Lecture 3
Data collection methods and forms

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Agenda

1. Sources of data: primary and secondary
2. Errors made in a data collection process
3. Introduction to sampling

Marketing Research Process

Project Definition > Research Plan > Data Collection > Data Interpretation > Report
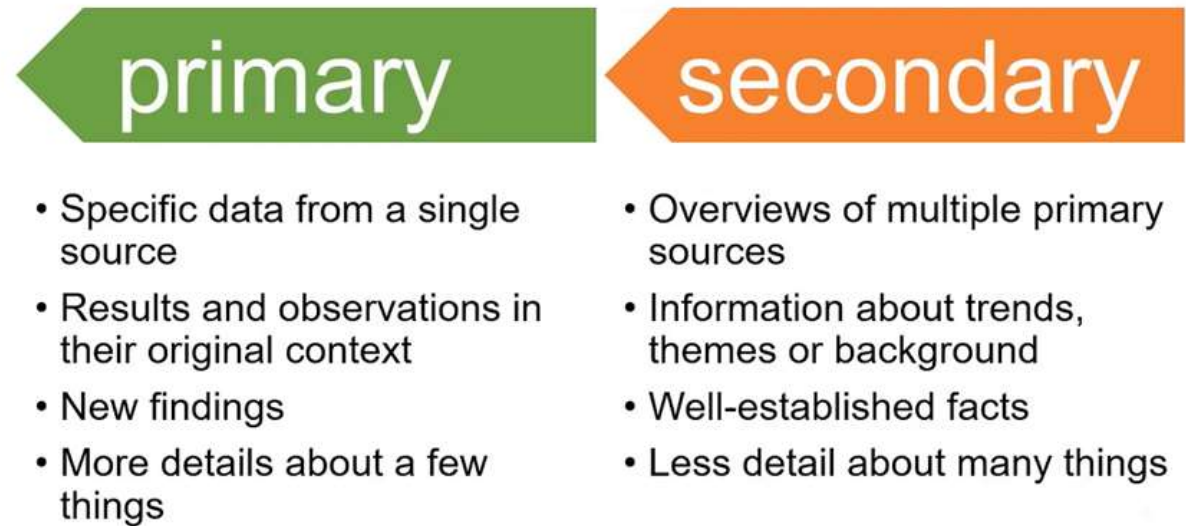
Rules for Collecting Data

- Use multiple data collection methods
- Use available data, but need to know
  - how the measures were defined
  - how the data were collected and cleaned
  - the extent of missing data
  - how accuracy of the data was ensured

Marketing research uses two sources of data: secondary and primary

Primary research involves finding out **new**, first-hand information. This is called primary data.

Secondary research involves gathering **existing** information. This is called secondary data.

primary
- Specific data from a single source
- Results and observations in their original context
- New findings
- More details about a few things

secondary
- Overviews of multiple primary sources
- Information about trends, themes or background
- Well-established facts
- Less detail about many things

Primary Sources vs Secondary Sources

Primary Sources

A piece of evidence created by someone at the time of the event.

Examples include:
- Letters
- Diaries
- Government records
- Autobiographies
- Artifact
- Computer software

Secondary Sources

Information created by someone who was not present at an event, after an event happened.

Examples include:
- Newspaper articles
- Textbooks
- Biographies
- Encyclopedias
- Dictionaries
- Atlases

Secondary sources are characterized by easy availability without the need to carry out one's own expensive research.

Sources of secondary data include:
- Market research reports
- Trade journals
- Trade fair catalogues
- Government statistics
- Sales and customer records
- Publications in the mass media
- Publications and reports of organizations, associations, societies, scientific centers
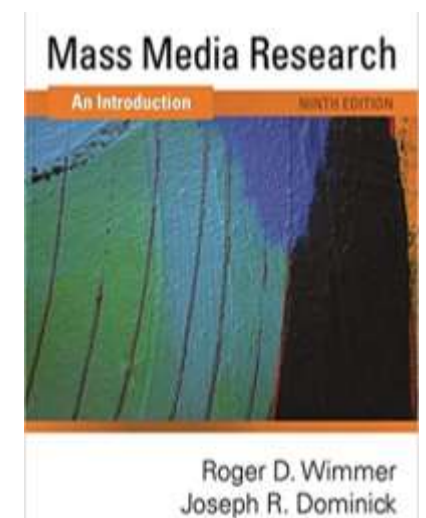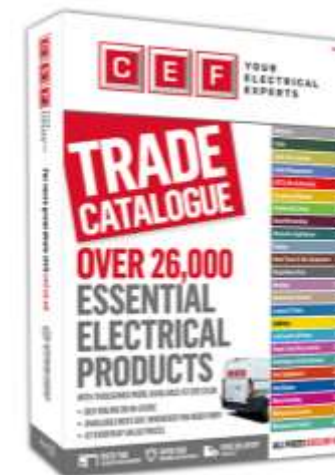
Sources of **primary data** include

| Direct research and treatments (company reports, questionnaires) | Personal interviews, mail and telephone interviews) | Observations | Experiments (tests, simulations) | Heuristic methods |

