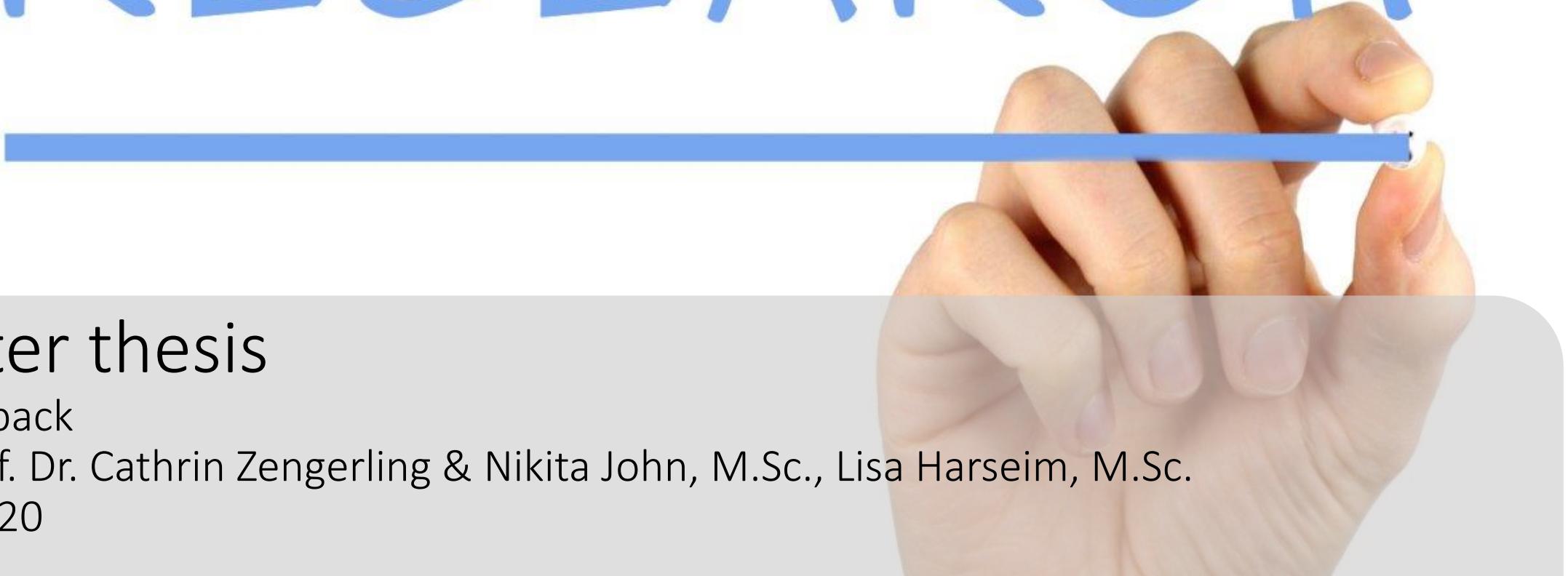


RESEARCH

A photograph of a person's hand holding a blue marker, writing the word "RESEARCH" in large, bold, blue capital letters on a white surface. A horizontal blue line is drawn below the word.

Master thesis

Starter pack

Ass. Prof. Dr. Cathrin Zengerling & Nikita John, M.Sc., Lisa Harseim, M.Sc.
SuSe 2020

