

AdTrans 2023-1-PL01-KA220-HED-000158917



# Professional work methods

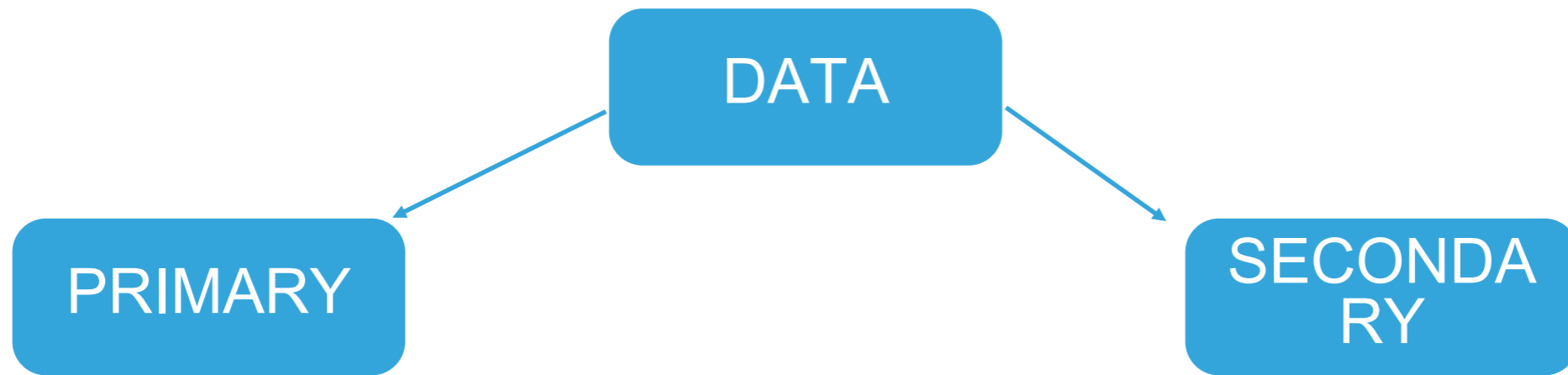
Ing. Lucie Vávrová

# DATA

- ▶ data represents a certain “raw material” from which information is subsequently created
- ▶ they depict the current state of reality
- ▶ data can be:
  - ▶ **primary** = we collect information ourselves through various methods
  - ▶ **secondary** = we use previously collected data

# DATA - BREAKDOWN

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- ▶ observation
- ▶ document analysis
- ▶ questioning
- ▶ experiment

- ▶ database
- ▶ articles



- ▶ cannot be measured or converted into numbers
- ▶ low number of observations
- ▶ describe situations and relationships

- ▶ measurable, sortable, can be statistically tested
- ▶ can be objectively interpreted and generalized to the entire population
- ▶ high number of observations, resulting in a

- ▶ Collect not for the sake of collecting, but **for the fulfillment of goals** , for the purpose of the work. **Collection and evaluation are not the end, but the means .**
- ▶ Before the collection takes place, you need **to think about what and how you will evaluate** and prepare the collection accordingly.
- ▶ It is too late to detect an error during ongoing collection; it is necessary **to carry out a pre-collection (so-called piloting)** and try to evaluate it.
- ▶ **You won't be able to ask again,** so sometimes it doesn't hurt to collect more information than you want to use.
- ▶ **Pay attention to data comparability** - if we use data from different sources, it is necessary to verify whether it was obtained using the same method (e.g. when comparing data from individual countries; prices with VAT/prices without VAT; net/gross salary, etc.)

# WE DISTINGUISH SCIENTIFIC METHODS

- ▶ **COLLECTION** of (primary) data
- ▶ **EVALUATION** of data
- ▶ **Both processes are interconnected** – before collecting data, we must have an idea of its possible evaluation.
- ▶ All methods **have their own rules** – it is always necessary to familiarize yourself with the specific method for a given professional work.