Heuristic methods (creative thinking) are mainly used in making subjective prognoses and are a source of *qualitative information*. The brainstorming method is a method of group thinking or, in other words, generating new ideas like in the *Critical Thinking method.*

Secondary data

Benefits	Drawbacks
•Often quick and easy to collect; •A wide range of secondary data is available, especially on the internet; •Aids in determining direction for primary data collection; •Serves as a basis of comparison for other data; •Longitudinal – same data has been collected from the same population over several different time periods; •Guided before data.	•Data may not be reliable or up-to-date; •May not be totally relevant; •May not be specific to your needs; •May not be in a form that is easily interpreted and analysed; •Data may be biased in favor of the person who gathered it; •You are not the owner of the data. Anyone can access it.

Primary data

Benefits	Drawbacks
•Directly relevant to the business, targeted problems are solved; •Up-to-date data obtained; •Source of data is known; •Can be collected from a variety of ways; •Competitors do not have access to the findings; •Data interpretation is better; •Greater control	•Time consuming; •Often expensive; •Results may be misleading if the sample size is too small, questions are unclear or there is interviewer bias; •Wider coverage: more number of researchers are required; •Trained persons required for data collection.

Primary data

Quantitative Approach

- Data in numerical form
- Data that can be precisely measured
  - age, cost, length, height, area, volume, weight, speed, time, and temperature
- Harder to develop
- Easier to analyze

Qualitative Approach

- Data that deal with description;
- Data that can be observed or self-reported, but not always precisely measured;
- Less structured, easier to develop;
- Can provide "rich data" — detailed and widely applicable;
- Is challenging to analyze;
- Is labor intensive to collect;
- Usually generates longer reports.

Which Data?

If you:	Then Use:
- want to conduct statistical analysis	
- want to be precise	Quantitative
- know what you want to measure	
- want to cover a large group	
- want narrative or in-depth information	
- are not sure what you are able to measure	Qualitative
- do not need to quantify the results	

Interpreting quantitative findings

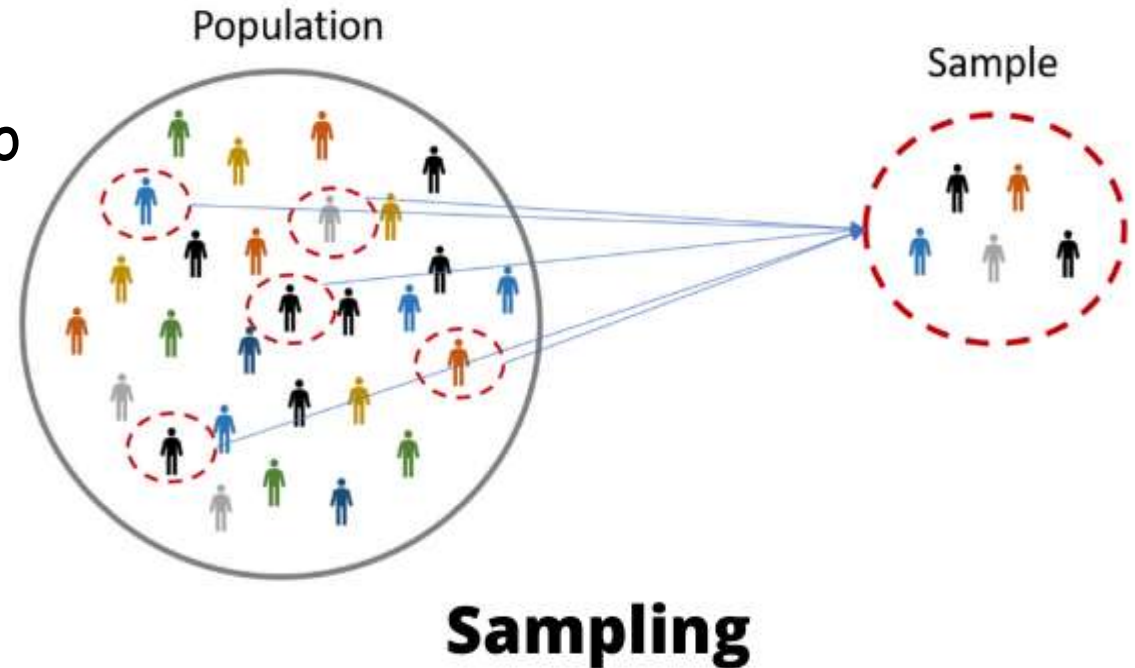Descriptive Statistics : Mean, median, mode, frequencies

Error analyses

Introduction to sampling

Sampling is the problem of accurately acquiring the necessary data in order to form a representative view of the problem.