Agenda

Research proposal – step by step

Research onion – from philosophy to research design

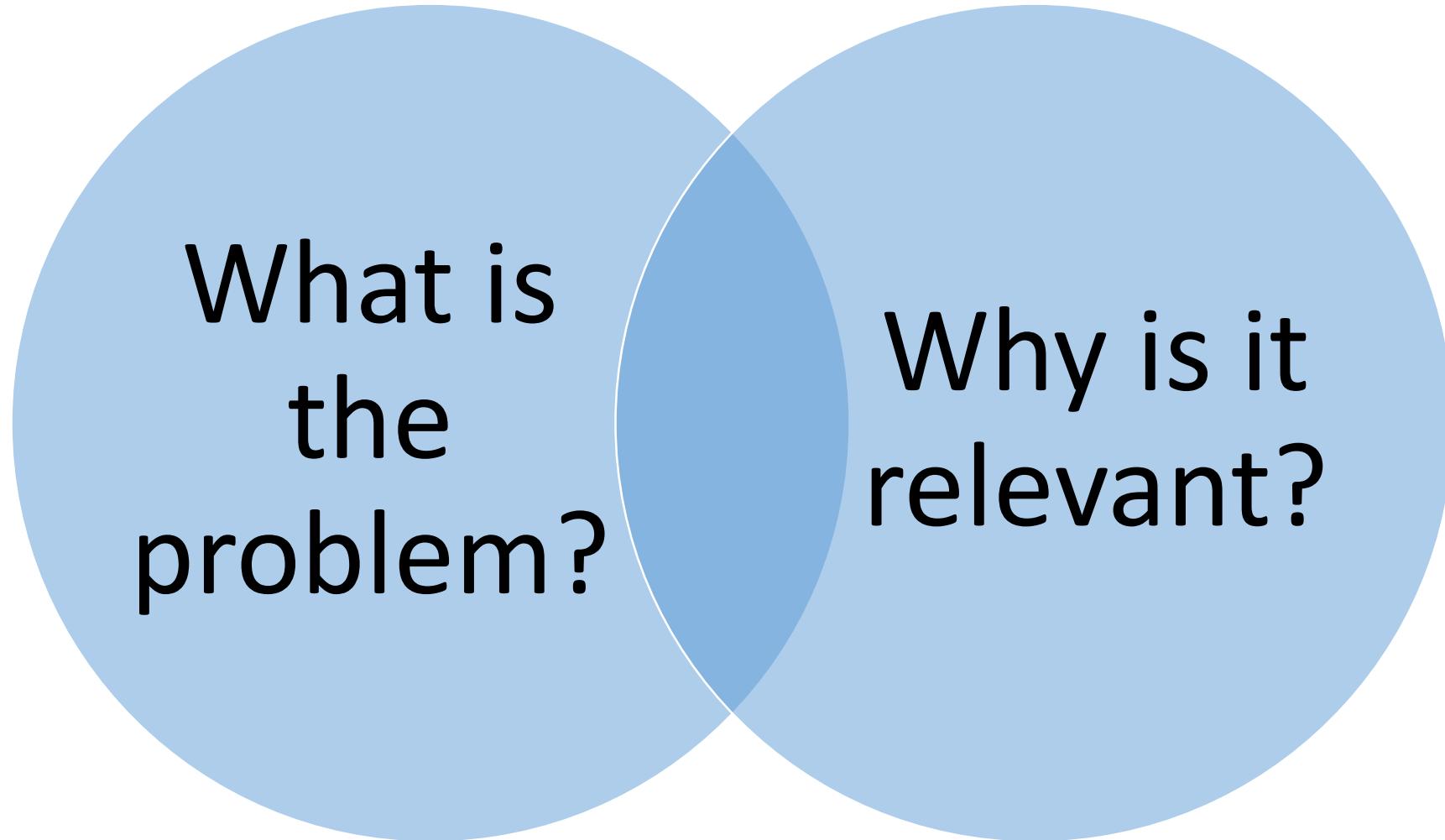
Research proposal

Step by step

Components of a research proposal

1. Introduction
2. Literature review and research gap
3. Goal, scope and research question(s)
4. Method(s)
5. Expected findings
6. Timeline and work packages
7. First tentative table of content
8. References

Introduction



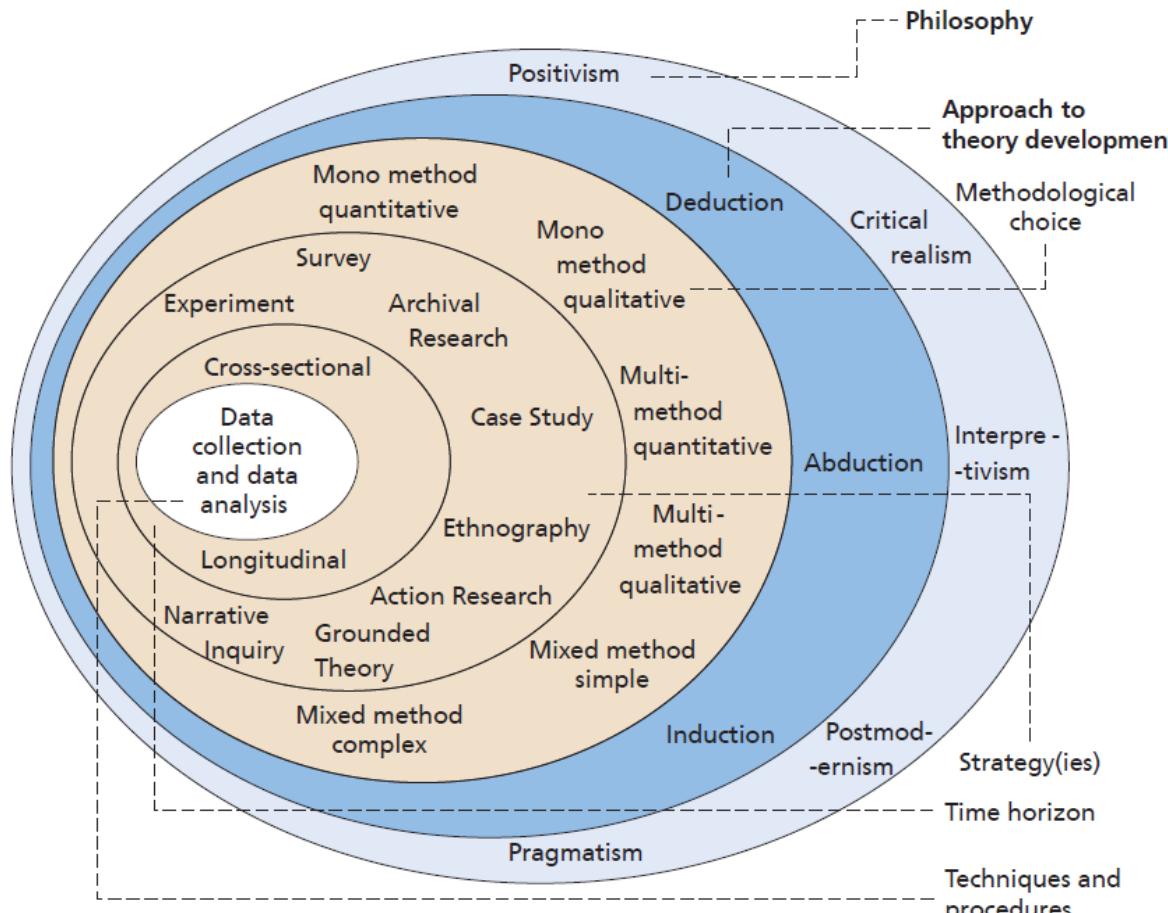
Literature review and research gap

- What has been done in the closer context of your research before?
- Consider work in different disciplines
- Is previous work inadequate?
- What is the research gap?