# SAMPLE SELECTION FOR QUANTITATIVE RESEARCH

- ▶ It is necessary to eliminate selection errors and ensure the representativeness of the file
  - Representativeness of the set = can the results of the findings be applied to the rest of the population?
- ▶ **Sample selection can be:**
  - ▶ **simple random selection** - we select at random, everyone has an equal chance of being selected
  - ▶ **random stratified sampling** - we divide into “layers” and select representatives of each “layer”
  - ▶ **multi-stage random selection** - we randomly select only some of the groups (we perform further stages of selection randomly)
  - ▶ **quota sampling** - e.g. public opinion polls; the sample imitates known characteristics of the population

# QUESTIONNAIRE



- ▶ The most widespread, the most common
- ▶ Least time-consuming (quick to prepare and process)
- ▶ Cheap, reaches a large number of people, anonymized



- ▶ Option to skip a question
- ▶ Answered by another person, a group of people
- ▶ Low return (can be addressed with reminders, rewards for completing, etc.)

- 1. Defining the goal of the interview** - creating a list of information that the interview should bring,
- 2. choice of survey method** (personal, telephone, online, distribution of questionnaires in paper form, etc.),
- 3. definition and selection of the target group** of respondents,
- 4. construction of questions** in relation to the required information,
- 5. construction** of the entire questionnaire,
- 6. questionnaire testing** (piloting),
- 7. implementation** of a questionnaire survey.

## FORMULATION OF QUESTIONS

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- ▶ **formulate questions clearly** (eliminating guesses about what the author wanted to say with the question, eliminating ambiguous words)
- ▶ **exclude questions** asking about two or more different things at the same time
- ▶ **reasonable length** of questions
- ▶ **specificity** of the question
- ▶ understanding questions – **avoid foreign words** , the language should be **simple and understandable enough**
- ▶ **eliminate leading and misleading questions** that already suggest an answer
- ▶ Ask questions that relate to the respondent's **direct experience** .
- ▶ **don't force an answer** , be careful about the social desirability of the answer
- ▶ **defining the number of responses**
- ▶ space for the options **"I don't know, I can't answer"** or **"Other"**

# TYPES OF QUESTIONS

- ▶ **Open** - free response, but complicated to evaluate
- ▶ **Semi-closed** - answer options + possible addition (another answer)
- ▶ **Closed** - a set of all possible variants, all must be mutually exclusive; easy to process, easy to fill in
  - ▶ *Can be further divided into dichotomous, selection, scale, comparative, projection, etc.)*

## WHAT'S WRONG HERE?

povinná otázka

### 2. Jak často nakupujete oblečení?

- Každý týden
- Minimálně 1x do měsíce
- Minimálně 1x za tři měsíce
- Minimálně 1x za půlrok
- Minimálně 1x za rok
- Méně než 1x za rok

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ALL-DET  
CHOOS  
EXCLUDE OTHER ANSWERS

# WHAT'S WRONG HERE?

Kolik času denně věnujete své práci/studiu?

- Téměř všechn
- Více než 12 hodin denně
- Okolo 12 hodin denně
- Maximálně 6 hodin denně
- Méně než 3 hodiny denně
- Jiné: \_\_\_\_\_

## INTERVIEWING - EXAMPLES OF WRONG QUESTIONS

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RKING  
ERE (T  
HOURS" AND "MAXIMUM 6 HOURS", THE  
ANSWER FOR THE OPTION BETWEEN  
12-6 HOURS IS MISSING)

# INTERVIEWING - EXAMPLES OF WRONG QUESTIONS

## Sekce bez názvu

Jaká podle vás značka ETA je? \*

1 - velmi kvalitní, 2 - kvalitní, 3 - nevím, 4 - nekvalitní, 5 - naprosto nekvalitní

	1	2	3	4	5	
kvalitní	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	nekvalitní

\*

1 - velmi drahá, 2 - drahá, 3 - nevím, 4 - levná, 5 - velmi levná

	1	2	3	4	5	
drahá	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	levná

\*

1 - velmi moderní, 2 - moderní, 3 - nevím, 4 - staromódní, 5 - velmi staromódní

	1	2	3	4	5	
moderní	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	staromódní

