RESEARCH METHODOLOGY

An Introduction

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RESEARCH METHODOLOGY

An Introduction to RM

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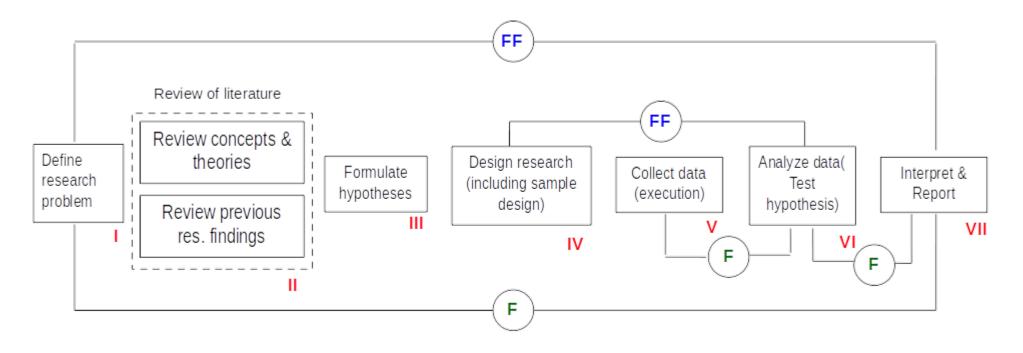
Introduction to Research Methodology

Contents:

I Research Process
II Criteria for Good Research

Research Process

RESEARCH PROCESS IN FLOW CHART

F = feed back (Helps in controlling the sub-system to which it is transmitted

FF = feed forward (Serves the vital function of providing criteria for evaluation

Research Process

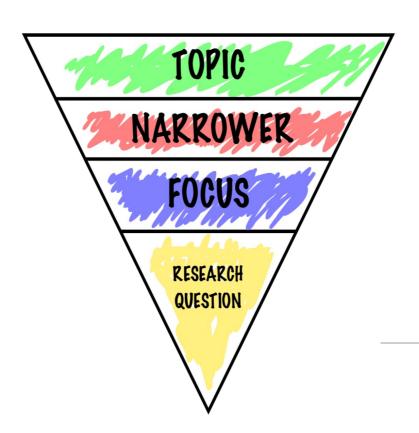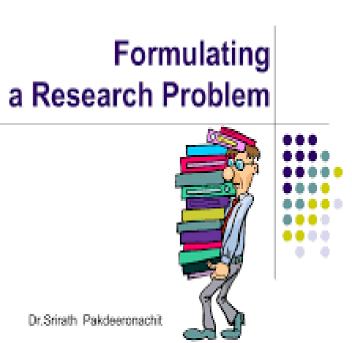The order concerning various steps provides a useful procedural guideline regarding the research process:

1) Formulating the research problem;
2) Extensive literature survey;
3) Developing the hypothesis;
4) Preparing the research design;
5) Determining sample design;
6) Collecting the data;
7) Execution of the project;
8) Analysis of data;
9) Hypothesis testing;
10) Generalizations and interpretation, and
11) Preparation of the report or presentation of the results, i.e., format write-up of conclusions reached.

1) Formulating Research Problem

2 steps for formulating research problem
- Understanding the research problem thoroughly
- Re-phrasing same in meaningful terms.