Goal, scope and research questions

Goal	Scope	Research question
<ul style="list-style-type: none">• What is the overall goal / aim of your research?	<ul style="list-style-type: none">• What is the specific focus of your work? (and what not)• This may include e.g. focus in time, scale, location etc.	<ul style="list-style-type: none">• Clear, specific, focused, complex

Method(s)



- Unfolds from research question(s)
- Quantitative / qualitative
- Mono or mixed method(s)
- Specific method also subject / discipline specific
- E.g. MFA, SFA, LCA in industrial ecology research
- E.g. analysis of legal framework, policy analysis, combined with empirical findings in law and policy research

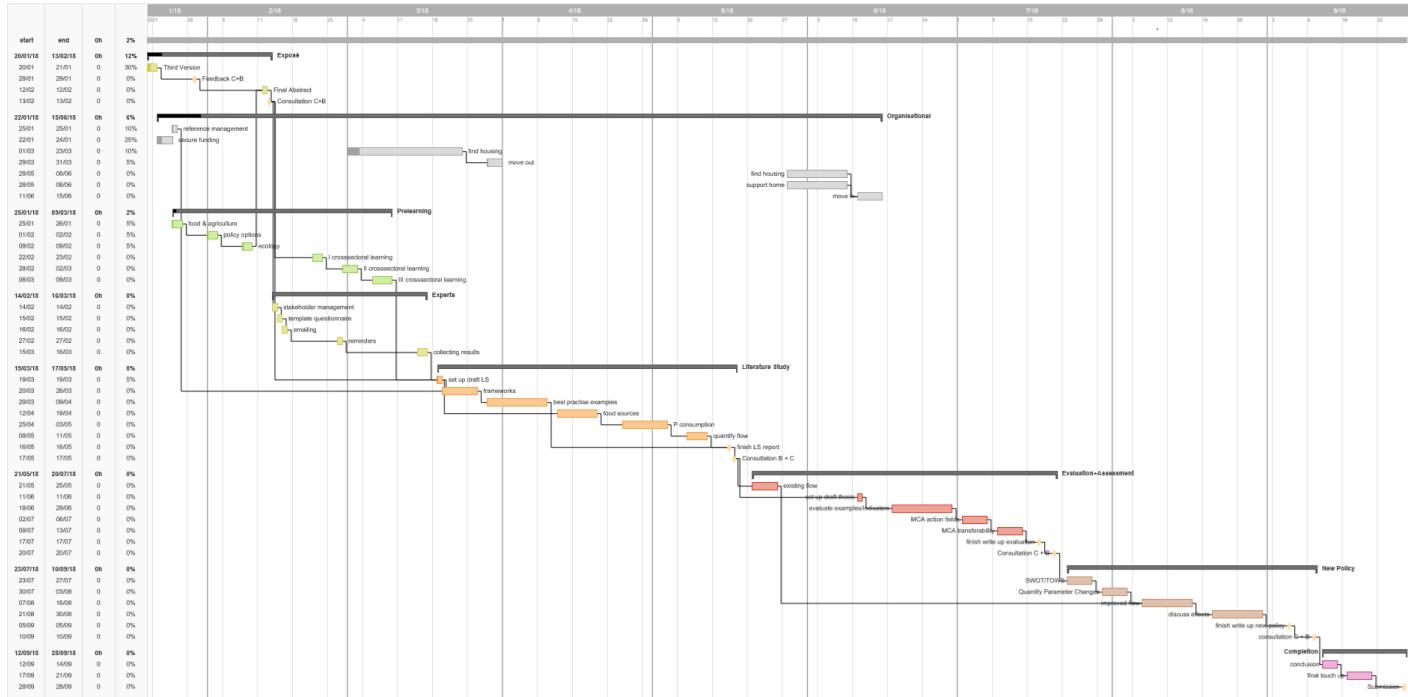
Figure 4.1 The 'research onion'

Source: ©2018 Mark Saunders, Philip Lewis and Adrian Thornhill

Expected findings

- This helps you to “think ahead”...
- Collect potential answer(s) to your research question(s)
- Would they match your overall research goal?
- Check consistency of your research

Timeline and work packages



- Be / become aware of the different steps of your research
 - E.g. literature research, data collection, interviews
- Define milestones
- Plan for buffers
 - For example, you can use a gantt chart (<https://app.teamgantt.com/>)
 - But there is no predefined way

First tentative table of content

- This is one **optional way** to go
- Supervisors handle this very differently
- In my experience it helps students to get started
- Note: it is just tentative, it can (and should) change as you proceed in your research

Introduction	1
Au clair de la Lune	11
L'alphabet	15
Pirouette Cacahuète	19
Dansons la capucine	23
Il court, il court, le furet	29
Promenons-nous dans les bois	33
Le vent	39
	43

Structure of ToC differs b/w disciplines

Canonical report structure

1. Introduction
2. Methodology
3. Results
4. Discussion
5. Conclusions

Social science / humanities

1. Introduction
2. Methodology
3. Background
4. Policy instruments
5. Case study 1
6. Case study 2
7. Critical discussion
8. Conclusions

Use **content headlines**, NOT structural headlines

This is just an **EXAMPLE!**

References

- Ensure **proper quality of sources** (see input Lisa Harseim)
- **Citation styles:**
 - Be consistent!
 - Differs from discipline and journals
 - Your supervisor might have a certain practice here
 - Overview:
<https://guides.lib.uw.edu/research/citations/citationwhich>
- **We use APA style for the assignment of week 2!**