This is much more difficult to do than is generally realized.

Sampling

The fundamental errors in sampling are:

- to choose an improper statistical population;
- low research budget which is reflected in choosing cheaper methods (instead of individual or group interviews questionnaires are used);
- errors connected with the construction of measuring instruments. The source of this error may be an inappropriate design of the measuring instrument.
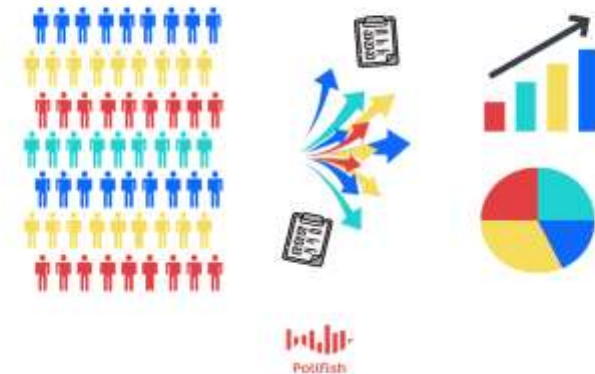
The fundamental errors in sampling are:

- wrong construction of the survey (a list of populations), which results from a difference between population defined by a researcher and a list of surveyed units.
- a lack of answer referred to in literature as the error of a lack of reaction. It happens when for various reasons the respondent does not answer the questions;
- abuse of work by researchers or even cheating;
- data reduction errors result.

The fundamental terms connected with sampling are: **population, sampling unit, sampling method, report.**

Population typically refers the number of people in a single area whether it be a city or town, region, country, or the world.
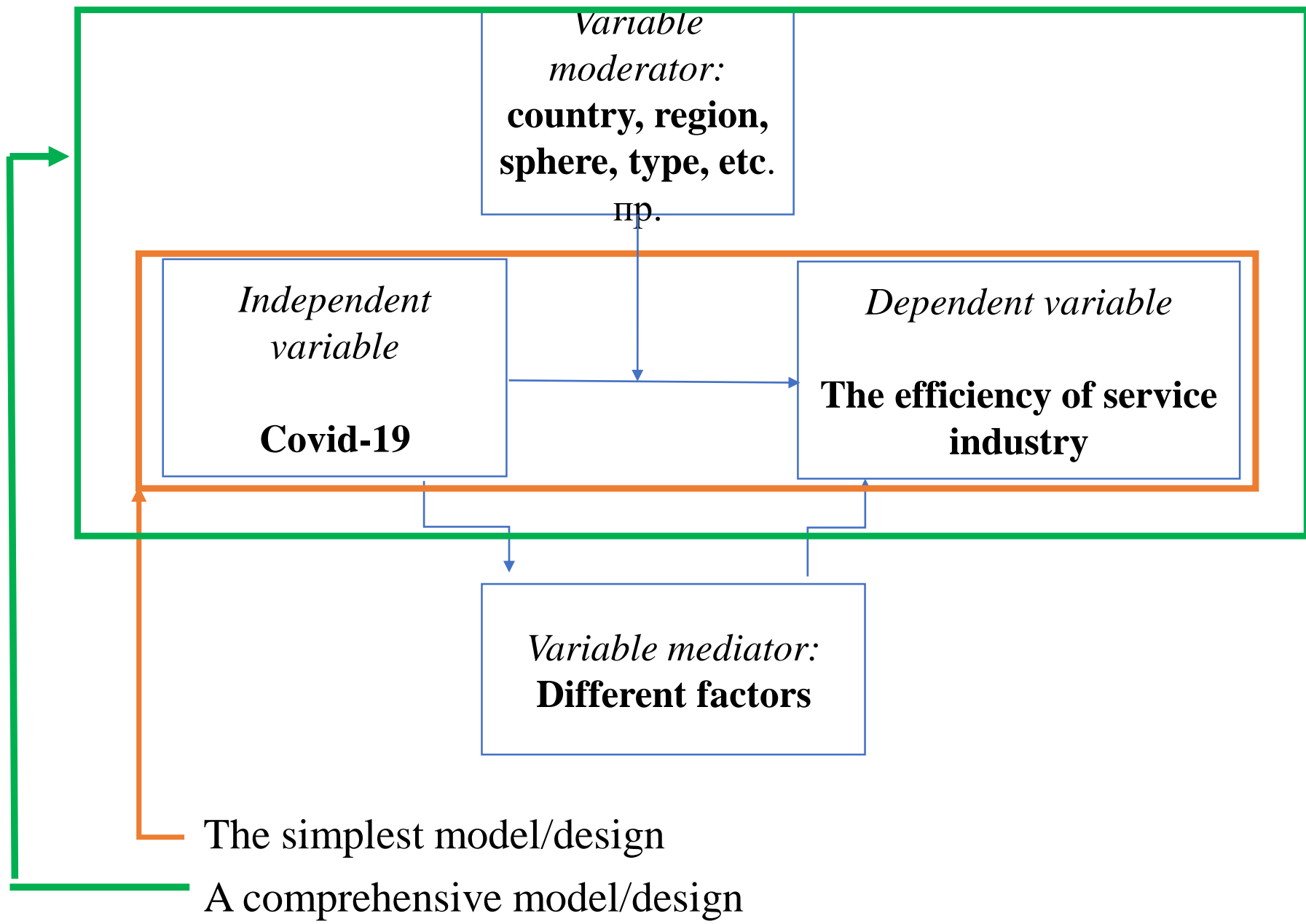
A sampling unit may be simple (individual), e.g. a respondent, an employee of a given department, a product.

