Research methods I
Master thesis seminar
21.11.2023

Content

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2. **Critically reviewing the literature**

3. **Data – information - knowledge**

4. **Using secondary data**

5. **Collecting primary data**

1

Research principles

Research

- Research is about **systematically obtaining** and **analysing data** to **increase a knowledge** about a topic in which we are interested. In undertaking research, we are trying to **answer a question** or **address a problem**, this often being referred to as 'meeting the research aim' or 'addressing the research objectives'.

Rojon a Saunders, 2012

Data = evidence

No fortune telling

No philosophical views

You cannot solve a problem where there is not one!

Well defined problem is half solved!

Research question

- It is a central theme of any research.
- Every aspect of research must aim to answer it.
- It determines the research strategy not the other way around!
- It goes beyond the horizon of identifying the subject and object of research.

Research question examples

- **What?**
  - What make our employees leave for our competition?
- **When?**
  - When do our customers repeat their purchase?
- **Where?**
  - Where exactly should we build our new store?

Research question examples

- **Who?**
  - Who spreads negative sentiment about government online?
- **How?**
  - How railway services rebranding influenced attitudes of general public?
- **Why?**
  - Why do companies outsource marketing research?

If you have a question, you can start searching for answers. First step in master thesis is to look into literature.

2

Critically reviewing the literature

References, references, references…

Literature review purpose

- To discover explicit recommendations for further research. These can provide you with a superb justification for your own research question(s) and objectives;

- to help you to avoid simply repeating work that has been done already;

- to discover and provide an insight into research approaches, strategies and techniques that may be appropriate to your own research question(s) and objectives.

Saunders et al., 2009. Research methods for business students

What is to be critical

- To criticize normally means something negative:
  - The flood situation is critical
  - Critically endangered antelope species
  - The patient's condition is critical
  - Diplomats criticize Obama's actions
- All science is built on the ability of people (peer reviewers) to critically evaluate other people's work.

What is to be critical

- Ability to assess the validity and strength of arguments
- Ability not to take information as automatically true and valid
- Ability to see the wider context
- Ability to critique using counter-arguments and provide effective feedback
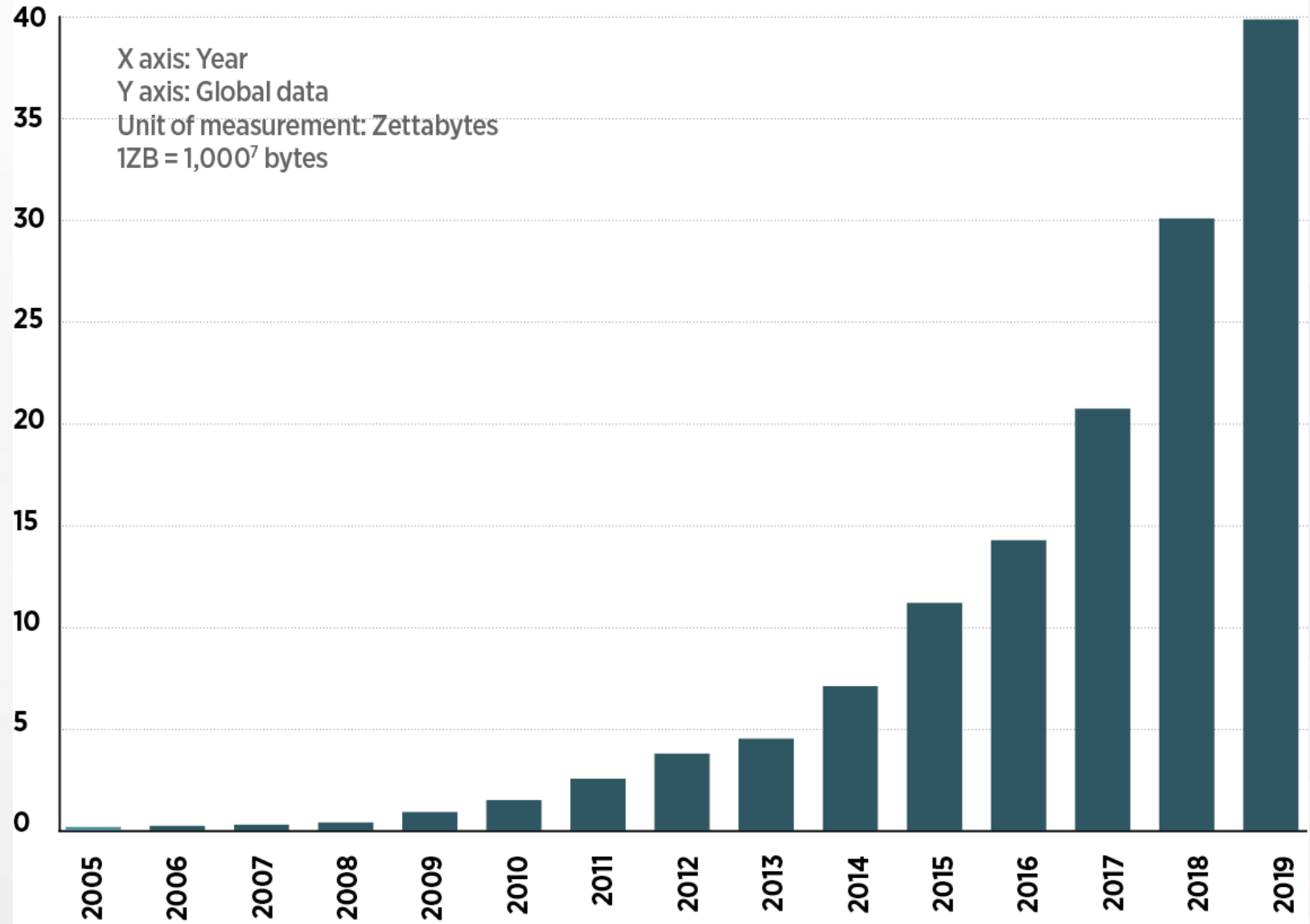- Ability to critically evaluate one's own work
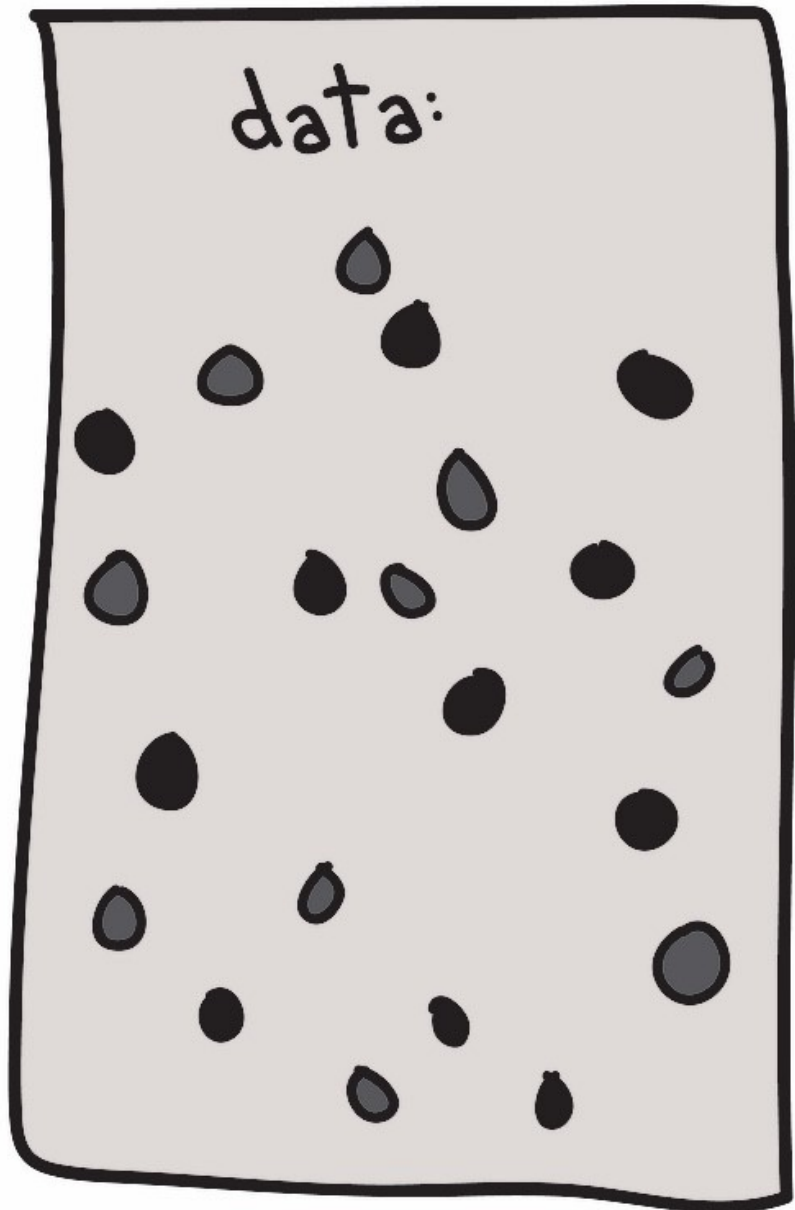
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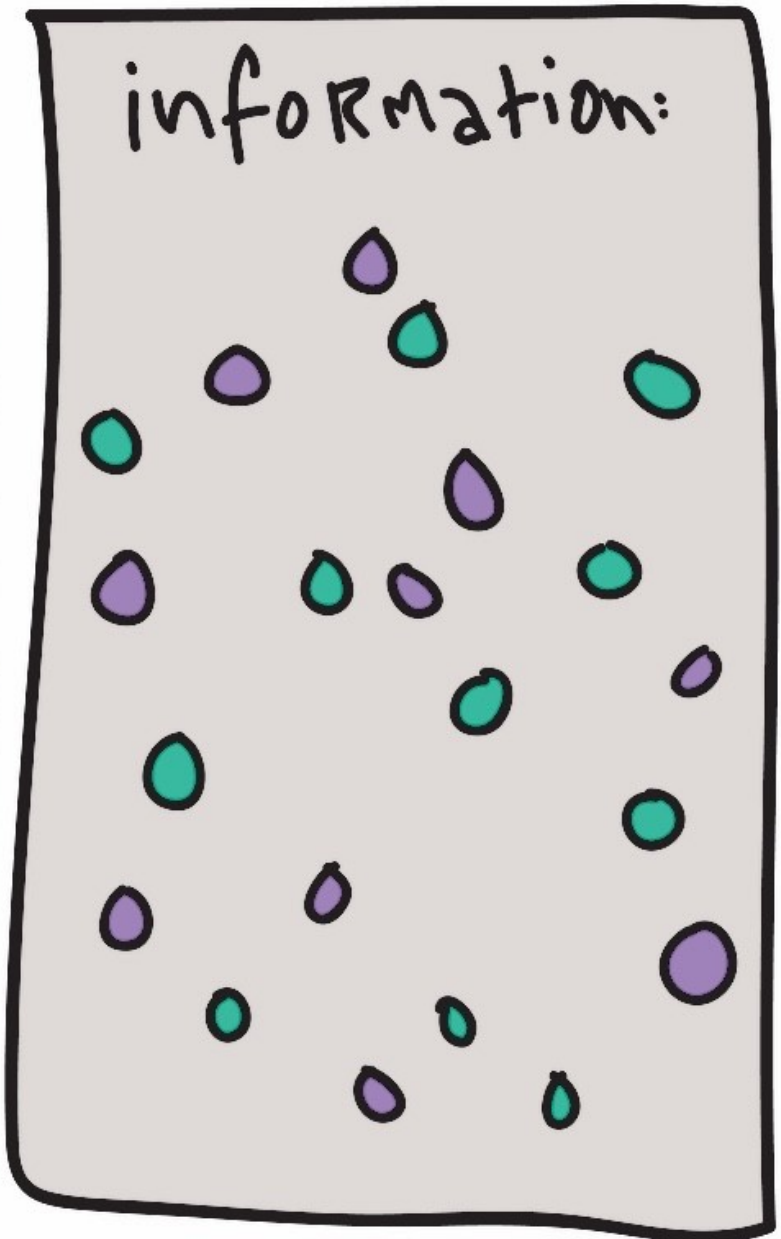# Data – information - knowledge

