

# Quantitative methods

## Lesson 4

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# Operationalization

A catchy example (continued)

Do you have a best friend?

- Yes, I have one or two best friends with whom I share almost everything.
- Yes, I have several friends whom I consider to be my best friend.
- No, I don't have a best friend.

Why do we need a friend?

- We need someone to confide into.
- We need someone who can listen to all our tantrums.
- We need someone with whom we can have fun.
- All of the above.
- We don't really need friends.

Source: <http://www.samplequestionnaire.com/mcgill-friendship-questionnaire.html>

# Levels of Measurement

Qualitative and quantitative variables in depth

## Qualitative variables:

- Nominal: exhaustive labels with no intersect (mutual exclusivity) not in a specific order
- Ordinal: an (possible) ordered variable with exhaustive labels not intersecting

	Nominal	Ordinal	Interval	Ratio
Classification	X	X	X	X
Rank order		X	X	X
Equal intervals			X	X
Nonarbitrary zero				X

## Quantitative variables:

- Interval: equal distances between the ordered labels (numbers)
- Ratio: a scale with a zero point

# Levels of Measurement

## Examples

**Determine the level of measurement of the following variables!**

- Gender
- Education
- Salary
- IQ
- Scholastic record
- Place of birth
- Favorite color

# Final examination questions

## Comprehensive exam

Singleton, R. A. Jr. and Bruce C. Straits (1999): *Approaches to Social Research*. Third Edition. Oxford University Press: New York/Oxford.

### Questions:

- 1 **What is reliability?** *How do the main rules concerning the order of survey questions improve the reliability and validity of survey data?* (pp. 113-117, 292-296)
- 2 What is meant by probability sampling? How do stratification and multistage cluster sampling affect sampling errors? Why? (pp. 141-142, 145-156)
- 3 What are the main types of non-probability sampling? Explain why these types do not meet the criteria of probability samples. (pp. 157-169)
- 4 What factors affect the desired sample size? (pp. 163-169)

# Survey Design

As art

What is this mixed metaphor? How to do it right?

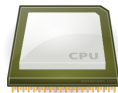


# Survey Design

How to get reliable and valid responses?

Respondents have to . . .

- 1 comprehend the literal and intended meaning of the question,
- 2 retrieve the information requested from memory,
- 3 formulate a response in accord with the question and the information retrieved,
- 4 communicate a response deemed appropriate.



Source: Singleton-Stairs (1999: 280)



# Survey Design

## Types of questions

Purposes of choosing:

- 1 open-ended (free-response) or
- 2 closed-ended (fixed-choice) questions.

Advantages and disadvantages of:

- 1 direct and
- 2 indirect questions.

What is coding?

# Survey Design

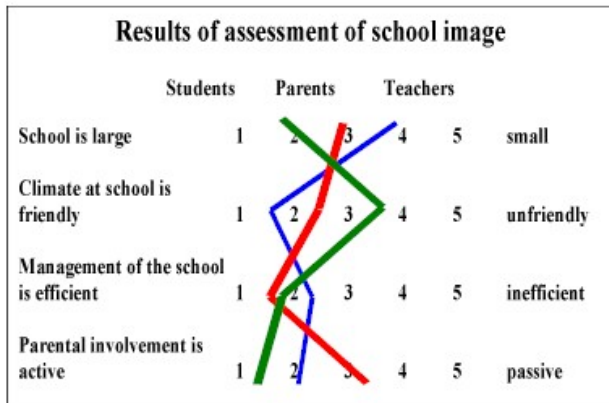
## Types of responses

Giva an example of different response formats and argue your choice:

- 1 dichotome,
- 2 „don't know”, „no opinion”, „no response”,
- 3 Likert response,
- 4 numerical rating scales,
- 5 scales crossing zero (with negative values),
- 6 ranking labels,
- 7 semantic differential scale.

# Survey Design

## Semantic differential scale



# Survey Design

## Order of questions and responses

Where (please specify!) would you put a . . . question in the questionnaire?