A sampling methods: simple random sample, systematic sample, stratified sample, cluster sample.
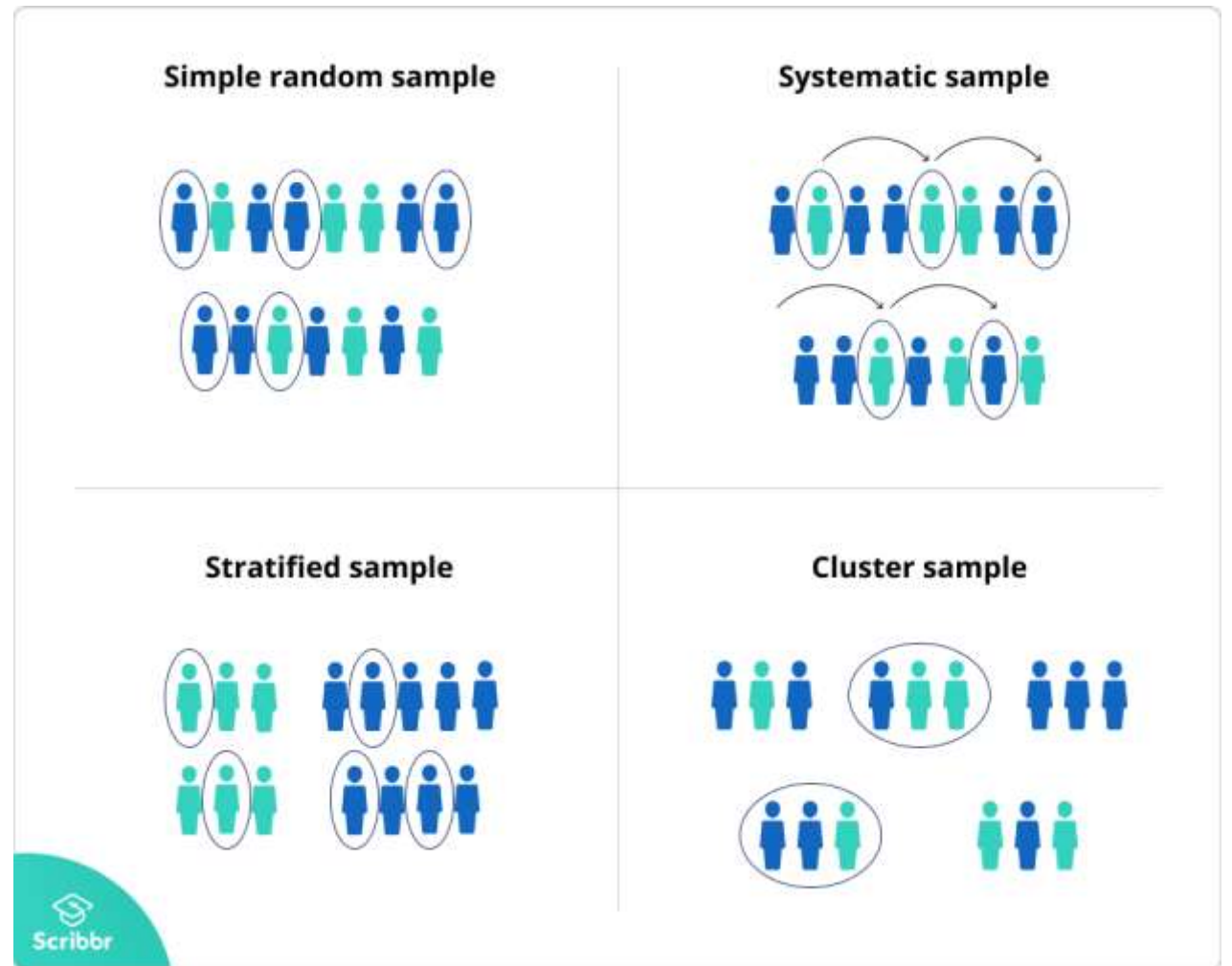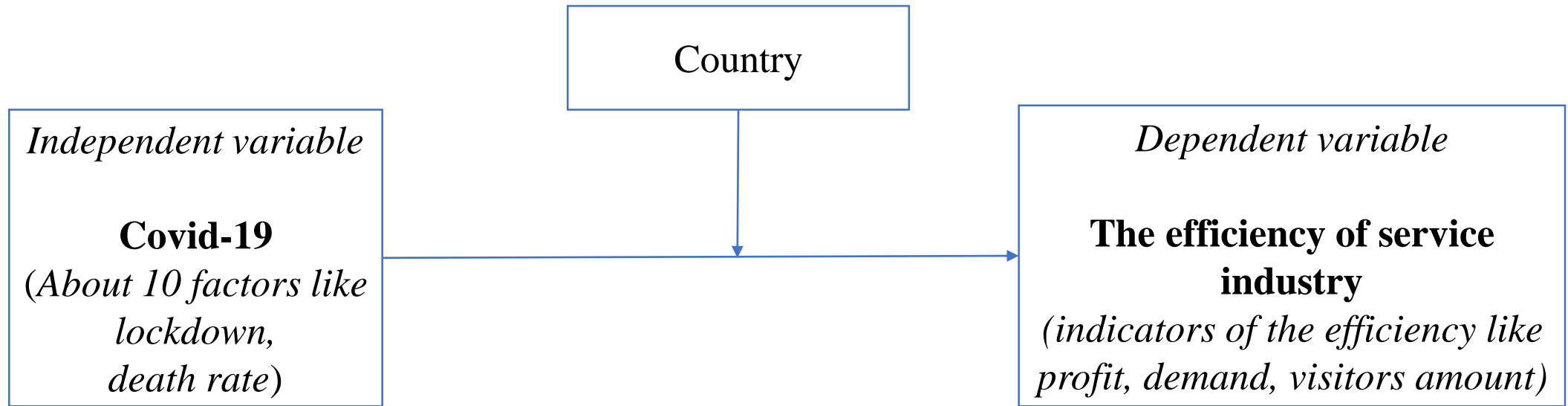
Sample sizes used in various types of marketing research (Kaczmarczyk 2003, p. 74).