Data, information, knowledge

DATA GROWTH

X axis: Year
Y axis: Global data
Unit of measurement: Zettabytes
$1ZB = 1,000^7$ bytes

Note: Post-2013 figures are predicted. Source: UNECE
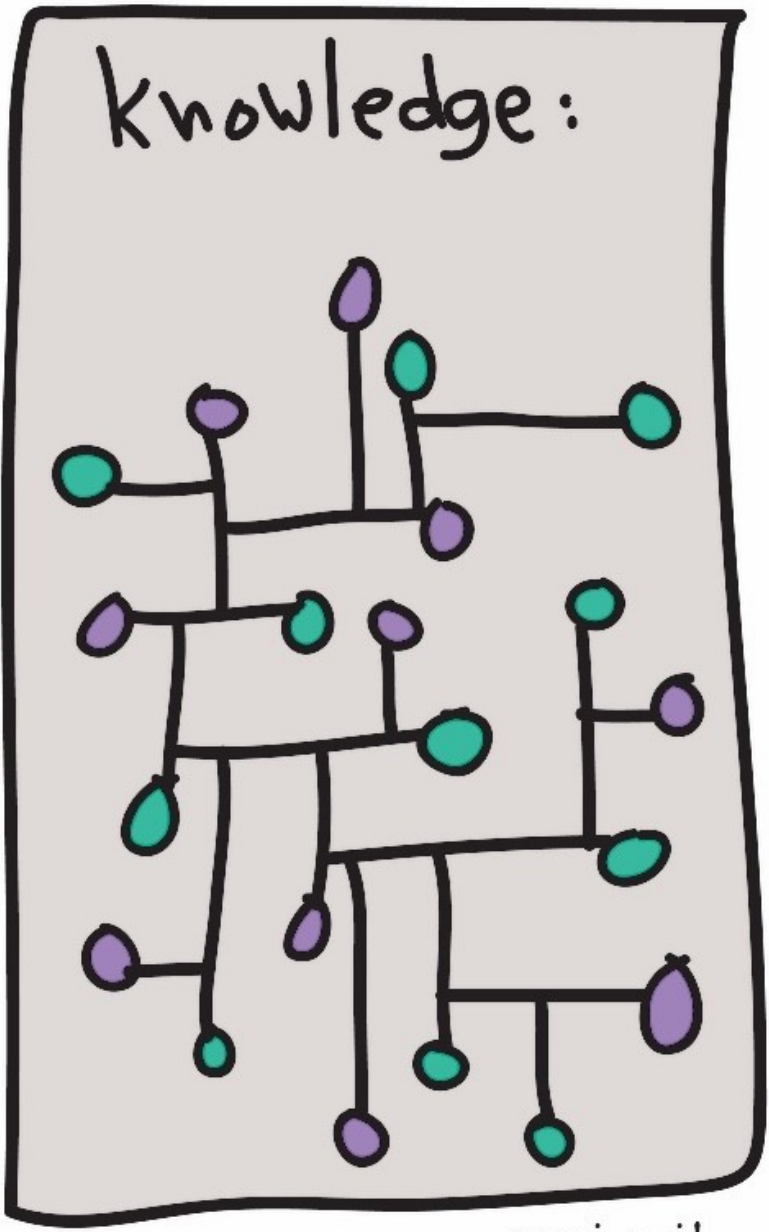
Data and information differences

- **Data** is the most basic form of knowledge, e.g. the brand of butter sold to a particular customer in a certain town. This statistic is of little worth in itself but may become meaningful when combined with other data.