Research onion

From philosophy to research design

Research onion

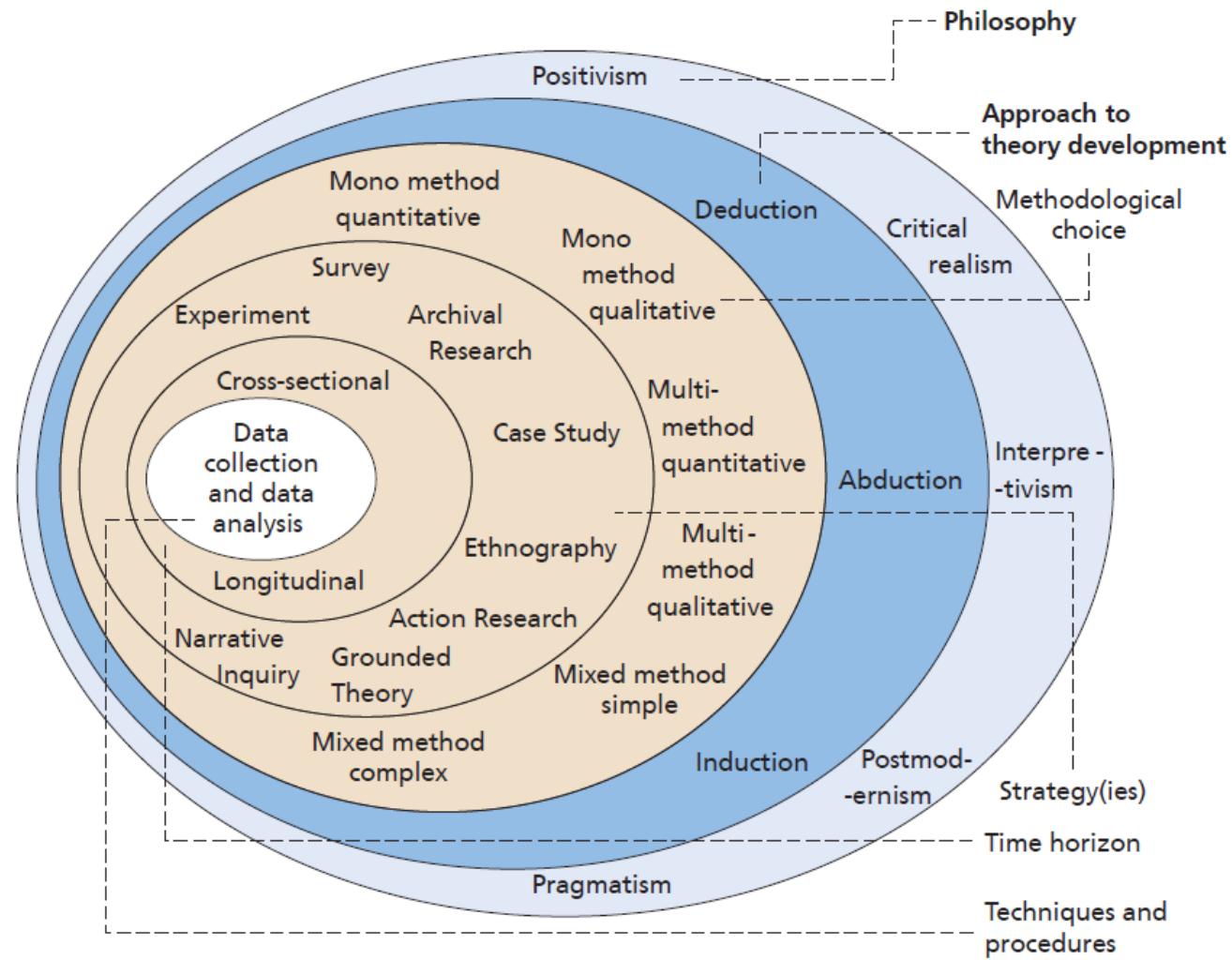


Figure 4.1 The 'research onion'

Source: ©2018 Mark Saunders, Philip Lewis and Adrian Thornhill

Philosophical assumptions I - ontology

Table 4.1 Philosophical assumptions as a multidimensional set of continua

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	↔	Subjectivism
Ontology	<ul style="list-style-type: none">• What is the nature of reality?• What is the world like?• For example:<ul style="list-style-type: none">– What are organisations like?– What is it like being in organisations?– What is it like being a manager or being managed?	Real External One true reality (universalism) Granular (things) Order	↔ ↔ ↔ ↔ ↔	Nominal/decided by convention Socially constructed Multiple realities (relativism) Flowing (processes) Chaos

Philosophical assumptions II - epistemology

Table 4.1 Philosophical assumptions as a multidimensional set of continua

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	↔	Subjectivism
Epistemology	• How can we know what we know?	Adopt assumptions of the natural scientist	↔	Adopt the assumptions of the arts and humanities
	• What is considered acceptable knowledge?	Facts	↔	Opinions
	• What constitutes good-quality data?	Numbers	↔	Written, spoken and visual accounts
	• What kinds of contribution to knowledge can be made?	Observable phenomena Law-like generalisations	↔ ↔	Attributed meanings Individuals and contexts, specifics

Philosophical assumptions III - axiology

Table 4.1 Philosophical assumptions as a multidimensional set of continua

Assumption type	Questions	Continua with two sets of extremes		
		Objectivism	↔	Subjectivism
Axiology	<ul style="list-style-type: none">• What is the role of values in research? Should we try to be morally-neutral when we do research, or should we let our values shape research?• How should we deal with the values of research participants?	Value-free	↔	Value-bound
		Detachment	↔	Integral and reflexive

Philosophies – positivism and critical realism

Table 4.3 Comparison of five research philosophical positions in business and management research

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
Positivism			
Real, external, independent One true reality (universalism) Granular (things) Ordered	Scientific method Observable and measur- able facts Law-like generalisations Numbers Causal explanation and prediction as contribution	Value-free research Researcher is detached, neutral and independ- ent of what is researched Researcher maintains objective stance	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis, but a range of data can be analysed
Critical realism			
Stratified/layered (the empirical, the actual and the real) External, independent Intransient Objective structures Causal mechanisms	Epistemological relativism Knowledge historically situated and transient Facts are social constructions Historical causal expla- nation as contribution	Value-laden research Researcher acknowl- edges bias by world views, cultural experi- ence and upbringing Researcher tries to mini- mise bias and errors Researcher is as objec- tive as possible	Retroductive, in-depth historically situated anal- ysis of pre-existing struc- tures and emerging agency Range of methods and data types to fit subject matter