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WRONG  
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	1	2	3	4	5	
drahá	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	levná

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moderní	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	staromódní

PROBLEMFUL FOR EVALUATION - IT CANNOT BE EVALUATED (SUCH DATA IS USELESS TO US), ESPECIALLY WHEN EVALUATING ON A SCALE

A "NEUTRAL OPINION" OR "Neither QUALITY OR NON-QUALITY" HAS BETTER

WHAT'S  
WRONG  
HERE?

Kolik šálek kávy denně vypijete? \*

- 1
- 2
- 3
- 4 a více

# INTERVIEWING - EXAMPLES OF WRONG QUESTIONS

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Kolik šálek kávy denně vypijete? \*

- 1
- 2
- 3
- 4 a více

THE  
OPTION  
"NONE  
OR  
LESS  
THAN 1" IS  
MISSING

Try to include all possible options in your answers. For some questions, it is appropriate to include the option "other".

## WHAT'S WRONG HERE?

Ovlivnila pandemie frekvenci využívání dopravních služeb poskytovaných přes internetové platformy? \*

	pandemie zvýšila frekvenci využívání služeb	pandemie snížila frekvenci využívání služeb	pandemie neovlivnila frekvenci využívání služeb
sdílení kol, koloběžek ap. (Bikesharing, Reko, Lime ap.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
alternativní taxislužby (Uber, Bolt app.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
sdílení míst v automobilech na delší vzdálenosti (Carp, BlaBlaCar, Jízdomat ap.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# INTERVIEWING - EXAMPLES OF WRONG QUESTIONS

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WE CANNOT ASK A QUESTION THAT THE RESPONDENT CANNOT KNOW (YET WE CAN ASK HIS OPINION)

IN THIS CASE WE CAN ASK IF HE THINKS THAT THE PANDEMIC HAS INFLUENCED THE FREQUENCY OF USE OF TRANSPORT SERVICES

# WHAT'S WRONG HERE?

### 14. Nakupujete pravidelně Fairtrade kávu?\*

Vyberte jednu odpověď

Ano



Ne

### 15. Zdůvodněte prosím svoji předchozí odpověď:\*

(proč nakupujete nebo nenakupujete Fairtrade kávu)

Napište jedno nebo více slov...

RESPONDENTS MAY NOT EVEN KNOW THAT THEY ARE BUYING FAIRTRADE COFFEE -> IT WOULD BE APPROPRIATE TO REFORMULATE THE QUESTION OR GIVE EXAMPLES OF BRANDS

## 14. Nakupujete pravidelně Fairtrade kávu?\*

Vyberte jednu odpověď

Ano



Ne

## 15. Zdůvodněte prosím svoji předchozí odpověď:\*

(proč nakupujete nebo nenakupujete Fairtrade kávu)

Napište jedno nebo více slov...

500

The respondent must be able to answer the question asked. Avoid using terms that the respondent is not familiar with. If you use a foreign or technical term, explain it to the respondent. You can also give examples.

## WHAT'S WRONG HERE?

### 1. Věk\*

Vyberte jednu odpověď

<16

16-24

24-55

>55

# INTERVIEWING - EXAMPLES OF WRONG QUESTIONS

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## 1. Věk\*

Vyberte jednu odpověď

<16

16-24

24-55

>55

AGE CATEGORIES ARE UNEVENLY DETERMINED - IN ADDITION, AGE 24 OCCURS IN 2 ANSWERS (WHERE TO CLASSIFY?)

