

Research Objectives and Questions

RSM 321 (Lecture 3)

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Summary of the previous lecture

- Criteria for scientific research:
 - Theoretical (or conceptual) framework
 - Methods should be valid and reliable
 - Data should be unbiased and objective
- Types of research
 - Several ways to make distinctions
 - Application, hypotheses, inquiry mode, observation (yes or no), source, type of discipline.
- Research process (research journey)
 - Stages in the research process:
 - Empirical cycle of fundamental research
 - Regulative cycle of problem solving



Focus of the present lecture

- Formulating a research problem
- Research objective
 - How to formulate the research objective?
 - Differences for fundamental and applied research
- Research questions
 - How to formulate general research questions?



Steps in formulating a research problem

Kumar (p. 48-50)

1. Identify a broad field of interest
2. Dissect the broad area into subareas
3. Select what is most of interest to you
4. Raise research questions
5. Formulate objectives
6. Assess your objectives
7. Double-check



Steps in formulating a research problem (example)

Step 1. Identify a broad field or subject area

- 'Improvement of the state of the environment and / or living conditions in developing countries'
 - Many possible subject areas
 - Erosion / land degradation



Steps in formulating a research problem (example)



Step 2. Dissect the broad area into subareas

- Causes of erosion
- The socio-economic effects of erosion
- A new technology to fight erosion
- The socio-cultural acceptability of a new technology to fight erosion
- Etc.

Step 3. Select what is of most interest to you

- A new technology to fight erosion



Steps in formulating a research problem (example)



Step 4. Raise research questions

- What is the effect of the new technology on soil erosion?
- What are the conditions (in terms of type of soil, geographical characteristics of the land, availability of labor, etc.) to apply the new technology?



Steps in formulating a research problem (example)



Step 5: Formulate objectives

Main objective:

- To find out the effectiveness of a new technology to fight erosion

Sub objectives:

- To assess the effect of the new technology on the thickness of the fertile layer of the land
- To determine the effectiveness for different types of landscape



Steps in formulating a research problem (example)



Step 6: Make sure

- Assess the feasibility of your objectives
 - (time, resources, expertise)

Step 7: Double-check

- Are you really interested and able to do this study?



Conclusions and hints

- Dissecting and selecting are the most difficult steps
- Formulating a research problem means: dissecting and selecting, and always again: focus and delineate!
- For dissecting and selecting, and for identifying your research objectives, you may use the empirical cycle and/or the regulative cycle



The research objective



- The research objective describes the motivation to do the research
- Research questions relate to the knowledge that you hope to acquire



The research objective



- Objective in a theory oriented research project:
To produce knowledge
- Objective in a practice oriented research project:
To help solve a practical problem through producing knowledge



The research objective in practice or. res.



- Research cannot solve practical problems directly
- Research can only generate knowledge. The knowledge may contribute to the solution of a practical problem.

Therefore, the research objective should relate to the knowledge to be generated as well as to the practical problem to be solved.



Examples of practice oriented research



Problem to be solved:	Knowledge to be generated:
To improve the economic position of small cocoa farmers in Ghana	To investigate the major problems small cocoa farmers in Ghana face
To reduce the application of pesticides by rice farmers in India	To make an inventory of the available alternatives
To improve the viability of the beaver population in the 'Biesbosch'	To compare five policy options which might improve population viability
To reduce smoking in the Netherlands	To find out (1) the characteristics of smokers and (2) their motives to smoke





Components of the research objective

- Objective in relation to the problem: states the problem to be solved
(only in a practice oriented research project)
- Objective in relation to the research: states the knowledge to be produced
(both in a practice oriented and in a theory oriented research project)



Research objective in practice oriented research



- The objective of the research is to help solve problem X by investigating/analyzing/evaluating Y
- ‘The objective of this research project is to improve the economic position of small cocoa farmers in Ghana by investigating what major problems these farmers face.’



Ex.: Research objective in practice oriented research



The objective of this research project is to improve the economic position of small cocoa farmers in Ghana

by ...

- investigating what the major problems are these farmers face,

OR

- testing the effectiveness of 3 alternative means for generating sufficient income for these farmers,

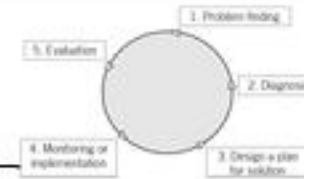
OR

- evaluating the measures that have already been taken to improve their economic situation.