Philosophies – interpretivism and postmodernism

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
Interpretivism			
Complex, rich Socially constructed through culture and language Multiple meanings, interpretations, realities Flux of processes, experiences, practices	Theories and concepts too simplistic Focus on narratives, stories, perceptions and interpretations New understandings and worldviews as contribution	Value-bound research Researchers are part of what is researched, subjective Researcher interpretations key to contribution Researcher reflexive	Typically inductive. Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpreted
Postmodernism			
Nominal Complex, rich Socially constructed through power relations Some meanings, interpretations, realities are dominated and silenced by others Flux of processes, experiences, practices	What counts as 'truth' and 'knowledge' is decided by dominant ideologies Focus on absences, silences and oppressed/repressed meanings, interpretations and voices Exposure of power relations and challenge of dominant views as contribution	Value-constituted research Researcher and research embedded in power relations Some research narratives are repressed and silenced at the expense of others Researcher radically reflexive	Typically deconstructive – reading texts and realities against themselves In-depth investigations of anomalies, silences and absences Range of data types, typically qualitative methods of analysis

Philosophies - pragmatism

Ontology (nature of reality or being)	Epistemology (what constitutes acceptable knowledge)	Axiology (role of values)	Typical methods
Pragmatism			
Complex, rich, external 'Reality' is the practical consequences of ideas Flux of processes, experiences and practices	Practical meaning of knowledge in specific contexts 'True' theories and knowledge are those that enable successful action Focus on problems, practices and relevance Problem solving and informed future practice as contribution	Value-driven research Research initiated and sustained by researcher's doubts and beliefs Researcher reflexive	Following research problem and research question Range of methods: mixed, multiple, qualitative, quantitative, action research Emphasis on practical solutions and outcomes

Know your research philosophies – Do the HARP test!

HARP Statements		Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Please indicate your agreement or disagreement with the statements below. There are no wrong answers.							
Your views on the nature of reality (ontology)							
1	Organisations are real, just like physical objects.	<input type="checkbox"/>					
2	Events in organisations are caused by deeper, underlying mechanisms.	<input type="checkbox"/>					
3	The social world we inhabit is a world of multiple meanings, interpretations and realities.	<input type="checkbox"/>					
4	'Organisation' is not a solid and static thing but a flux of collective processes and practices.	<input type="checkbox"/>					
5	'Real' aspects of organisations are those that impact on organisational practices.	<input type="checkbox"/>					

HARP and all materials relating to HARP are copyright © 2014 A. Bristow and M.N.K. Saunders

- Pages 161-164 of Saunders et al.
- Fill in a radar graph on miro (link)



30 minutes
exercise

Methodological Choice

A researcher must be able to explain why he chooses a particular method. This justification should be based upon the research questions and objectives and should also be consistent with his research philosophies. (Saunders, Lewis, & Thornhill, 2019)

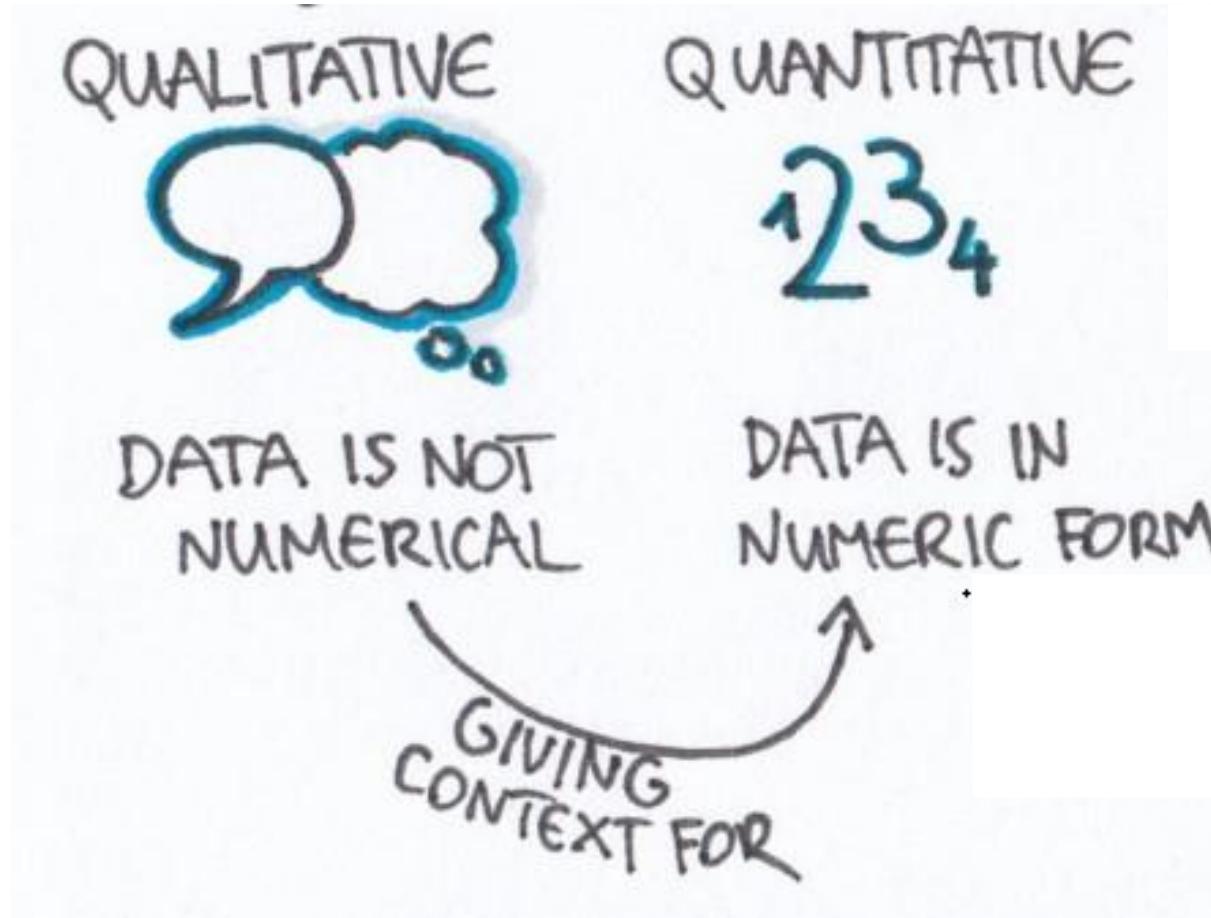
Study Approach

There exist three research designs one could adopt when conducting research:

- **Exploratory study:** ‘Way to ask open questions to discover what is going on and gain new insights about a subject of interest’. The steps would be to search literature, to interview experts and focus group interviews or individual interviews
- **Descriptive study:** ‘Way to acquire an accurate profile of happenings, people or situations’. Warning: Sometimes a descriptive study may become too descriptive and may therefore lead to worthless outcomes.
- **Explanatory study:** When performing this kind of study one wishes to determine causal relationships between certain variables.