TOPIC

NARROWER

FOCUS

RESEARCH QUESTION

Formulating
a Research Problem

Dr.Srirath Pakdeeronachit

2) Extensive Literature Survey

- Abstracting and indexing journals and published / unpublished biographies.
- Academic journals, conference proceedings, government reports, books, etc..
- Earlier studies similar to research topic in hand.
- Good Library.
- Internet to search articles.
- Search Engines – Google / Google Scholar
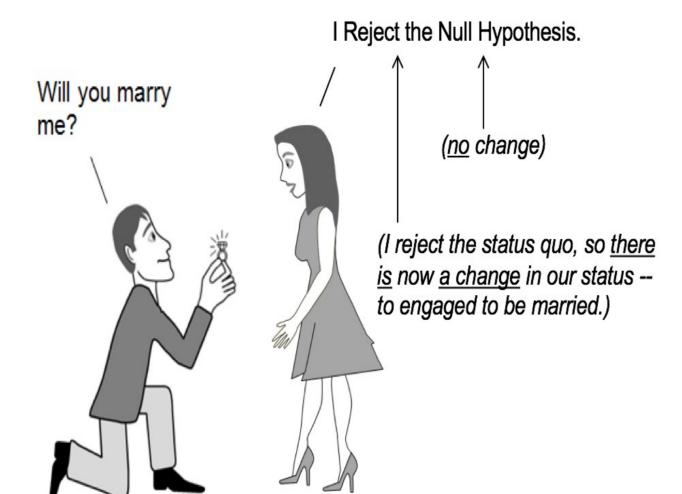- *http://scholar.google.com*

3) Development of Working Hypothesis

- *Working Hypothesis* - Temporary assumption made in order to draw out and test its logical consequences.
- They affect the manner in which tests are conducted.
- Process to go about developing Hypothesis.
- Discussion with colleagues and experts about problem.
- Examination of data and records concerning to the problem.
- Review of similar studies in the area.
- Exploratory personal investigation which involves – field interviews.

Development of Working Hypothesis

4) Preparing the Research Design

- Preparation of research design involves following consideration.
  - Obtaining Information
  - Availability and skills of researcher and his staff Explanation
  - Time available for research
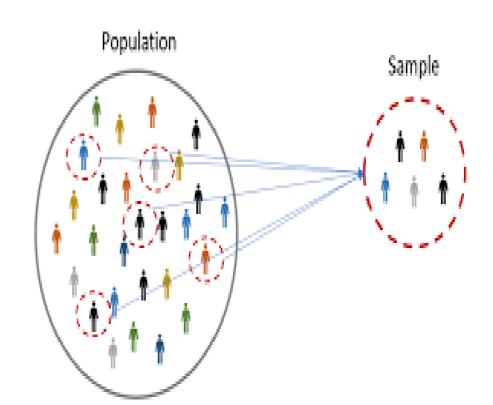 - Cost Factor relating to research – finance available.

5) Determining the Sample Design

- Simple random sampling.
- Systematic sampling.
- Stratified sampling.
- Quota sampling.
- Cluster sampling and area sampling.
- Multi stage sampling.
- Sequential sampling.

6) Collection of Data

- Data in hand is inadequate. So need to collect appropriate data
- Ways to collect data
- Primary Data – Observation and Surveys
  - Observation
  - Personal Interview
  - Telephonic interview
  - Mailing of questionnaires
  - Through Schedules.

Collection of Data

7) Analysis of Data

- Coding
- Editing
- Tabulation
- Computation of percentage coefficients
- Statistical tests
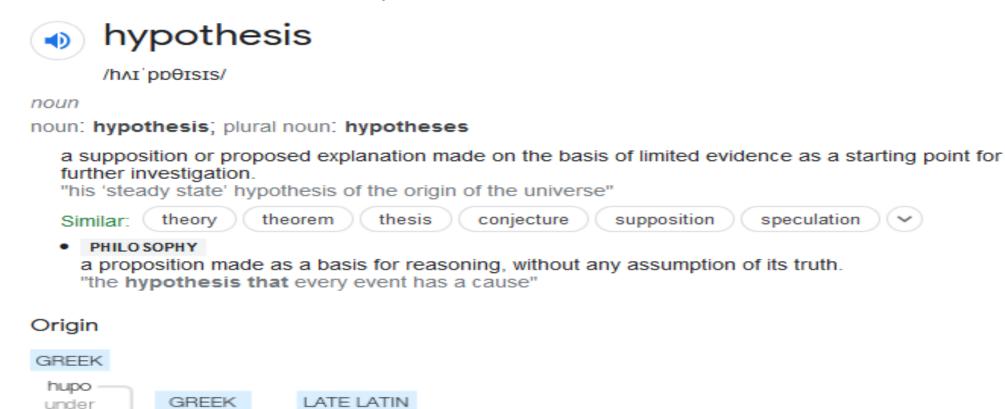- Statistical measures

