

Introduction to Research

Master level
1st year of study
MCE+MIT

Research

- o Research = a search for knowledge
- o “art of scientific investigation”
- o “a careful investigation or inquiry specially through search for new facts in any branch of knowledge”

Objectives of research

1. To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as **exploratory** or formulative research studies);
2. To portray accurately the characteristics of a particular individual, situation or a group (studies with this object in view are known as **descriptive** research studies);
3. To determine the frequency with which something occurs or with which it is associated with something else (studies with this object in view are known as **diagnostic** research studies);
4. To test a hypothesis of a causal relationship between variables (such studies are known as **hypothesis-testing** research studies)

Types of research

- Descriptive vs. Analytical
- Applied vs. Fundamental
- Quantitative vs. Qualitative
- Conceptual vs. Empirical
- Etc.

Who does research?

- o To those students who are to write a master's or Ph.D. thesis, research may mean a careerism or a way to attain a high position in the social structure;
- o To professionals in research methodology, research may mean a source of livelihood;
- o To philosophers and thinkers, research may mean the outlet for new ideas and insights;
- o To literary men and women, research may mean the development of new styles and creative work;
- o To analysts and intellectuals, research may mean the generalisations of new theories.

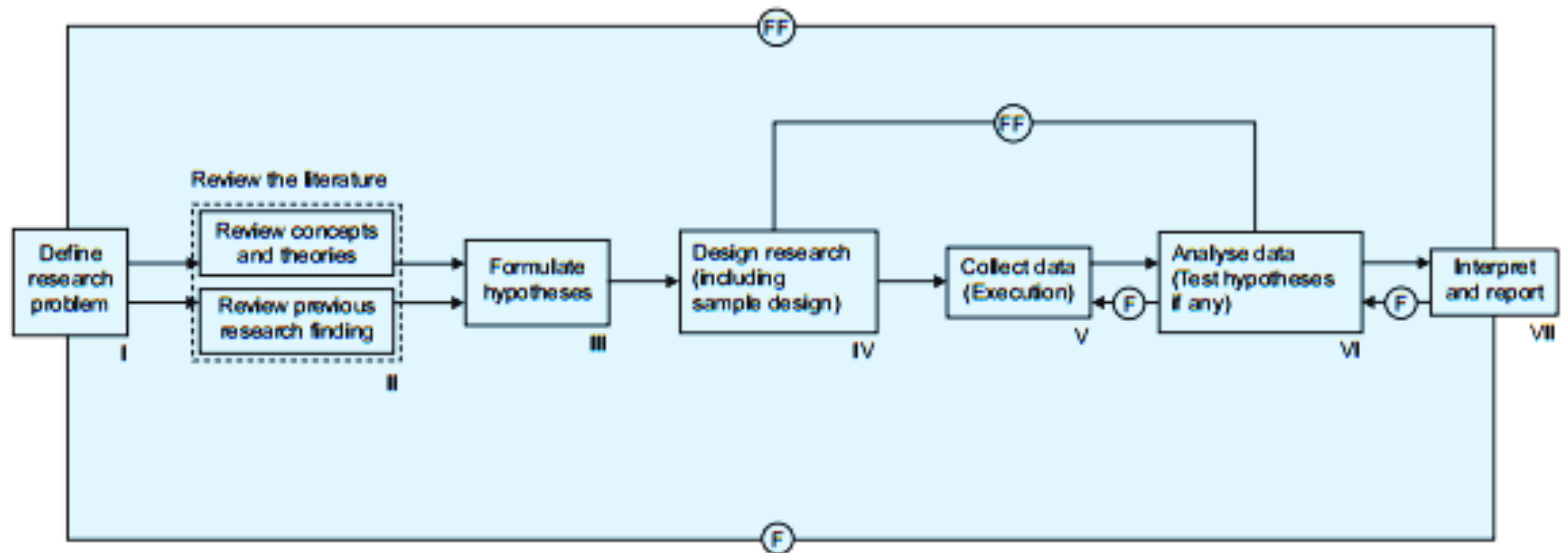
Research methods

<i>Type</i>	<i>Methods</i>	<i>Techniques</i>
1. Library Research	(i) Analysis of historical records (ii) Analysis of documents	Recording of notes, Content analysis, Tape and Film listening and analysis. Statistical compilations and manipulations, reference and abstract guides, contents analysis.
2. Field Research	(i) Non-participant direct observation (ii) Participant observation (iii) Mass observation (iv) Mail questionnaire (v) Opinionnaire (vi) Personal interview (vii) Focused interview (viii) Group interview (ix) Telephone survey (x) Case study and life history	Observational behavioural scales, use of score cards, etc. Interactional recording, possible use of tape recorders, photo graphic techniques. Recording mass behaviour, interview using independent observers in public places. Identification of social and economic background of respondents. Use of attitude scales, projective techniques, use of sociometric scales. Interviewer uses a detailed schedule with open and closed questions. Interviewer focuses attention upon a given experience and its effects. Small groups of respondents are interviewed simultaneously. Used as a survey technique for information and for discerning opinion; may also be used as a follow up of questionnaire. Cross sectional collection of data for intensive analysis, longitudinal collection of data of intensive character.
3. Laboratory Research	Small group study of random behaviour, play and role analysis	Use of audio-visual recording devices, use of observers, etc.

Experimentation & scientific methods

1. It relies on empirical evidence;
2. It utilizes relevant concepts;
3. It is committed to only objective considerations;
4. It presupposes ethical neutrality, i.e., it aims at nothing but making only adequate and correct statements about population objects;
5. It results into probabilistic predictions;
6. Its methodology is made known to all concerned for critical scrutiny and for use in testing the conclusions through replication;
7. It aims at formulating most general axioms or what can be termed as scientific theories

Flow chart of research



Where (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)

Plagiarism

- o Plagiarism = the reuse of someone else's prior ideas, processes, results, or words **without** explicitly acknowledging the original author and source.
- o **Check** your paper:
 - o <http://www.freetech4teachers.com/2010/08/7-resources-for-detecting-and.html>
 - o <http://www.plagtracker.com>

To Do:

Find
coordinator

Elaborate state-of-the-art report

- Fixed format (http://www.cs.upt.ro/data_files/content/content_d_84/D2%20Specification%20DT%20Literature%20Review.doc)
- Literature review of dissertation thesis domain
- Starting point for dissertation thesis
- Revisit & revise until coordinator says ok

Send it
electronically
to your
coordinator

Print it

- Your coordinator must sign 1st page
- Submit it to the secretary (5th floor)

References / Suggested reading

- o <http://www.limat.org/data/research/Research%20Methodology.pdf>
- o <http://www.brad.ac.uk/management/media/management/els/Introduction-to-Research-and-Research-Methods.pdf>
- o http://www.ieee.org/publications_standards/publications/rights/plagiarism_FAQ.html
- o http://www.cs.upt.ro/main.php?operation=content§ion=regulamente_master§id=23&slinkid=62
- o **Special format for Literature review:**
http://www.cs.upt.ro/data_files/content/contid_84/D2%20Specification%20DT%20Literature%20Review.doc