- **Information** is a combination of data that provide decision-relevant knowledge, e.g. the brand preferences of customers in a certain age category in a particular geographic region.

	2017			2018			2019	
	A	B	C	D	E	F	G	H	I
	Age	Gender	Cash spend	Age	Gender	Cash spend	Age	Gender	Cash spend
4	26	Man	125,00 €	56	Man	22,00 €	25	Women	125,00 €
5	28	Women	25,00 €	55	Women	13,00 €	55	Women	25,00 €
6	59	Women	122,00 €	19	Man	85,00 €	18	Women	122,00 €
7	64	Women	12,00 €	44	Women	12,00 €	45	Women	12,00 €
8	22	Man	54,00 €	25	Man	54,00 €	22	Man	54,00 €
9	56	Man	35,00 €	36	Man	22,00 €	35	Man	35,00 €
10	55	Women	12,00 €	35	Women	56,00 €	48	Women	12,00 €
11	18	Man	25,00 €	35	Man	55,00 €	71	Man	25,00 €
12	45	Women	15,00 €	37	Women	18,00 €	45	Man	15,00 €
13	25	Man	10,00 €	48	Man	25,00 €	25	Women	10,00 €
14	36	Women	25,00 €	27	Women	25,00 €	36	Man	25,00 €
15	38	Man	38,00 €	55	Man	38,00 €	41	Man	38,00 €
16	34	Man	12,00 €	68	Man	35,00 €	34	Man	12,00 €
20	19	Women	28,00 €	48	Man	25,00 €	33	Women	28,00 €

Can we make decision based on these customer data?

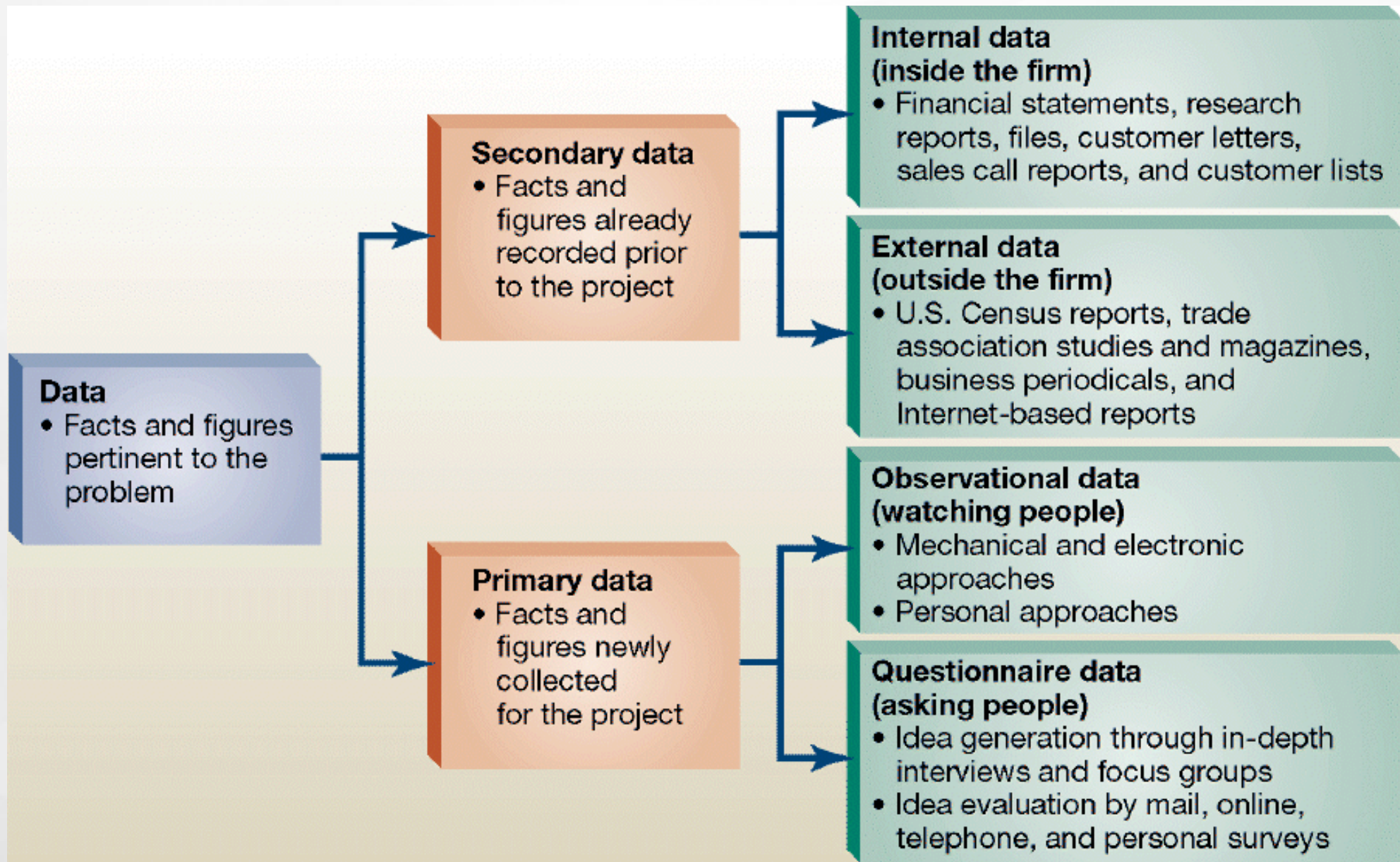| Age	2017	2018	2019
18-29	15%	10%	6%
30-39	18%	13%	13%
40-49	26%	22%	15%
50-59	18%	24%	21%
60-69	15%	18%	25%
70+	8%	13%	20%