- 1 question dealing with sensitive subjects,
- 2 demographic data,
- 3 complicated, large matrix-like questions,
- 4 routine questions,
- 5 attributes in a nominal or ordinal variable.

# Survey Design

## Dreadful questions - a bad example

How often do you play World of Warcraft?

- never
- rarely
- once a year
- not very often
- often

How often do you pay in your tuition fees?

- ...



# Survey Design

## Dreadful questions - a bad (double-barreled) example

Do you think you'd be a better presenter if you received some type of professional training and all required equipments including a laser pointer?

- yes
- no

Do you think you'd be a better presenter if you received some type of professional training and all required equipments including a laser pointer?

- yes, if I could attend to a pro. training
- yes, if I would get my laser pointer
- yes, if I could attend to a pro. training **and** also get my laser pointer
- no, I would not become a better presenter in any way

# Survey Design

## Dreadful questions - a bad example

Please specify the model number of your last bought laptop:

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Please choose your operating system from the below list running on your computer:

- Windows '95
- Windows XP
- Windows 7
- Windows Vista Business
- RedHat Linux
- Intrepid Ibex
- MacOS



# Survey Design

## Dreadful questions - a bad (leading) example

How often do you check your Facebook profile?

- every hour
- once a day
- twice a week
- every month

Do you agree with Professor Sumetrolin that death penalty should be forbidden?

- yes
- no, because there are a lot of bad people
- no, because Prof. Sumetrolin has nothing to do with laws as being a professor in chemistry



# Survey Design

## Dreadful questions - order

How do you feel about marital statuses?

- being single equals to freedom
- being married is so boring
- I would never marry anyone in my life

Please specify your marital status:

- single
- married
- divorced
- ...

What if the questions were ordered backwards?



# Survey Design

Dreadful questions - sensitive questions

Have you ever paid for sexual services?

- yes
- no

How would you ask a question in this subject?

# Survey Design

## More examples

How many books did you buy in the last 5 years?

- 50-100
- 100-200
- 200-500
- 500-20.000

How would you improve the above question?

# Survey Design

## More examples

Do you have a driving licence?

- yes
- no
- I am a learner-driver.
- I used to have.

How would you improve the above question?

# Survey Design

## More examples

How do you travel in the capital?

- by car
- on foot
- cycling
- scooter!

How would you improve the above question?

Which newspaper do you read regularly?

- Story
- Blikk
- Star
- other (please specify)

How would you improve the above question?

# Survey Design

## More examples

Do you prefer watching TV or reading news on paper?

- reading newspapers
- watching TV as I like movies
- watching TV as I have no time for reading
- both
- reading newspapers as being more reliable compared to TV

How would you improve the above question?

# Survey Design

## More examples

You are traveling by bus and a homeless person sits down on the seat next to you. What do you do?

- I get down from the bus at the next station.
- I ask him to leave.
- I remark loudly about his odour.
- I try to make no attention to him but having a hard time.
- Nothing.

How would you improve the above question?



# Survey Design

## More examples

Do you use public vehicles?

- yes
- no
- rarely

How would you improve the above question?

# Survey Design

## More examples

How many award do you have?

- one
- two
- three

How would you improve the above question?

# Survey Design

## More examples

How many people in your surroundings do you think have ever thought about traveling to Mexico?

- everybody, Mexico is so cool
- no one
- less, than 50 percent
- more, than 50 percent

How would you improve the above question?

# Survey Design

## More examples

What do you think about hooligans?

- I cast stones at them.
- I go home to them.
- Nothing.
- I am a hooligan.

How would you improve the above question?

How often do you play truant on public vehicles?

- Every day, as I have no money to buy tickets.
- Every day, as I think public transport should be free.
- Never.
- A few times.

How would you improve the above question?

How much alcohol do you drink on a common friday night?

- none
- 1-2 beers
- 3-4 beers
- 5-6 beers

How would you improve the above question?

# More practice

Making up a questionnaire

Customer Feedback  
provide us feedback on the

Excellent	Very Good	Average
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

It was a pleasure!

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