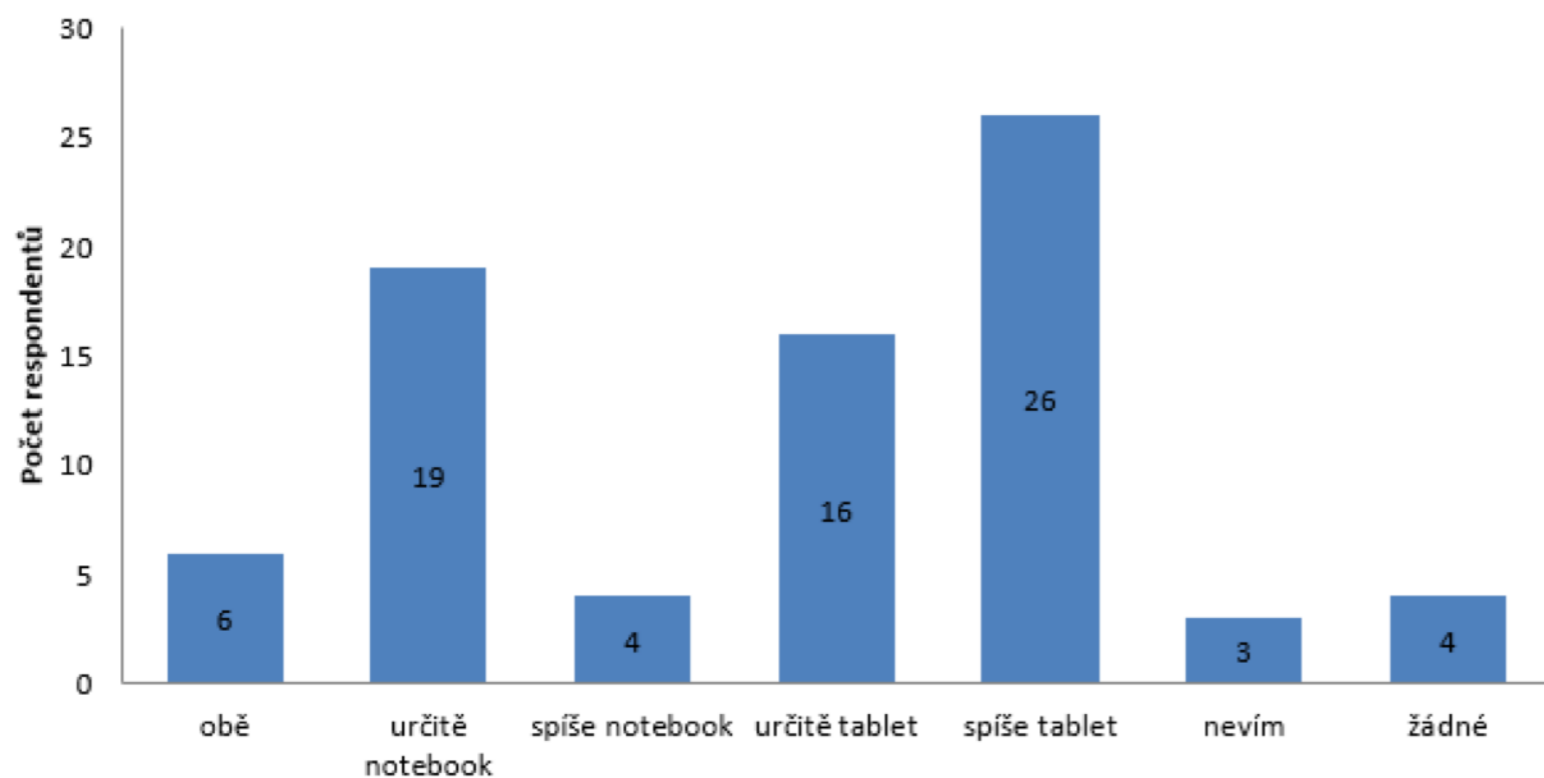
This is a common mistake with questionnaires - ideally, set the groups to be the same size