Age distribution
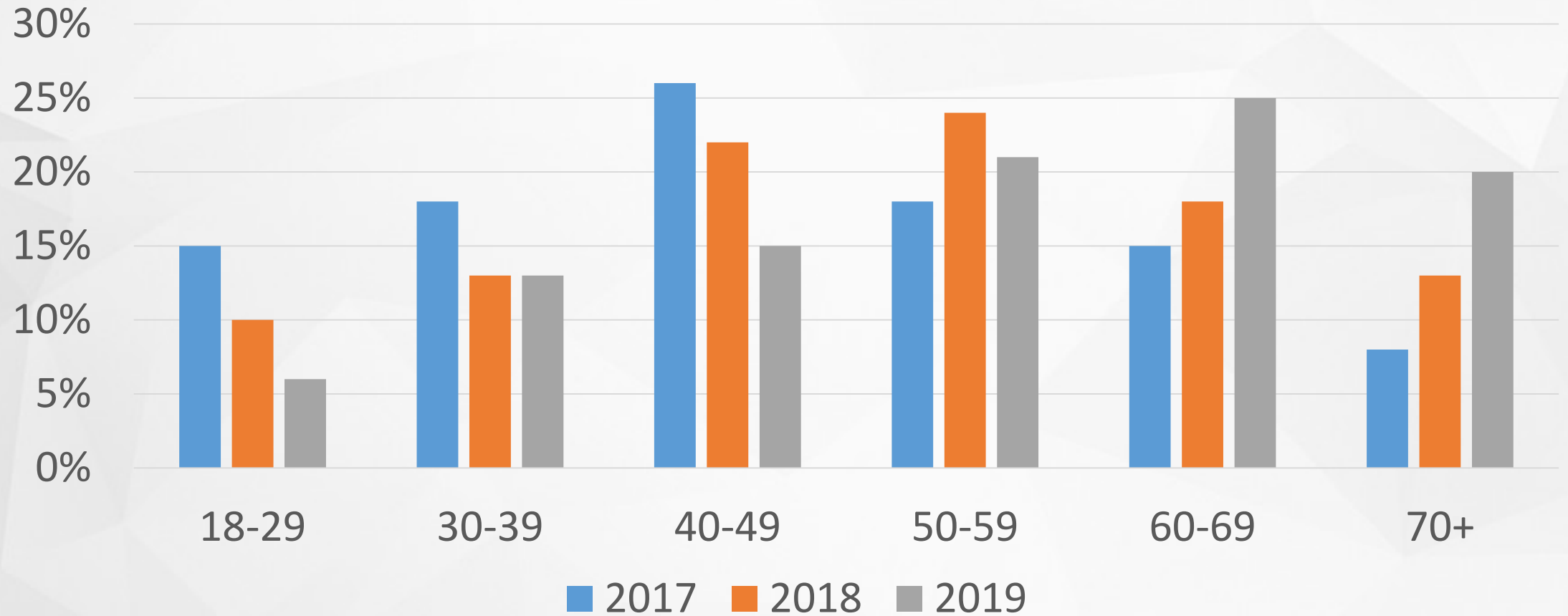
Age distribution
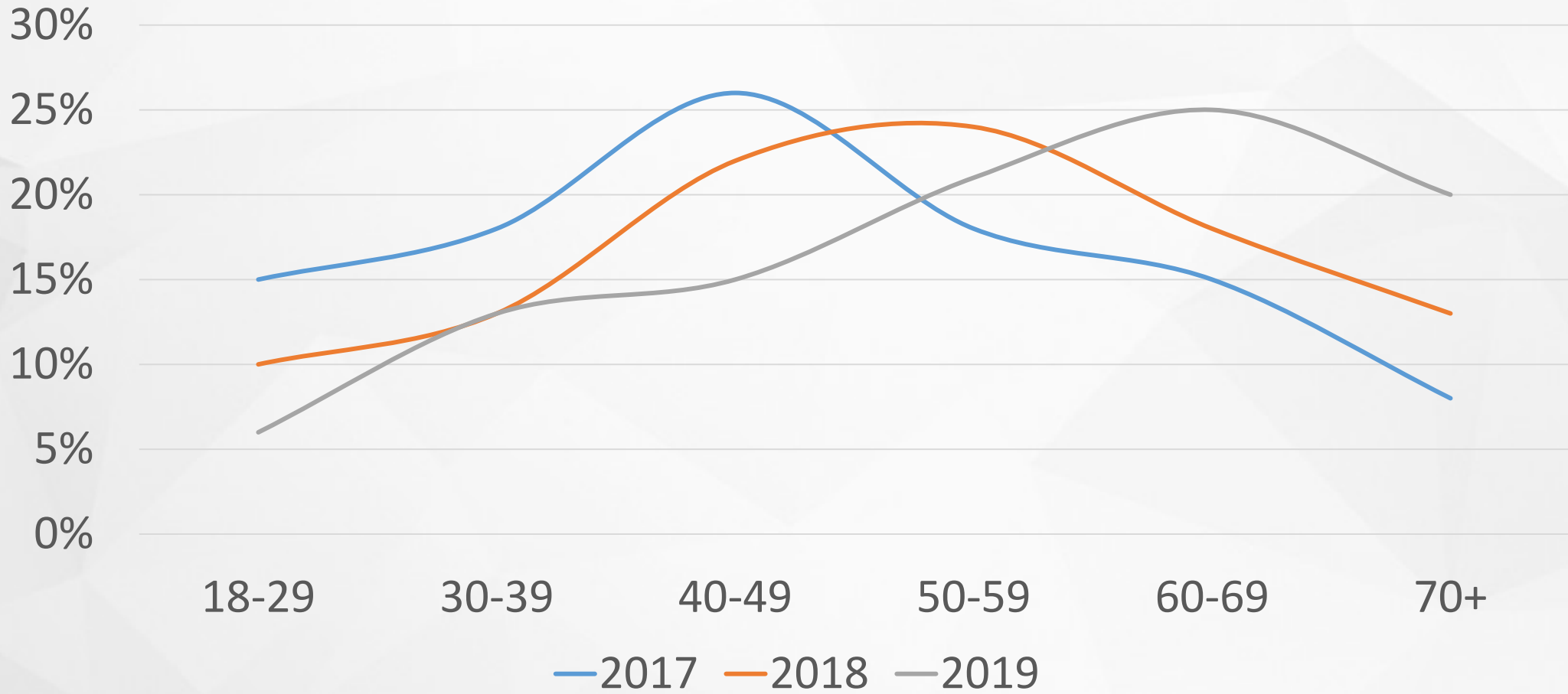
Research data types

- Primary data
  - Do not exist at the beginning of the research project
  - Data collected throughout the project

- Secondary data
  - Data already existing
  - Reports, statistical data, business data, reused data, analytical data.

WHAT'S THE DIFFERENCE BETWEEN QUANTITATIVE AND QUALITATIVE DATA?

Quantitative Data

- Countable or measurable, relating to numbers.

- Tells us how many, how much, or how often.

- Fixed and universal, "factual."

- Gathered by measuring and counting things.

- Analyzed using statistical analysis.

Qualitative Data

- Descriptive, relating to words and language.

- Describes certain attributes, and helps us to understand the "why" or "how" behind certain behaviors.

- Dynamic and subjective, open to interpretation.

- Gathered through observations and interviews.

- Analyzed by grouping the data into meaningful themes or categories.

