area?

**Attitude of the stakeholders:** What are the attitudes of service providers, service managers and consumers of the services towards community responsiveness?

**Evaluation of community responsiveness:** What indicators can be used to determine the impact of these strategies, what should determine the success or failure of the implementation of the strategies and who and how should it be determined?

# Theoretical & Conceptual Framework

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## THEORETICAL FRAMEWORK

The theoretical framework provides a general representation of relationships between things in a given phenomenon.

It dwells on time tested theories that embody the findings of numerous investigations on how phenomena occur.


## CONCEPTUAL FRAMEWORK

A conceptual framework is the researcher's idea on how the research problem will have to be explored.

It embodies the specific direction by which the research will have to be undertaken.

It describes the relationship between specific variables identified in the study. It also outlines the input, process and output of the whole investigation.

It is also called the research paradigm.



# Writing about the reviewed literature

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It should be thematic in nature, that is based on main themes;

The sequence of these themes in the write-up should follow a logical progression;

Various arguments should be substantiated with specific quotations and citations from the literature and should adhere to an acceptable academic referencing style.

# Task #2 (Individual Work)

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Undertake a keyword search for a theme or issue that interests you using books, journals, and internet. Each member must choose two (2) research reports from your topic.

Develop a theoretical framework for the theme or issue you selected.

Instructions:

1. Save your document (Theoretical Framework) in PDF and use filename format:
  - Theoretical Framework – Surname
2. Submit the PDF thru email with email subject : [IT 3204] Task #2
3. It must be emailed on or before 08:00 PM on Thursday, February 2, 2023.