TYPE OF RESEARCH	TYPICAL SIZE	MINIMUM SIZE
Market study	1000 – 1500	500
Strategic study	400-500	200
Market test	300-500	200
Test of a product concept	200-300	200
Test of a name variant	200-300	100
Test of a radio commercial	200-300	150
Test of a press announcement	200-3000	150
Packaging test	200-300	100
Test of a TV commercial	200-300	150
Focus-group interview	8 - 12/region	8/region

Variable moderator:
country, region, sphere, type, etc. пр.

Independent variable

Covid-19

Dependent variable

The efficiency of service industry

Variable mediator:
Different factors

The simplest model/design

A comprehensive model/design

Variables:

1. Covid-19: secondary sources, statistics, in-depth interviews (Likert scale)
2. Efficiency: Financial and non-financial indicators of service companies.

Statistical methods (descriptive, regression, analysis of variance, etc.)

Data Collection Summary

Choose more than one data collection technique;

No "best" tool;

Do not let the tool drive your work but rather choose the right tool to address the evaluation question.

Marketing research methods

Research methods are split broadly into quantitative and qualitative methods.

Which you choose will depend on:
- your research questions
- your underlying philosophy of research
- your preferences and skills

Marketing research types

- Ad-tracking;
- Brand awareness;
- Brand name testing;
- Mystery shopping;
- Demand estimation;
- Price elasticity testing;
- Market research;
- Consumer behavior research.

Categories of research methods

Research methods are broadly distinguished between the following categories:

Quantitative

- ✓ **Measure prevalence** of issues, **verify hypotheses** and **establish causal relations** between variables

- ✓ **Large samples, structured** data collection, and predominantly **deductive** analysis

Qualitative

- ✓ **Explore and discover themes, develop theories,** rather than verify hypotheses and measure occurrences

- ✓ **Smaller samples, semi-structured** data collection, **inductive** analysis

Mixed Methods

- ✓ **Combines both qualitative and quantitative** to (1) collect and analyze both types of data and (2) use both approaches in tandem

Basis for Comparison	Qualitative Data	Quantitative Data
Definition	Qualitative data is information that can't be expressed as a number	Quantitative data is data that can be expressed as a number or can be quantified
Can data be counted?	NO	YES
Data type	Words, objects, pictures, observations, and symbols	Number and statistics

Methods of Marketing research

Quantitative
(Who? How much?)
- ✓ Finding numerical data;
- ✓ Collected from large samples;
- ✓ Easy to analyse;
- ✓ Analysed using statistical methods;
- ✓ Tells you if there is a "difference" but not necessarily why;
- ✓ Variables are controlled as much as possible;
- ✓ Mostly closed questions

Qualitative
(How? Why?}
- ✓ Finding out opinions, attitudes and feelings;
- ✓ More difficult to collect and analyse;
- ✓ Don't need large sample sizes;
- ✓ It can be very subjective;
- ✓ Open ended questions.