4

Using secondary data

# https://www.kantarworldpanel.com/
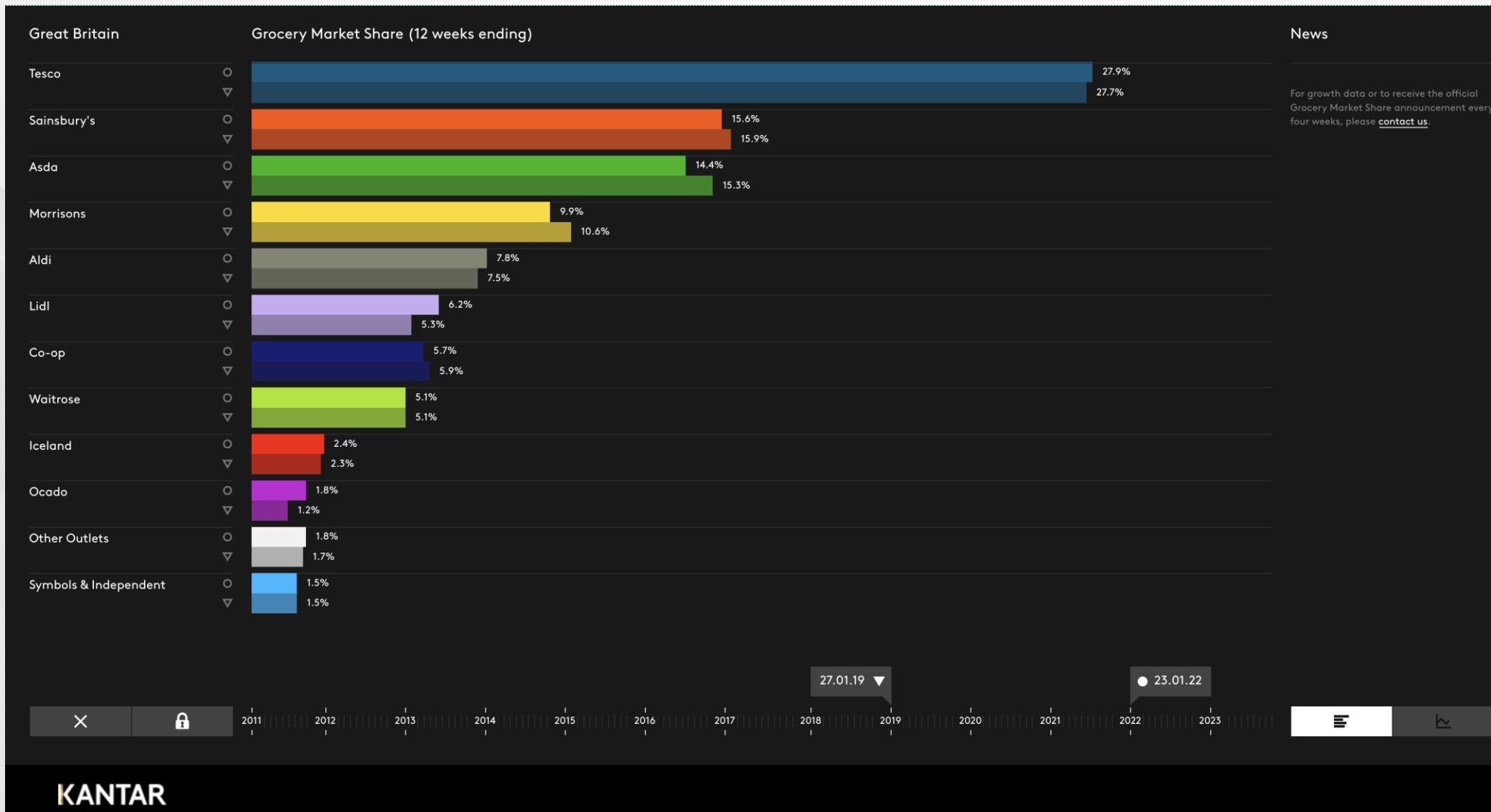
4 . Distribution of pay

Figure 2: Hourly earnings in 2022 are returning to their pre-coronavirus distribution profile, but the proportion of people at or below the minimum wage has decreased since 2021

Distribution of hourly earnings (excluding overtime) for all employees, from 2018 to 2022, UK (proportion of jobs within plus or minus 20 pence of shown pay rate)

Figure 2: Hourly earnings in 2022 are returning to their pre-coronavirus distribution profile, but the proportion of people at or below the minimum wage has decreased since 2021

Distribution of hourly earnings (excluding overtime) for all employees, from 2018 to 2022, UK (proportion of jobs within plus or minus 20 pence of shown pay rate)
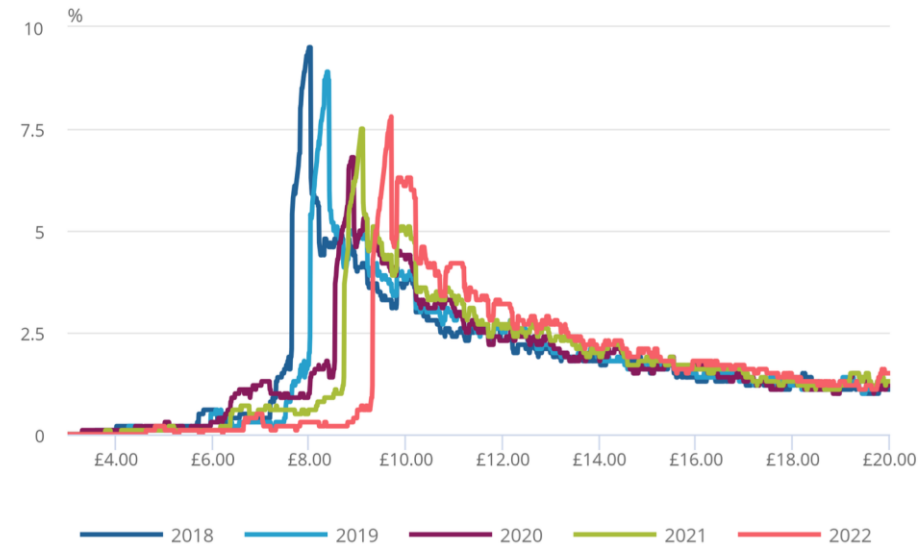
Source: Office for National Statistics – Annual Survey of Hours and Earnings (ASHE)
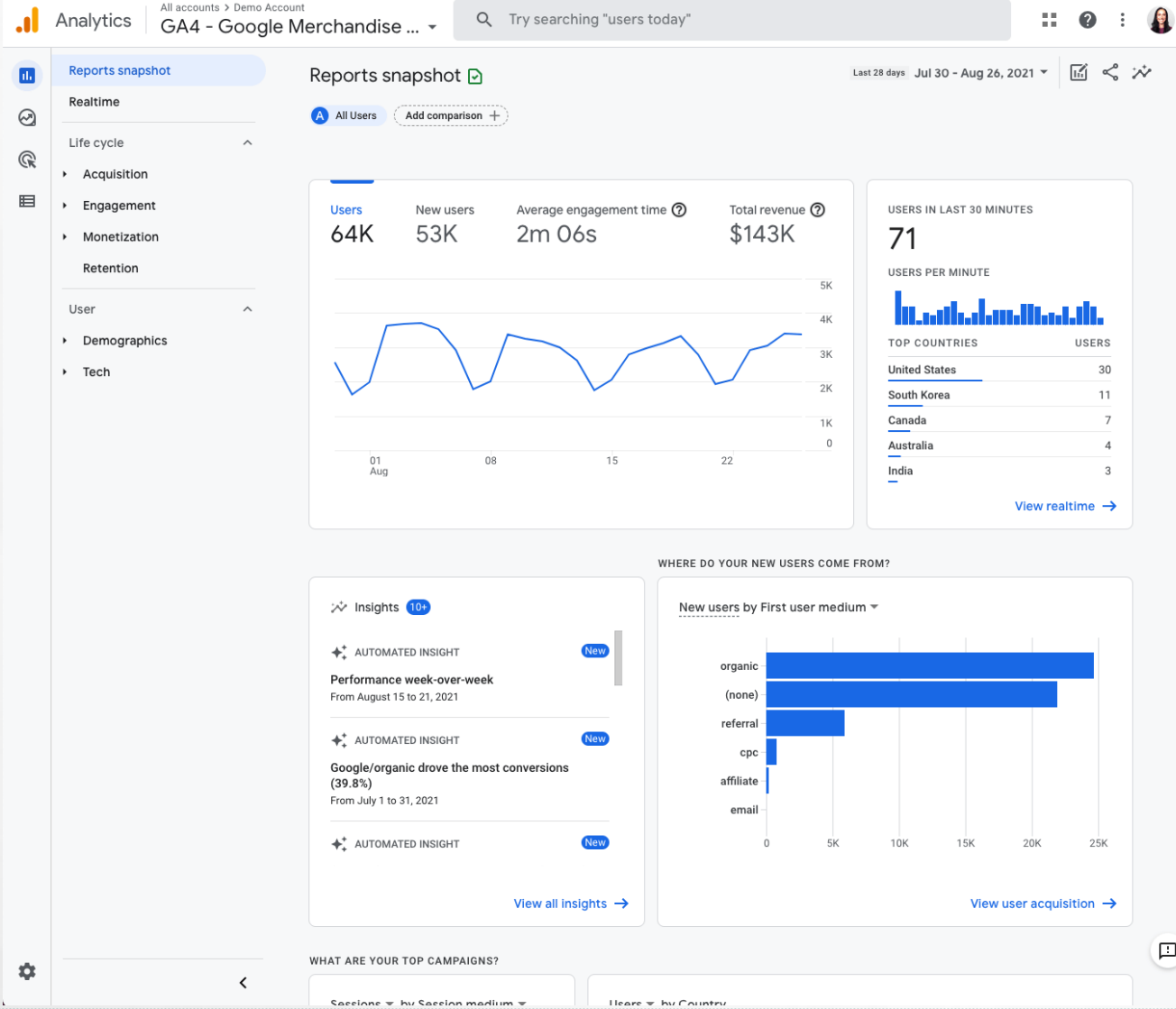
starbucks ✓ 4w

Message received. ✨ Caramel Ribbon Crunch Frappuccino® Drink.

carl33nn 3w

best drink ,my to-go😊

1 like   Reply

starbucks ✓ 3w

Thanks for sipping with us!