It is possible for descriptive, explanatory and exploratory studies to coexist in one research project, where they might extend one another. (Saunders, Lewis, & Thornhill, 2019)

Quantitative vs. Qualitative?



- Mono-Method
- Multi-Method
- Mixed Method

Quantitative Methods

as methodological choice

Quantitative

A Definition:

“A type of educational research in which the researcher **decides what to study; asks specific, narrow questions; collects quantifiable data** from participants; **analyzes these numbers** using statistics; and conducts the inquiry in an **unbiased, objective** manner. “ (Creswell, 2006)

- “study designs are specific, well structured, have been **tested for their validity and reliability**, and can be explicitly defined and recognised” (Kumar, 2011), structural depth
- “clarity and distinction between designs and methods of data collection” (Kumar, 2011)
- replicability (not the case for quali)

Quantitative

- respondents **do not need to concord**:
researcher does not seek agreement of respondents with own interpretation etc. - sometimes distribution of results to participants as “approval mechanism” (Kumar, 2011)
- “structured, rigid, fixed and predetermined in their use to **ensure accuracy**” (Kumar, 2011)
- many more study designs in quantitative than qualitative (Kumar, 2011)
- appropriate for **quantifying magnitude** in variations and diversity

Quantitative

HOW TO START:

- determine what needs to be researched / operationalise
 - > pre-study or literature review
- Research question (specific, narrow) or clear hypothesis
- select the study object/participants/individuals - logically chosen?
- select study site

“How well can the food supply of the medium-sized Western European city The Hague (NL) be safeguarded through a regional P policy that respects P needs of the feeding hinterlands?”

Qualitative Methods

as a methodological choice

“main focus in qualitative research is to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people...

The study designs and its scope are therefore often based on deductive rather than inductive logic, are flexible and emergent in nature, and are often non-linear and non-sequential in their operationalisation.”^(Kumar, 2011)

Allowing for explorative work and building on an interpretive philosophy

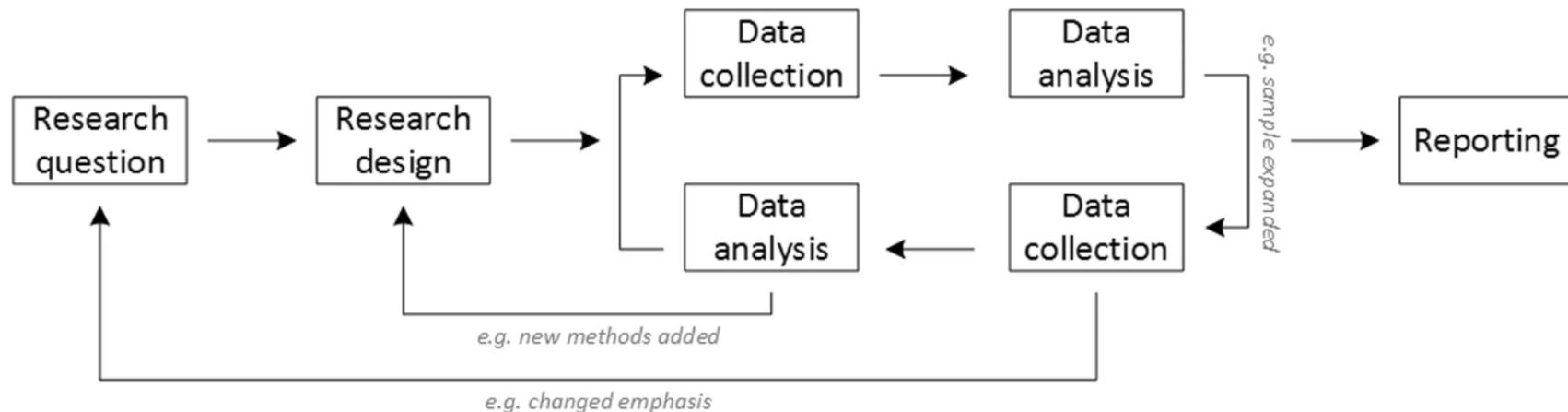


Image : The Iterative Research Process (Busetto et al., 2020)