# HOW TO PRESENT QUESTIONNAIRE RESULTS

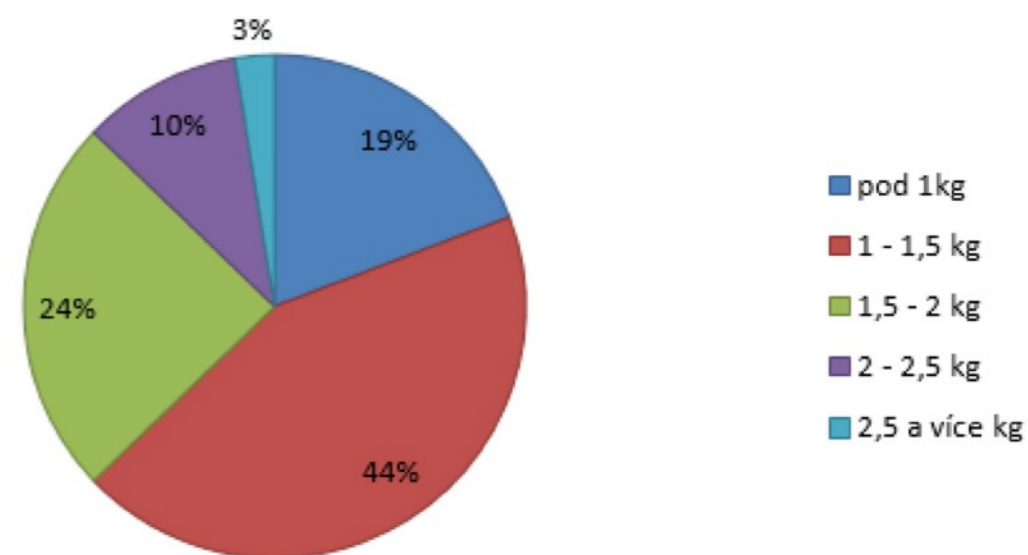
- ▶ The results obtained (not only) from the questionnaire survey must be interpreted
- ▶ It is appropriate to use graphic elements (see exercise 4)
- ▶ Graphic elements must be commented - you cannot just insert a graph/table without making it clear why it is in the work and what it depicts.

# EVALUATION OF THE QUESTIONNAIRE - EXAMPLE OF A NOTEBOOK VS. TABLET

Graf č. 2: Jaké zařízení byste zakoupili?