Quantitative

'20% of survey respondents bought ice cream today'

'The average amount spent on ice cream by 500 respondents was $5'

'50% of people in New York strongly enjoy pizza'

'On average, respondents rate their grocery store a 3.5 out of 5'

Qualitative

'I bought the ice cream because I saw it when I was in the checkout line - I wanted to treat myself.'

'I like a lot of toppings on my pizza - cheese, sauce, pepperoni, olives.'

'The grocery store has good options in general but the lines can be long and they are often out of stock of my favorite brands.'

Example correlations
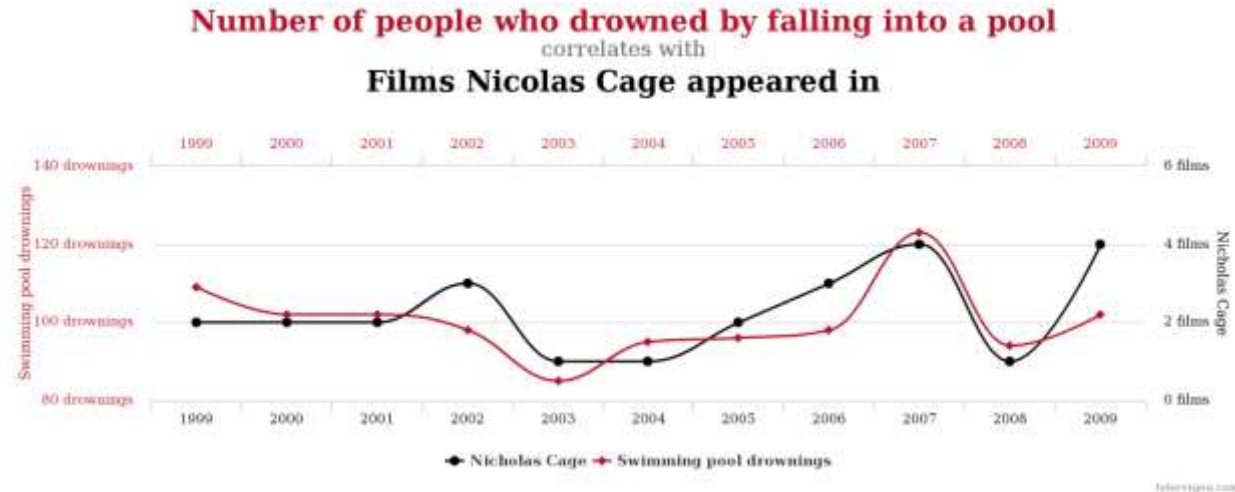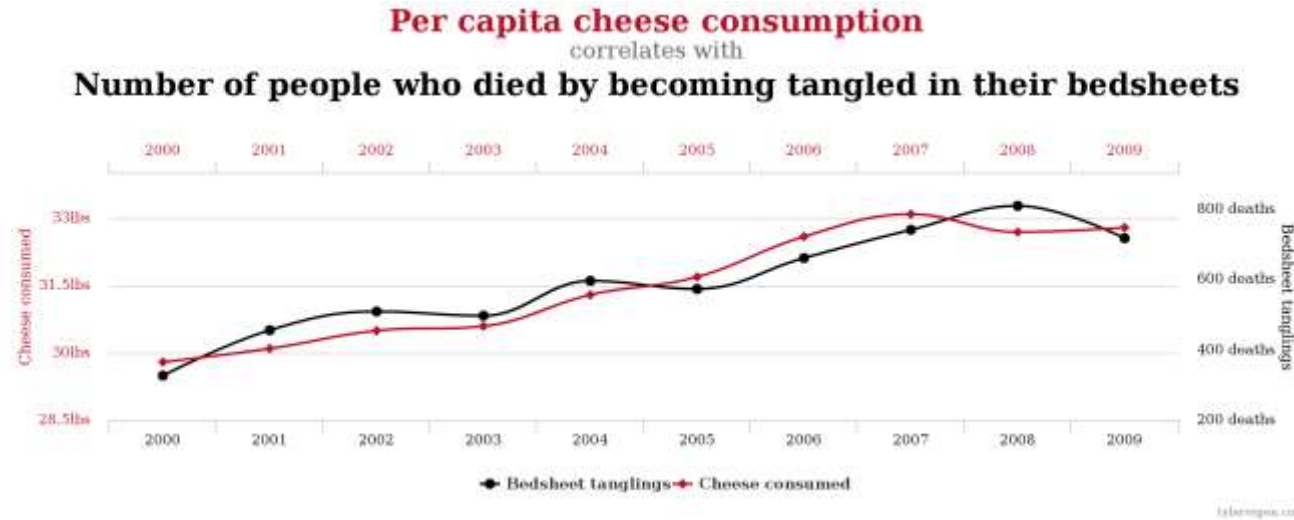
From 'Spurious correlations' website
http://www.tylervigen.com/spurious-correlations

Interpreting test statistics

- Significance level – a fixed probability of wrongly rejecting the null hypothesis H_0, if it is in fact true. Usually set to 0.05 (5%).