1 like   Reply

chiaraparadis_ 4w

Always love those caramel ribbons!! A shot of goodness...

1 like   Reply

starbucks ✓ 4w

@chiaraparadis_ Cheers to sticky-sweet goodness in every cup!

2 likes   Reply

SLEZSKÁ UNIVERZITA
OBCHODNĚ PODNIKATELSKÁ
FAKULTA V KARVINÉ

Advantages of secondary data

- **Cost and Time Efficiency:**

- Secondary data is typically less costly and quicker to obtain than primary data. Since it's already collected and often readily accessible, researchers can save significant resources in terms of both time and money.

Advantages of secondary data

- **Broad Scope and Variety:**

- Secondary data can provide a broad perspective that primary data might not be able to offer. It often includes a wide range of information collected for various purposes that can be useful for comprehensive research.

Advantages of secondary data

- **Longitudinal Analysis:**
- It enables researchers to conduct longitudinal studies, examining trends and developments over time, which would be resource-intensive or impossible to do using primary data.

Advantages of secondary data

- **Comparative Studies and Benchmarking:**

- Secondary data allows for comparisons across different studies, sectors, or countries. It can be used for benchmarking against industry standards or competitors.

Advantages of secondary data

- **Feasibility and Preliminary Insights:** It helps in assessing the feasibility of research projects. Researchers can use secondary data to gain preliminary insights into a topic, which can guide the design and approach of primary research.

- **Supporting Primary Data:** Secondary data can complement and reinforce findings from primary research, adding depth and context to the analysis.

Disadvantages of secondary data

- **Relevance Issues:** The data may not be entirely relevant to the current research objectives or questions, as it was collected for a different purpose.

- **Quality and Accuracy Concerns:** The accuracy and reliability of secondary data can be questionable, especially if the sources are not credible or the data collection methods were flawed.

- **Outdated Information:** Secondary data might be outdated, making it less useful for current studies, particularly in fast-changing fields.

"Data collection methods were flawed…"

- How do you know?
- How can you critically evaluate secondary data?

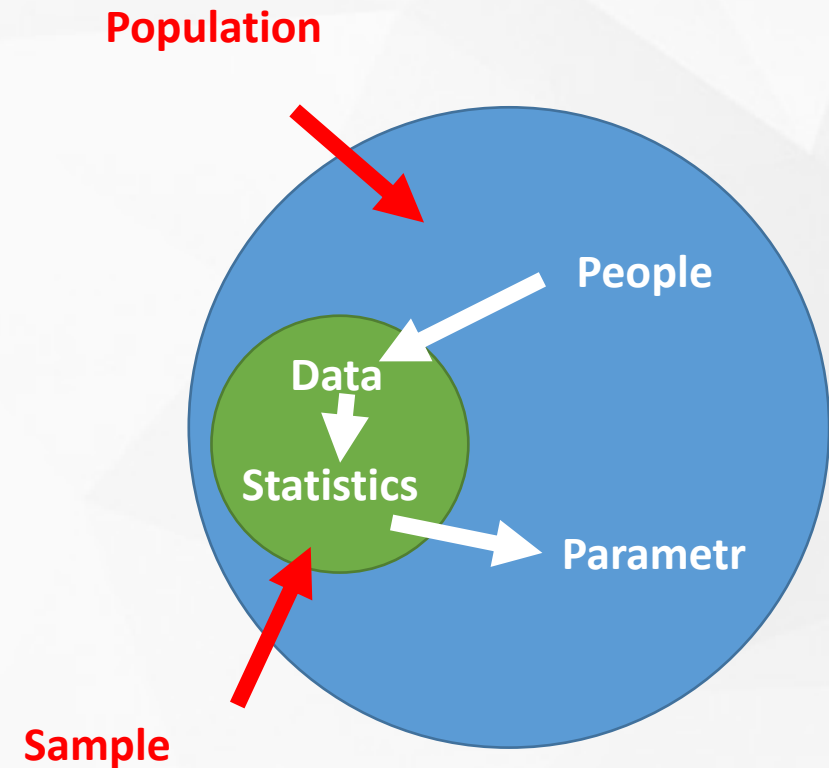- By understanding the methods of primary data collection.
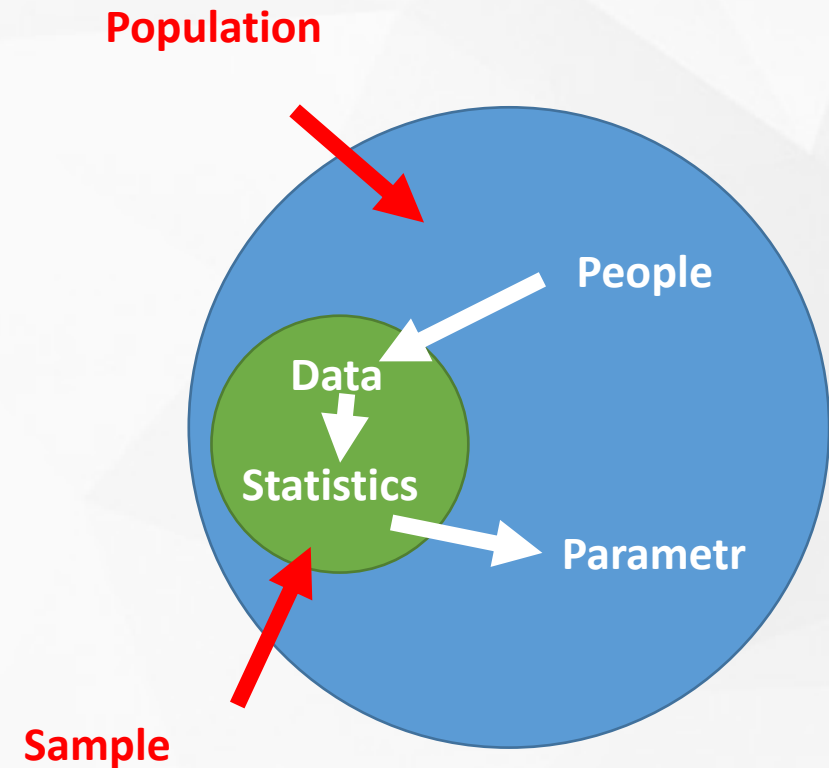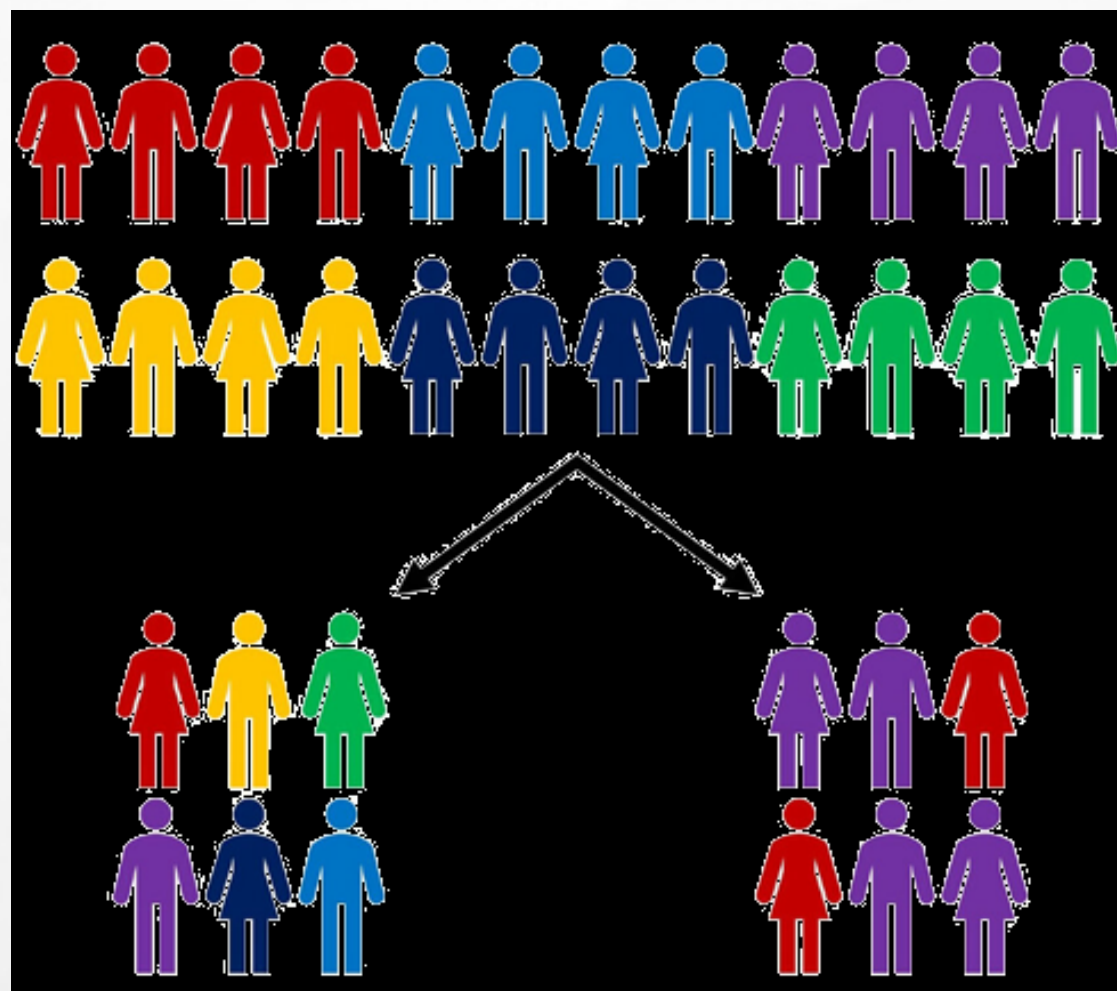
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Collecting primary data