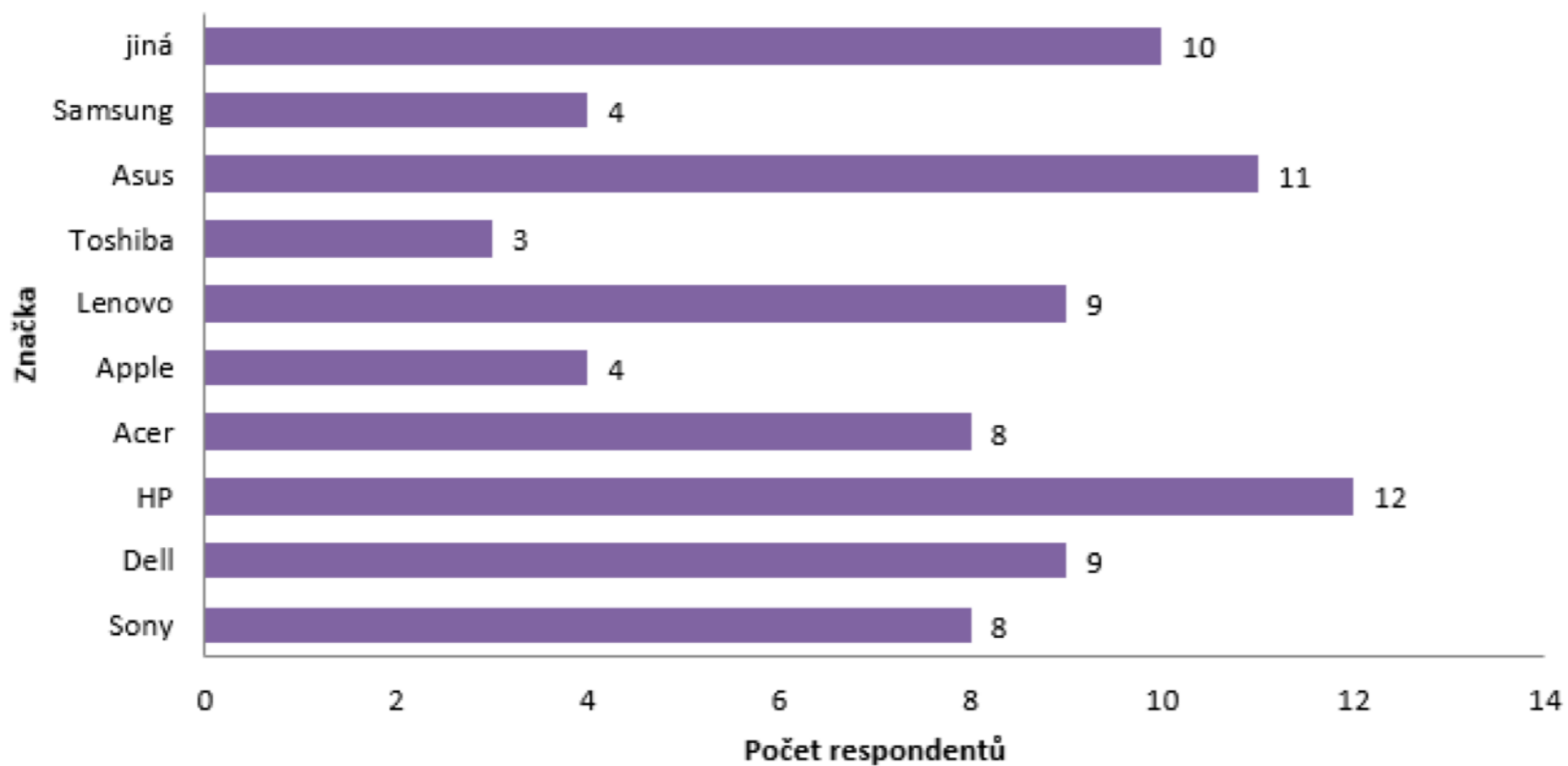
Graf č. 4: Jaká by měla být maximální hmotnost?



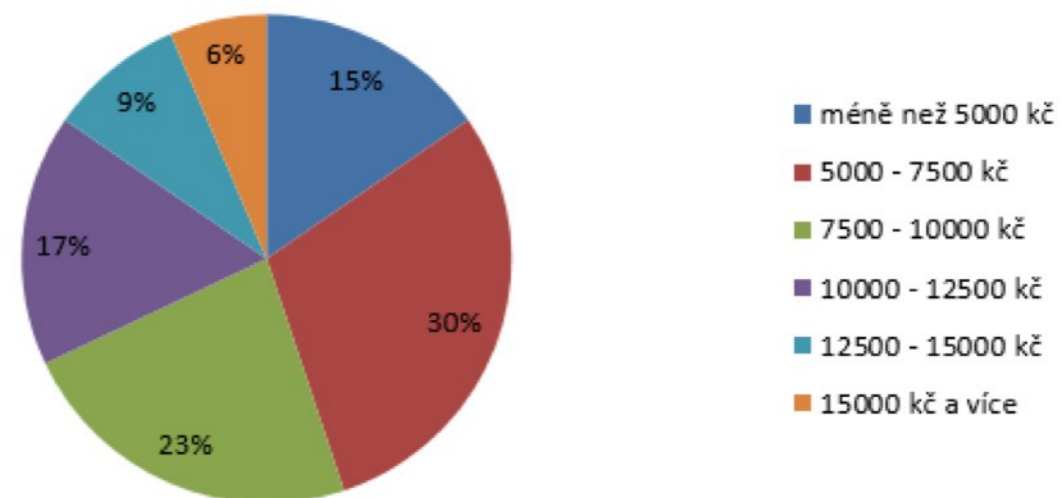
Zdroj: vlastní zpracování na základě vlastního šetření

# EVALUATION OF THE QUESTIONNAIRE - EXAMPLE OF A NOTEBOOK VS. TABLET

**Graf č. 5: Jaká by byla preferovaná značka?**



**Graf č. 7: Jaká by měla být maximální cena?**



Zdroj: vlastní zpracování na základě vlastního šetření

**Descriptive statistics** (data analysis/descriptive description) - simple frequency distribution of individual variables.