- p value - probability of getting a value of the test statistic as extreme as or more extreme than that observed by chance alone, if the null hypothesis H_0, is true.

- Power – ability to detect a difference if there is one

- Effect size – numerical way of expressing the strength or magnitude of a reported relationship, be it causal or not

Analysing qual data

- Content analysis

- Grounded analysis

- Social network analysis (can also be quant)

- Narrative analysis

- Conversation analysis

Selecting your research method

What factors to consider when choosing one research method over another?

✓ Overall applicability to meet research objectives

✓ Time i.e. key planning and decision-making milestones to inform

✓ Resources available

    ✓ Material resources

    ✓ Financial resources

    ✓ Human resources

✓ Access to population of interest

Time

Resources /Access   Quality
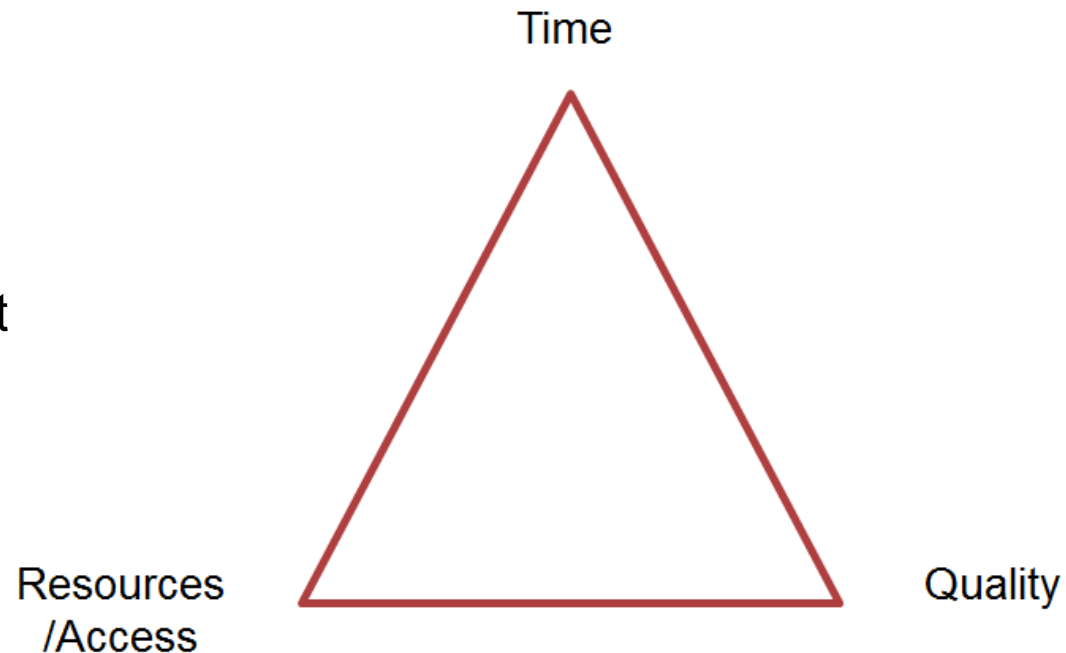
What is it?