Hypothesis -- Meaning

- A hypothesis is a proposed explanation for a phenomenon. For a hypothesis to be a scientific hypothesis, the scientific method requires that one can test it. Scientists generally base scientific hypotheses on previous observations that cannot satisfactorily be explained with the available scientific theories. ~ *Wikipedia*

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hypothesis
/hʌɪˈpɒθɪsɪs/

noun

noun: **hypothesis**; plural noun: **hypotheses**

a supposition or proposed explanation made on the basis of limited evidence as a starting point for further investigation.
"his 'steady state' hypothesis of the origin of the universe"

Similar: theory   theorem   thesis   conjecture   supposition   speculation   ⌄

- **PHILOSOPHY**
a proposition made as a basis for reasoning, without any assumption of its truth.
"the **hypothesis that** every event has a cause"

Origin

GREEK
hupo
under

GREEK
hupothesis
foundation

GREEK
thesis
placing

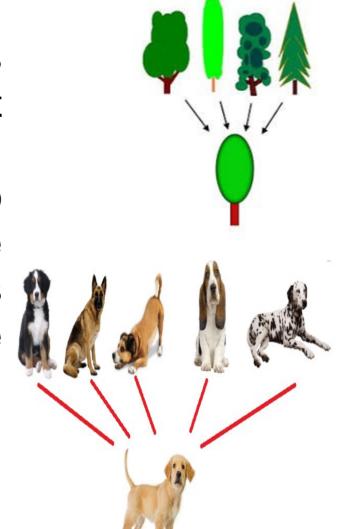LATE LATIN
hypothesis
late 16th century

8) Hypothesis Testing

- Various tests like Chi-square, t-test, f-test have been developed by statisticians.
- Hypothesis may be tested through use of one or more such tests depending on nature and object of research.
- Result – either accepted or rejected.

9) Generalization and Interpretation

- Real value of research lies in its ability to arrive at certain generalization.
- If researcher had no hypothesis to start with, he might seek to explain his findings on basis of some theory – Interpretation.
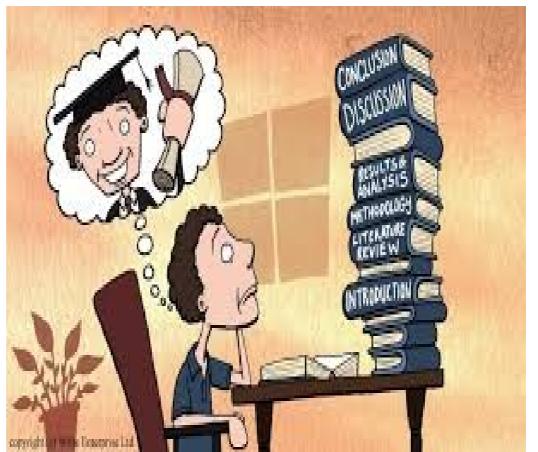
10) Preparation of Report / Thesis

- Preliminary pages – date, acknowledgement, foreword.
- Main text – introduction, summary of findings, main report, conclusion.
- End – appendices, bibliography – list of books, journals, reports, etc...
- Report should be concise.
- Charts and illustrations – clearly and forcibly

Criteria for a Good Research

Criteria for a Good Research

1) Purpose should be clearly defined.
2) Procedure used should be described in sufficient detail.
3) Design of research should be carefully planned to yield result as objective.
4) Report – complete frankness, flaws in procedural design.
5) Analysis should be sufficiently adequate, method of analysis should be appropriate.
6) Conclusion should be confined to those justified by data of research.

Criteria for a Good Research

- Good research is systematic
    - Research should be structured with specified steps to be taken in specified sequence.
- Good research is logical
    - Research is guided by rules of logical reasoning and logical procedure of induction and deduction.
- Good research is empirical
    - Research related to basically to one or more aspect of real situation and deals with concrete data.
- Good research is replicable
    - Allows research results to be verified by replicating the study and thereby building on sound basis of decision.

THANK YOU

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