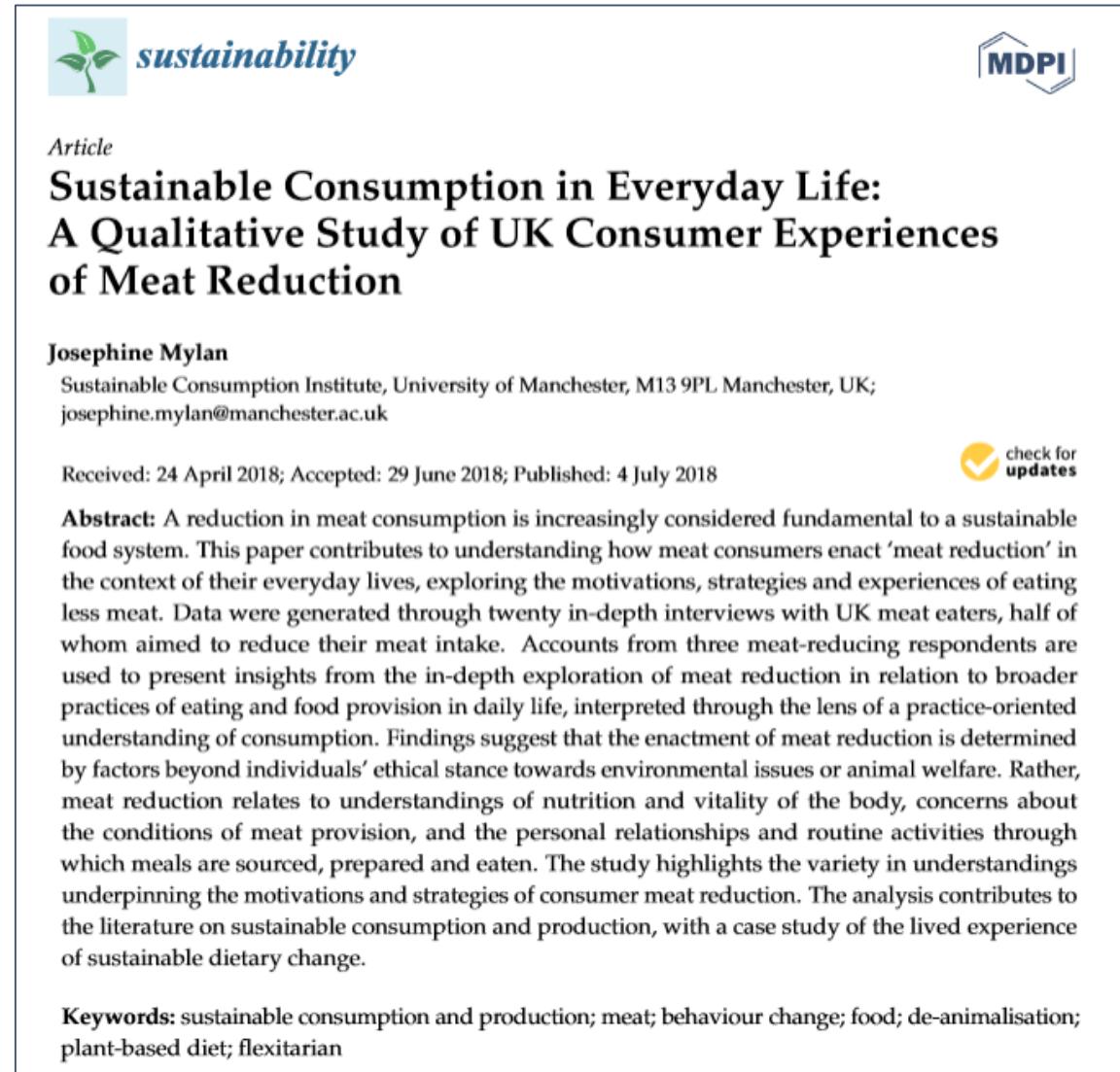
Qualitative

“main focus in qualitative research is to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people...

The study designs and its scope are therefore often based on deductive rather than inductive logic, are flexible and emergent in nature...

...most qualitative designs are not as structured and sequential as quantitative ones.” (Kumar, 2011)

Allowing for explorative work and building on an interpretive philosophy



The screenshot shows a journal article from the **sustainability** MDPI website. The article is titled "Sustainable Consumption in Everyday Life: A Qualitative Study of UK Consumer Experiences of Meat Reduction" by Josephine Mylan. It was received on April 24, 2018, accepted on June 29, 2018, and published on July 4, 2018. The abstract discusses meat reduction in everyday life, involving twenty in-depth interviews with UK meat eaters. The study highlights variety in understandings underpinning motivations and strategies of consumer meat reduction. The analysis contributes to literature on sustainable consumption and production. The keywords listed are sustainable consumption and production; meat; behaviour change; food; de-animalisation; plant-based diet; flexitarian.

sustainability 

Article

Sustainable Consumption in Everyday Life: A Qualitative Study of UK Consumer Experiences of Meat Reduction

Josephine Mylan
Sustainable Consumption Institute, University of Manchester, M13 9PL Manchester, UK;
josephine.mylan@manchester.ac.uk

Received: 24 April 2018; Accepted: 29 June 2018; Published: 4 July 2018

 check for updates

Abstract: A reduction in meat consumption is increasingly considered fundamental to a sustainable food system. This paper contributes to understanding how meat consumers enact ‘meat reduction’ in the context of their everyday lives, exploring the motivations, strategies and experiences of eating less meat. Data were generated through twenty in-depth interviews with UK meat eaters, half of whom aimed to reduce their meat intake. Accounts from three meat-reducing respondents are used to present insights from the in-depth exploration of meat reduction in relation to broader practices of eating and food provision in daily life, interpreted through the lens of a practice-oriented understanding of consumption. Findings suggest that the enactment of meat reduction is determined by factors beyond individuals’ ethical stance towards environmental issues or animal welfare. Rather, meat reduction relates to understandings of nutrition and vitality of the body, concerns about the conditions of meat provision, and the personal relationships and routine activities through which meals are sourced, prepared and eaten. The study highlights the variety in understandings underpinning the motivations and strategies of consumer meat reduction. The analysis contributes to the literature on sustainable consumption and production, with a case study of the lived experience of sustainable dietary change.

Keywords: sustainable consumption and production; meat; behaviour change; food; de-animalisation; plant-based diet; flexitarian

Qualitative

“main focus in qualitative research is to understand, explain, explore, discover and clarify situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people...