**Inductive statistics** - relationships between individual variables.

# STANDARDIZED INTERVIEW



- ▶ Minimizes the possibility of missing a response
- ▶ We are confident that the right person is responsible.
- ▶ Possibility of providing an explanation



- ▶ Laborious
- ▶ More time-consuming, requires a large number of respondents
- ▶ Less or minimal anonymity
- ▶ Distortion effect (respondent answers according to what he thinks the researcher wants to hear; does not want to give unpleasant answers)

- ▶ **Standardized interview**
  - ▶ It has rules, the researcher follows the text of the form
  - ▶ It is similar to a questionnaire and can be evaluated quantitatively
- ▶ **Individual interview** - with each respondent separately
- ▶ **Group interview** - a group of 6-10 participants is suitable, the disadvantage is the influence of opinions

# ECONOMIC EXPERIMENTS

- ▶ **Experiment** = an attempt carried out under controlled conditions
  - ▶ The purpose is to prove a known experience, verify hypotheses, determine the effectiveness of something previously untested.
- ▶ The researcher tries to simulate a certain situation —> **the ability to change conditions and observe how the results and behavior of the participants change**
- ▶ Experiment variants:
  - ▶ **An experiment in which all participants have the same conditions** (constant variables) - less demanding, but also provides less knowledge of the issue
  - ▶ **An experiment in which conditions are changed** (controlled variables) - possible monitoring of the dependence of the result on the changed conditions

# RESEARCH AND ITS BENEFITS

- ▶ Reality is examined in depth and in great detail
- ▶ A lot of information from a small number of individuals
- ▶ High validity - distortions are minimized (the chance of understanding the problem under study increases)

QUANTITATIVE RESEARCH - LIMITED INFORMATION ABOUT MANY INDIVIDUALS; THE GOAL IS TO TEST HYPOTHESES

RESEARCH - A LOT OF INFORMATION ABOUT A SMALL NUMBER OF INDIVIDUALS; THE GOAL IS TO CREATE NEW HYPOTHESES AND THEORIES

## NARRATIVE INTERVIEW (IN-DEPTH INTERVIEW)

- ▶ A standardized interview looks like reading a questionnaire
  - ▶ **In-depth interviews**, on the other hand, take the form of a confidential (spontaneous) conversation
- ▶ Ideally, the interview should be recorded on a dictaphone or camera (with the respondent's consent).

## OTHER POSSIBLE METHODS OF QUALITATIVE RESEARCH

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- ▶ **Case studies** - detailed study of a case in order to apply/understand the findings
- ▶ **Focus groups** - moderated discussion, in order to determine attitudes, opinions, public opinion
- ▶ **Participant observation** - the researcher observes as a member of the researched group

# SECONDARY DATA COLLECTION METHODS

- ▶ Processing existing data
- ▶ I need to find and sort the data into a form in which I can analyze it further.
- ▶ QUANTITATIVE DATA – statistics, databases, etc. ☐ quantitative methods, statistics
- ▶ QUALITATIVE DATA – strategic documents, previous studies, databases and other documents ☐ evaluation using qualitative methods + in some cases, data can also be coded (male/female) and converted to a quantitative format

Friedman, D., Cassar, A., & Selten, R.  
(2008). *Economics lab: An intensive course in experimental economics* .  
Routledge.

Olecká, I., & Ivanová, K. (2010). *Methodology of  
scientific research activities* . Moravian University  
Olomouc.

Sklenák, V. (2001). *Data, Information, Knowledge and the Internet* .  
CH Beck Publishing House

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**THANK YOU FOR YOUR ATTENTION!**

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