➤ The **unit that will be used to record, measure and analyse** observations/ information collected
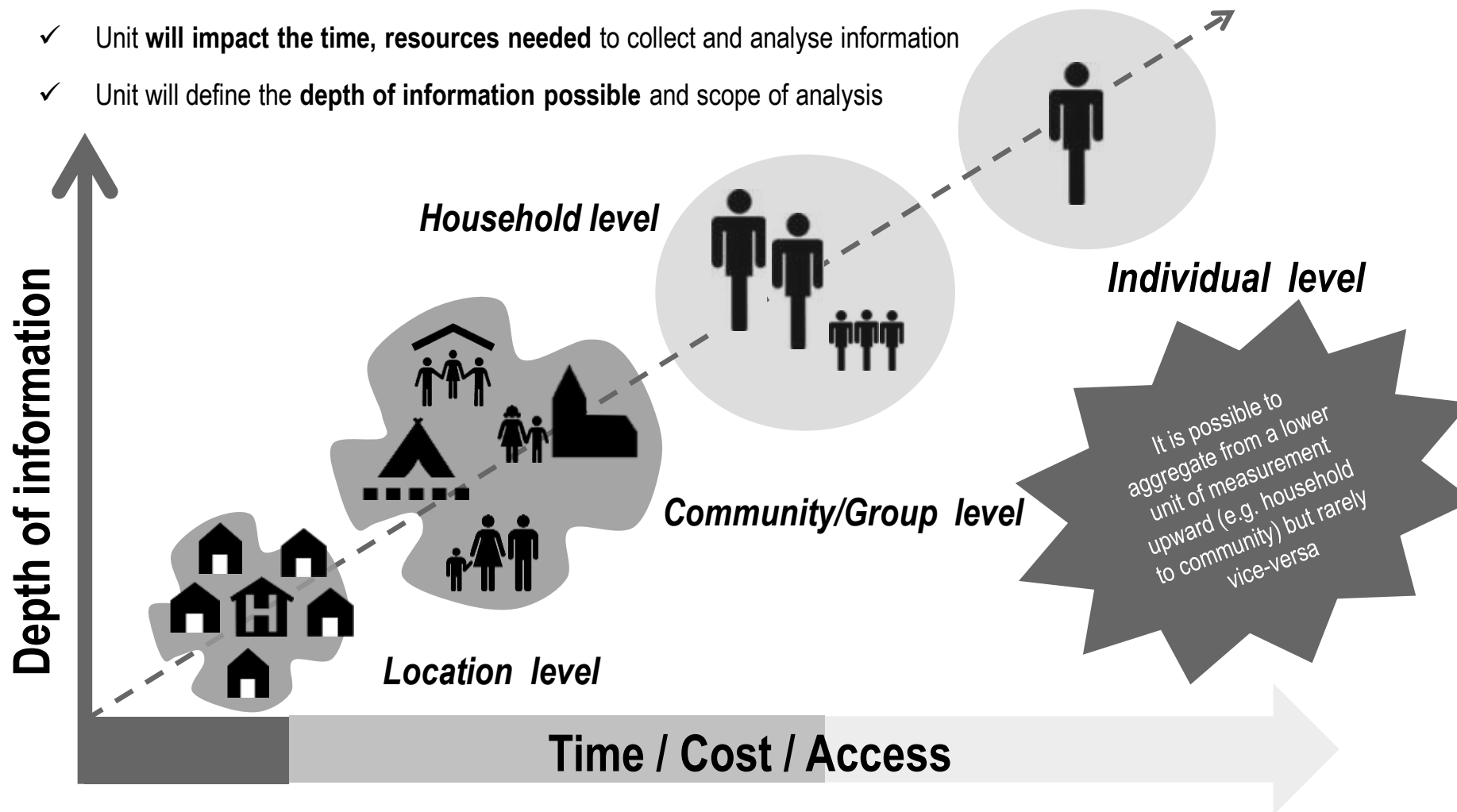
➤ **Examples?**
  ➤ Individual
  ➤ Family
  ➤ Household
  ➤ Community/ group
  ➤ Town/ village
  ➤ Facility
  ➤ Cow

Remember…

- ✓ Unit **will impact the time, resources needed** to collect and analyse information

- ✓ Unit will define the **depth of information possible** and scope of analysis

Depth of information

Household level

Individual level

Community/Group level

It is possible to aggregate from a lower unit of measurement upward (e.g. household to community) but rarely vice-versa

Location level

Time / Cost / Access

Quantitative method	Qualitative method
Survey	Experiment
	Focus group
	Deep interview
	Panel research
	Case study
	Brainstorming

Quantitative method

Survey

- Questionnaire survey

- Telephone survey

- Mail surveys

- Fax surveys

- Online surveys and other Internet-based methods—
  allow researchers to speed the survey process,
  increase sample sizes, ignore geographic boundaries,
  and dramatically reduce costs.

Qualitative method

Interview

In-depth interviews offer the opportunity to capture rich, descriptive data about how people think and behave. In depth interviews are normally carried out face to face.

The interview is conducted using a discussion guide which facilitates the flushing out of the respondent's views through open ended questioning.

Qualitative method

Focus group

- Simultaneous personal interview of a small group of individuals, which relies on group discussion about a certain topic.

*Notes:

- Moderator;

- 6-12 person;

- 1-3 hours

Qualitative method

Experiment

Marketing experimentation is a research method which can be defined as "the act of conducting such an investigation or test, least used method.

Qualitative method

Case Study

- Examines a phenomenon by looking how the phenomenon has manifested in different "cases".

- A case can be a group of people, a historical event, policy, programs, communities, individuals.

- Usually mixed methods, including multiple different sources of data.

Brainstorming

Brainstorming is a group creativity technique by which efforts are made to find a conclusion for a specific problem by gathering a list of ideas spontaneously contributed by its members.

To brainstorm is to think about and try to come up with ideas or solutions to a problem, either on your own or in a group.