Sample and sample size

- Sample is a part of population which, when collected properly, can produce results which are generalizable.

- Greater the sample size more reliable the results are.
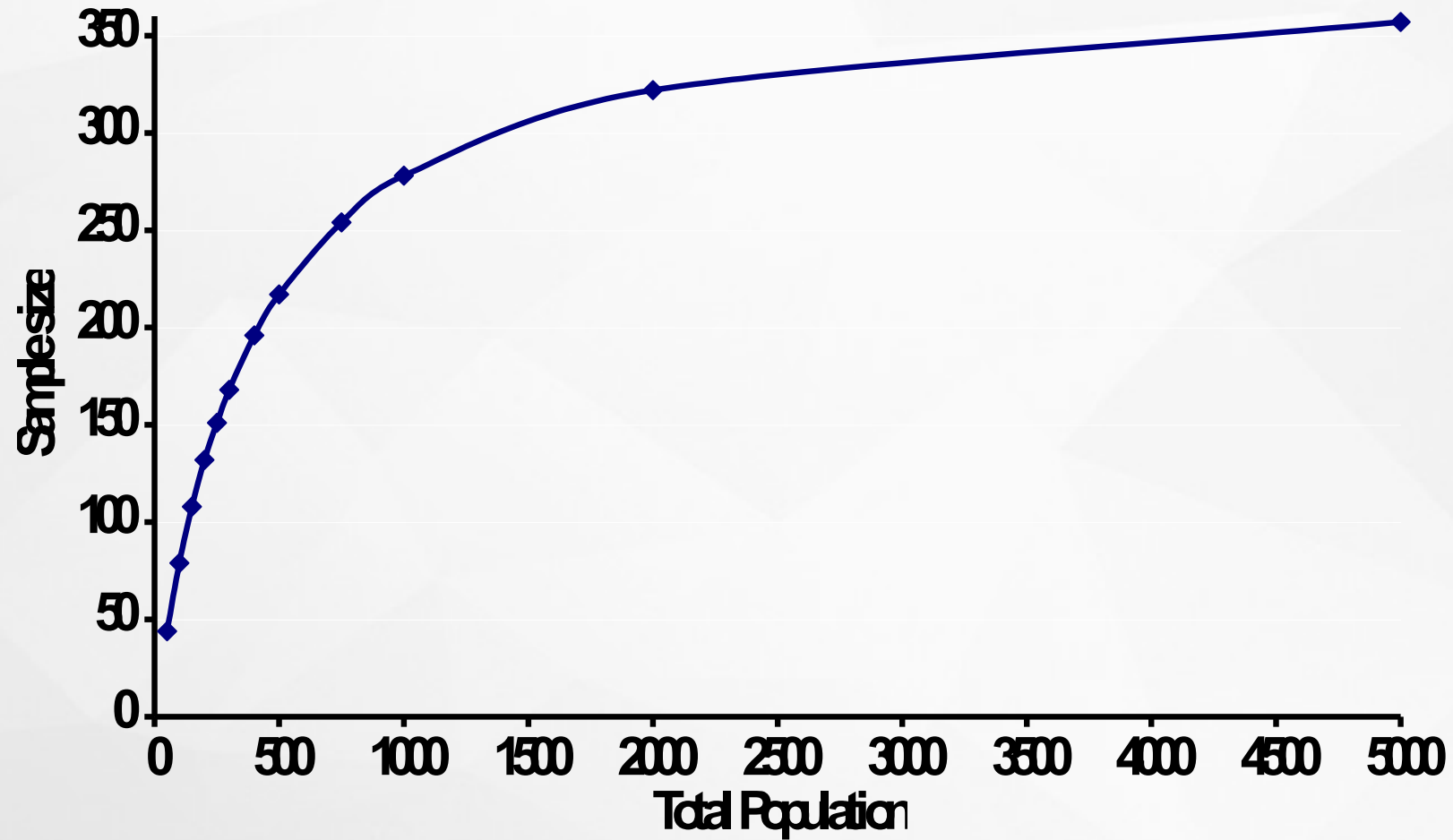
- Reality = Parametr + Error

Sample and sample size

- Two questions we need to adress:
  - Who?
  - How much?

Ideal sample size

Favourite colour example

- In a class, teacher ask students what is their favourite colour.
- The realtime results goes like this:

Respondent	Answer	Results PINK in %	Results GREEN in %	Change
1	Pink	100	0	No data
2	Green	50	50	50%
3	Green	33,5	66,5	16,5%
4	Pink	50	50	16,5%
5	Green	40	60	10%
6	Green	33,5	66,5	6,5%
7	Green	28	72	5,5%
8	Pink	37	63	9%
9	Pink	44	56	7%
10	Pink	50	50	6%

Sample size in qualitative studies

- The data collection takes place as long as there is no condition in which further examination of the selected sample does not bring new substantial information.

- **Theoretical saturation**

- The goal of qualitative research is not generalization, so it is not the aim of the results to relate to the whole population but to reveal the connections and causes of a certain behavior of customers.

Primary data collection methods

- Survey
  - Interview
  - Questionnaire
- Observation
- Experiment

Data collection techniques - qualitative

- Deep interviews

- Focus group discussions

- Expert consultations

- Observation

Data collection techniques - quantitative

- Face to face interviews
- Telephone interviews
- Postal survey
- Electronic survey
- Observation
- Experiment

Validity

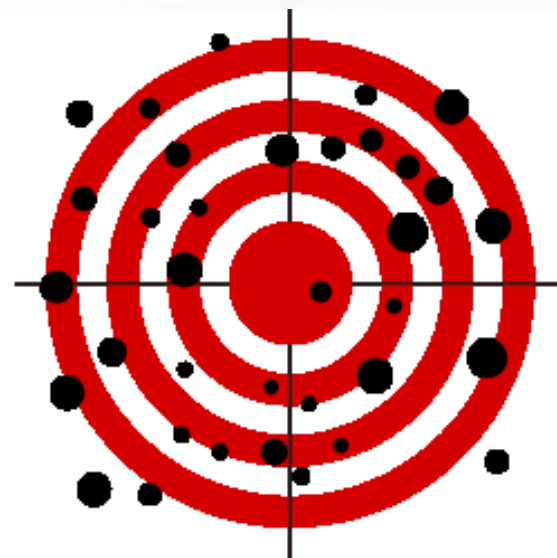- Valid questions are those that give us answers exactly what we ask - what is the main goal of research.

