

### M506

### **Research Method and Scientific Work:**

Research Design I: What Role Does Theory Have In Your Research?

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# Task: Continue Formulating Research Problem



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# Break down research problem by formulating specific (sub)-research questions (Important: You need as

many research questions as your group has team members, as every member will work on one sub-research question for the final assignment!)

	Research problem	
Management objective	Research objective	Research questions
To improve the customers' waiting experience, customer satisfaction and service evaluations.	The purpose of this study is twofold: (1) to identify the factors that influence the passengers' waiting experience and (2) to investigate the possible impact of waiting on customer satisfaction and service evaluations.	<ol> <li>What are the factors that affect the perceived waiting experience of airline passengers and to what extent do these factors affect the perception of waiting times?</li> </ol>
		2. What are the affective consequences of waiting and how does affect mediate the relationship between waiting and service evaluations?
		3. How do situational variables (such as filled time) influ- ence customer reactions to the waiting experience?



# Inductive and Deductive Research

Scientific / Academic Representation of Reality



Empirical Reality (positivist, interpretivist)

# Inductive and Deductive Research



Scientific / Academic Representation of Reality



## Information literacy

### The seven key information skills associated with information literacy (SCONUL, 2011)

- 1 The ability to identify a personal need for information ('identify' information)
- 2 The ability to assess current knowledge and identify gaps ('scope' information)
- 3 The ability to construct strategies for locating information and data ('plan' information)
- 4 The ability to locate and access the information and data needed ('gather' information)
- 5 The ability to review the research process and compare and evaluate information and data ('evaluate' information)
- 6 The ability to organise information professionally and ethically ('manage' information)
- 7 The ability to apply the knowledge gained: presenting the results of the research, synthesising new and old information and data to create new knowledge and disseminating it in a variety of ways ('present' information).

These skills are discussed at various points in this book – most notably in this chapter and Chapters 8 and 9, but also in Chapters 11, 16–18 and 24.

### GISMA

A Conceptual Model: What are the Variables and their Relationships of my Research?

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Example Research Question:

What is the impact of nutritional information on the packaging of food products on the making of informed nutrition choices?



## What are Conceptual Models There For?

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Any research project needs to be based on three features:

- 1. A clear understanding and definition of the variables considered relevant to the study
- 2. A conceptual model that describes the relationship between the variable in the model
- 3. A clear explanation of why you expect these relationships to exist
- → For Deductive Research: Preparatory steps for hypothesis development!
- → For Inductive Research: Analytical result of data analysis

## Independent and Dependent Variables GISMA





Independent variable

# Moderating and Mediating Variables

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#### Moderating variable (DV)

- Has a contingent effect on the relationship of IV and DV
- Modifies (enhances, dampens, but does not suspend) the relationship between IV and DV

#### Mediating variable (IV)

- Explains how the IV and DV are related in processual terms
- Explains the outcome (DV) at the point when it occurs



### Example of a conceptual model



Figure 1. Conceptual framework

Question: How do you read/interpret the graphic? What does it tell you in terms of the hypotheses?

# **Group assignment: Build your Conceptual Framework**

#### • Task:

- 1. What are the theoretical issues touched on in your research question?
- 2. How could I break them down into variables?
- 3. What dependent variables should be considered?
- 4. What independent variables can be identified?
- 5. What moderating variables can be identified?
- 6. What mediating variables can be identified?
- 7. Sketch out the variables and their relationships! (Conceptual Model)

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# From Conceptual Models to Hypotheses: What are Hypotheses?



- Hypothesis
  - a testable statement of relationships among variables
  - Statement of your prediction
- Directional hypotheses: Indicated the direction of impact between two variable
- Nondirectional hypotheses when it is not clear to you what direction the relationship of the variables might take
- Null hypothesis
  - states that there is no effect from the independent on the dependent variable
  - When contradictory information make it impossible to predict which direction or which effect is likely to occur

## Creating Hypotheses out of Conceptual models





Figure 1. Conceptual framework

Source: Hamid et al., 2013

H1: The Quality of Information has a strongly negative effect on the Perceived Intrusiveness.

H2: The Level of Entertainment has a negative effect on the Perceived Intrusiveness.

H3: Financial Rewards have a negative effect on the Perceived Intrusiveness.

#### Question 1: How would H4 to H8 be stated?

Question 2: Are those directional or nondirectional hypotheses?

**Question 3: Can you give one example of a** 13 **null-hypothesis that would fit to this model?** 

# Advanced Concept: Testing Hypothesis GISMA through Triangulation

### The idea: Use different approaches to test/verify results

- 1. Method triangulation different methods
- 2. Data triangulation different data from different points in time or sources
- 3. Researcher triangulation multiple researchers collect data
- 4. Theory triangulation

### Maintain consistency:

- Intrasubjective: applying the same methods of analysis to data from the same set
- Temporal: applying the same methods of analysis to data at  $t_1$  and  $t_2$ ,  $t_3$ , ...
- Intersubjective: researcher A applying the same methods of analysis to data as researcher B

Hypotheses are to be tested through Empirical Research! What to Consider?



Do not try to force a positive answer to your hypothesis, by:

- Choosing supporting arguments or data while ignoring the weakening arguments;
- Changing your data set or looking only at certain parts to avoid to inclusion of contradicting data;
- relying on the support of "big names" of authors who said something supportive a big name does not make it right.

 $\rightarrow$  If you doubt your hypothesis is correct, offer a well-balanced discussion that takes both the supporting evidences and arguments and the disconfirming evidences into a account. Think also about how your hypothesis would need to be altered to address the doubts.

### Test Results of A Conceptual Model



Note: 1. Standardized path estimates are reported with *t*-values in parentheses 2. \**p*<0.05; \*\**p*<0.01: \*\*\**p*<0.001

Figure 2. Estimation goodness-of-fit and hypotheses testing: Pooled sample

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### **Group-Homework:**



 Create a workable version of your conceptual model and formulate the corresponding hypotheses!



Figure 1. Conceptual framework