ETCETERA



The regulative cycle

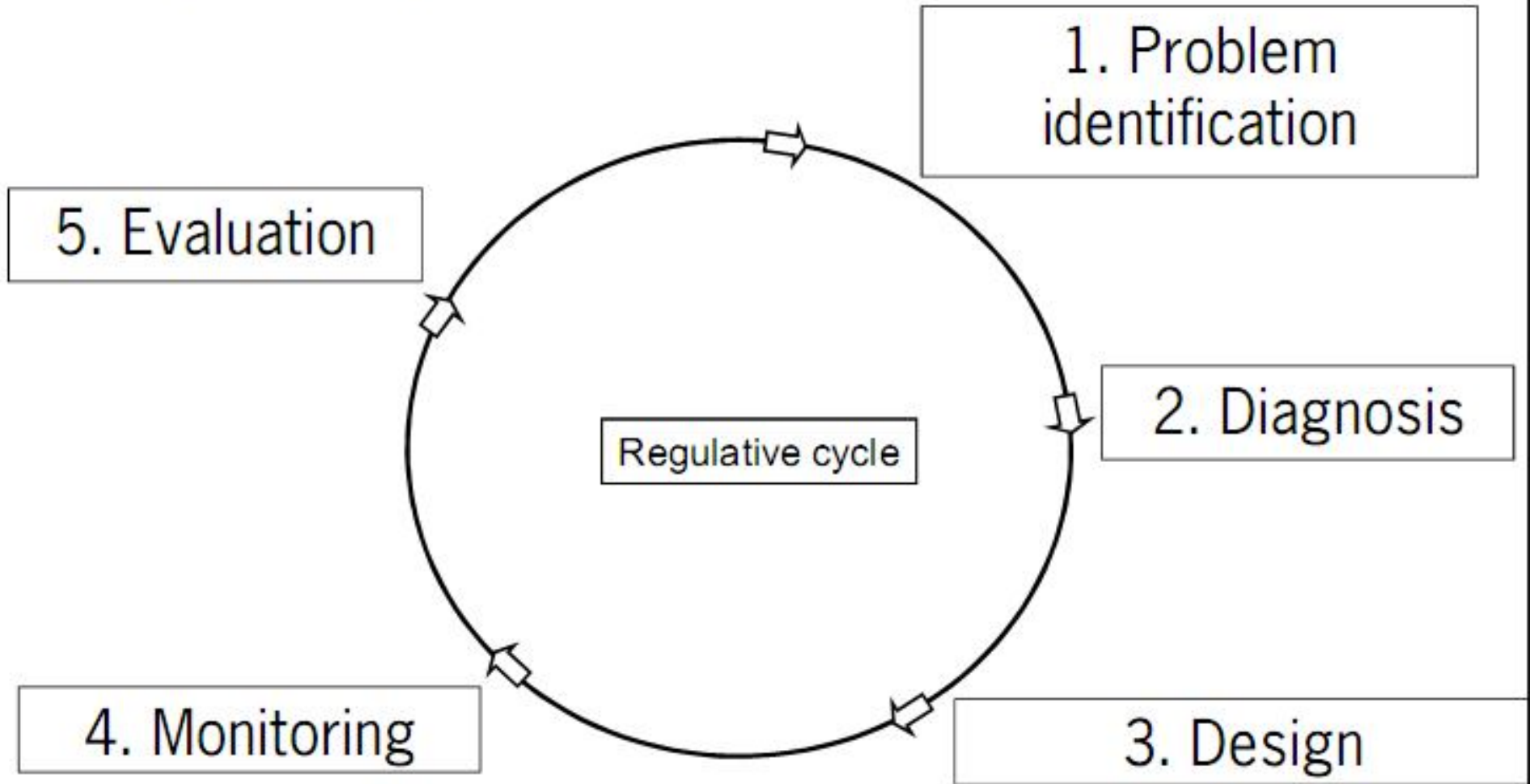


- The regulative cycle is a tool that describes the steps that are necessary to systematically solve a practical problem
- We can use it in order to decide about the kind of knowledge (and thus the research question) that is appropriate





Regulative cycle



Exercise



- Discuss with your group where your research project is to be located in the regulative cycle, the empirical cycle or both cycles
- Formulate a research objective for your research project
- For a practice oriented research project, think about the formulation: the objective of the research is to help solve problem X by investigating/analysing/evaluating Y



Research questions



- A set of questions that need to be answered during the research project in order to realize the research objective.

- It consists of:
 - one (or more) general research question(s)
 - several specific research questions **for each** general research question



Research questions



- Ask yourself which knowledge is useful or necessary in order to realize the research objective.



Research questions (example 1)



Research objective	General research question(s)
To improve the acceptability of vacuum toilets in the Netherlands BY studying why people refuse a house with a vacuum toilet	Which motives do people (who want to move to a newly built house) have to refuse a house with a vacuum toilet?



Research questions (example 2)



Research objective	General research question(s)
To decrease soil erosion on farms in the Ethiopian Highlands BY investigating the contribution of different farming methods to soil erosion	<ul style="list-style-type: none">■ What is the influence of different farming methods on soil erosion?



Research questions (example 3)



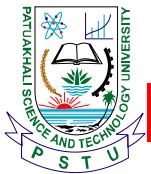
Research objective	General research question(s)
<p>To improve cleanliness of kitchens in student houses BY evaluating the effectiveness of the methods students use to clean their kitchens.</p>	<ul style="list-style-type: none">■ How effective are the methods students apply in keeping their kitchens clean?



Homework

Set your-

- ❖ Research title
- ❖ Research objectives
- ❖ Research questions



Thank YOU



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Questions??