Reliability

- It expresses the degree of sustainability of research tools.

- To what extent the question remains reliable and still valid in further iterations - for example, in other time, social and cultural conditions.
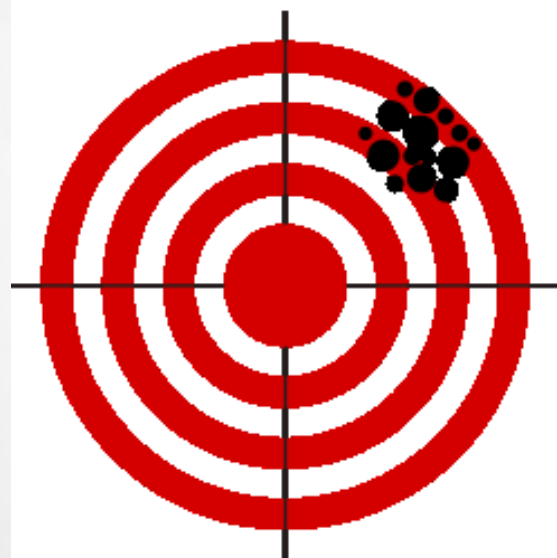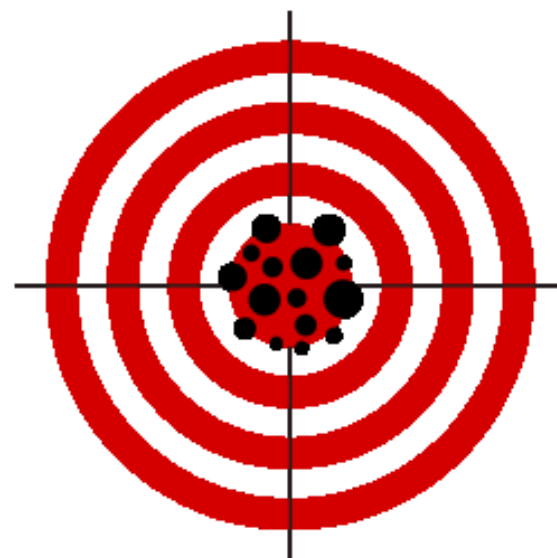
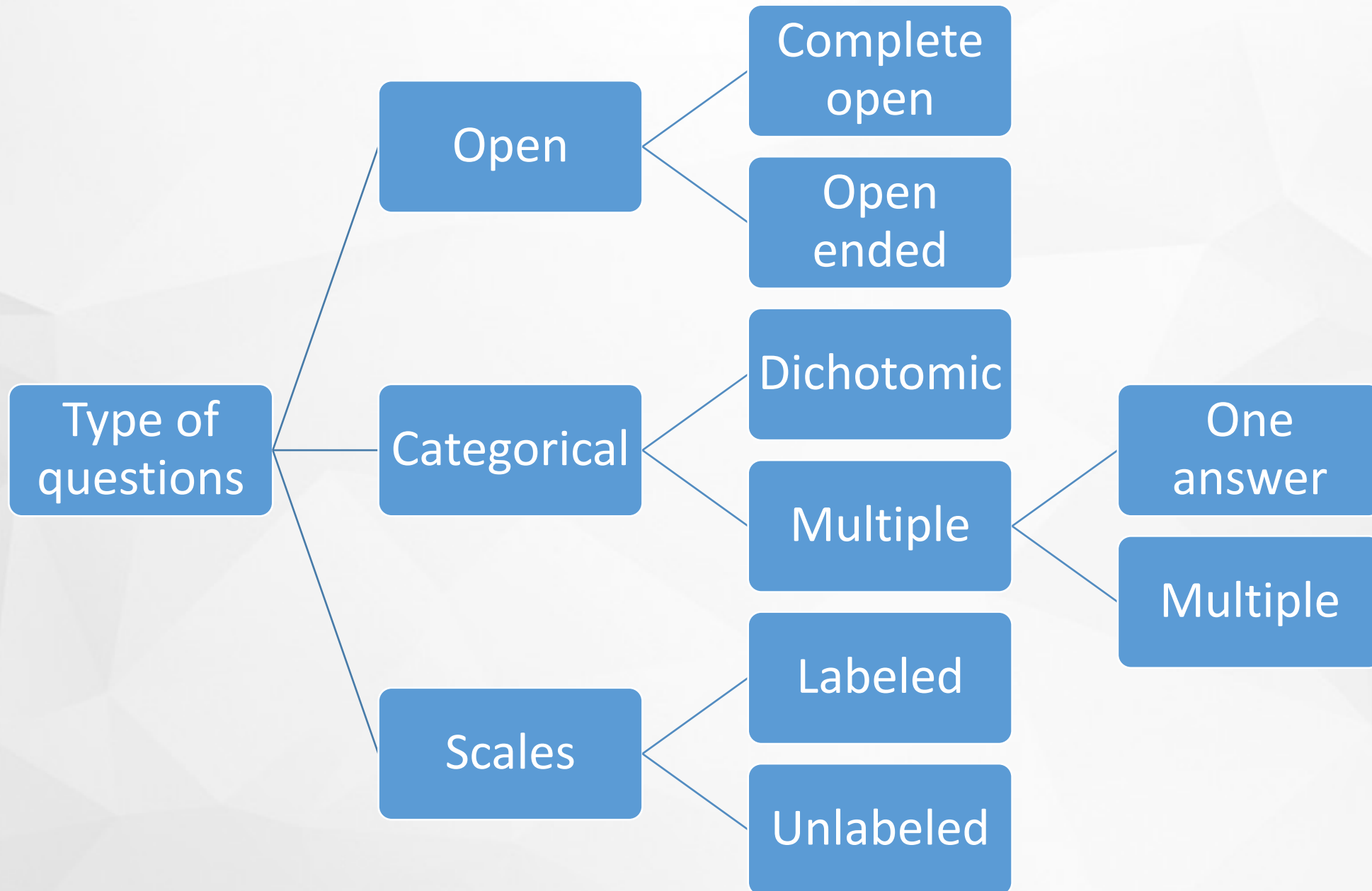Unreliable & Unvalid

Unreliable, But Valid

Reliable, Not Valid

Both Reliable & Valid

Case Example

1. **Defining the Research Question**: You start by clearly defining your research question: "Do students who study a little every day score higher on tests compared to those who cram the night before?"

2. **Literature Review**: You do some background research by looking up existing studies or articles about study habits and academic performance. This helps you understand what's already known and how your research could add to it.

3. **Hypothesis Formation**: Based on your background research, you form a hypothesis, like "Students who study regularly will have higher test scores than those who cram."

4. **Designing the Methodology**: You decide how you will conduct your research. You choose to survey your classmates, asking about their study habits and recent test scores.

5. **Data Collection**: You systematically collect data by distributing your survey to a representative sample of students in your school.

6. **Data Analysis**: Once the surveys are returned, you analyze the data, looking for patterns and correlations between study habits and test scores.

7. **Interpreting Results**: Based on your analysis, you draw conclusions. For example, you might find that regular study leads to better scores, supporting your hypothesis.

8. **Reporting**: You prepare a report or presentation summarizing your research process, findings, and conclusions.

9. **Reflecting on Limitations**: You also consider any limitations of your study (like sample size or self-reported data) and suggest areas for further research.

Thank you