...often flexible and emergent in nature, can be non-linear and non-sequential in their operationalisation.” (Kumar, 2011)

Allowing for explorative work and building on an interpretive philosophy

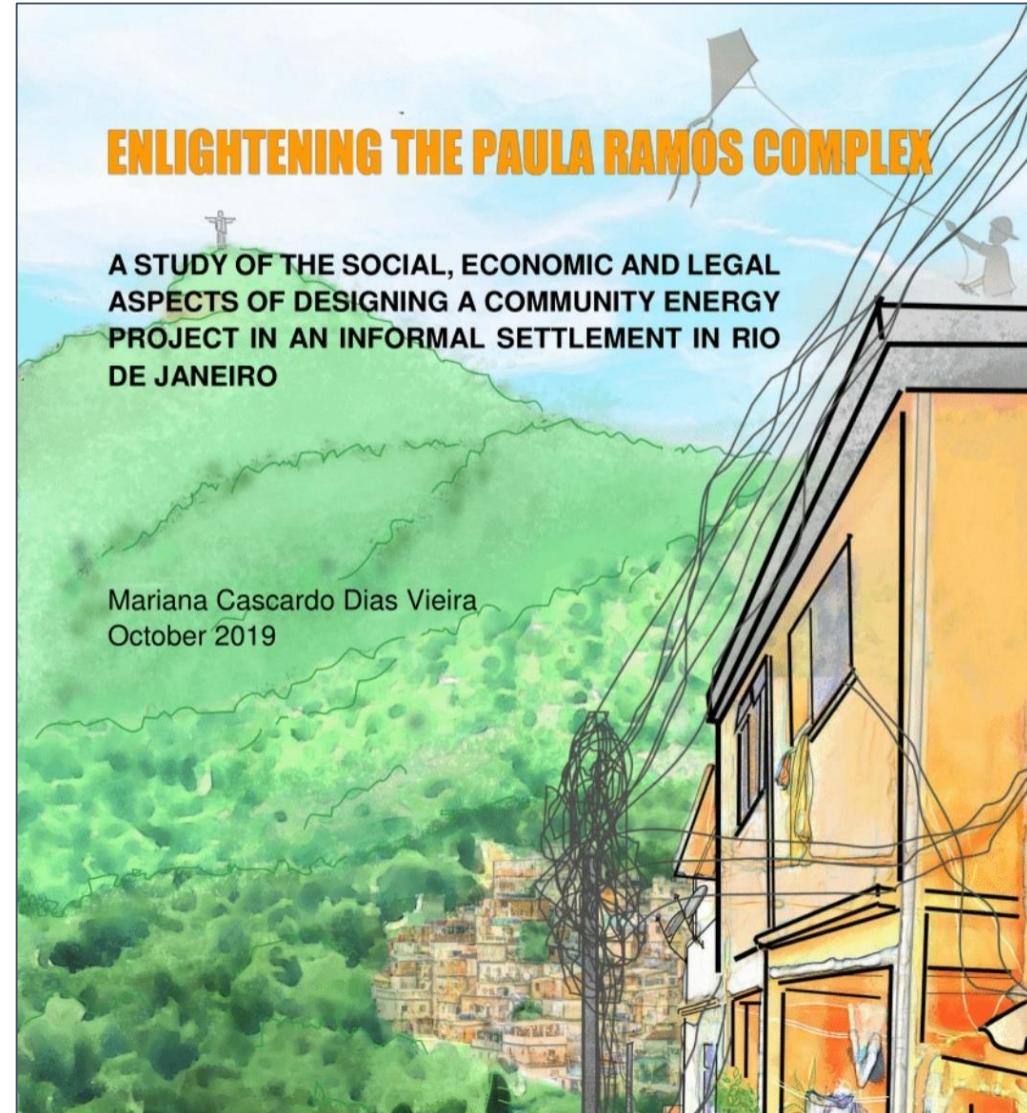


Image Source: Cascardo Dias Viera, M. (2019)

Mixed Methods

as a methodological choice

Mixed

Many research designs are likely to combine qualitative and quantitative elements.

This is because some data derived from qualitative research may be analysed quantitatively, or may be used to inform the design of another questionnaire. (Saunders, Lewis, &

Thornhill, 2019)

Good quantitative research needs qualitative elements to make sense of the data and findings and “vice versa”

Do not fix yourself on either of the two approaches as they complement each other and may be interdependent (consider mixed or multi methods approach)

Energy Research & Social Science 52 (2019) 144–158

Contents lists available at ScienceDirect

Energy Research & Social Science

journal homepage: www.elsevier.com/locate/erss

Check for updates

Original research article

It starts at home? Climate policies targeting household consumption and behavioral decisions are key to low-carbon futures

Ghislain Dubois^a, Benjamin Sovacool^{b,c,*}, Carlo Aall^d, Maria Nilsson^f, Carine Barbier^g, Alina Herrmann^e, Sébastien Bruyère^a, Camilla Andersson^{f,h}, Bore Skold^f, Franck Nadaudⁱ, Florian Dorner^e, Karen Richardsen Moberg^d, Jean Paul Ceron^a, Helen Fischer^j, Dorothee Amelung^j, Marta Baltruszewicz^k, Jeremy Fischer^a, Françoise Benevise^a, Valérie R. Louis^j, Rainer Sauerborn^e

^a TEC Conseil, France
^b Aarhus University, Denmark
^c Science Policy Research Unit, University of Sussex, United Kingdom
^d Western Norway Research Institute, Norway
^e Heidelberg Institute for Global Health, University Hospital Heidelberg, Germany
^f Department of Public Health and Clinical Medicine, Epidemiology and Global Health, Umeå University, Sweden
^g Centre International de Recherche sur l'Environnement et le Développement, France
^h Department of Radiation Sciences, Umeå University, Sweden
ⁱ Centre International de Recherche sur l'Environnement et le Développement (CIRED), Nogent-sur-Marne, France
^j University of Heidelberg, Germany
^k University of Leeds, United Kingdom

ARTICLE INFO

Keywords:

Deep decarbonisation
Climate change
Mitigation
Household decision-making
Behavioral wedge
Climate policy
Greenhouse gases

ABSTRACT

Through their consumption behavior, households are responsible for 72% of global greenhouse gas emissions. Thus, they are key actors in reaching the 1.5 °C goal under the Paris Agreement. However, the possible contribution and position of households in climate policies is neither well understood, nor do households receive sufficiently high priority in current climate policy strategies. This paper investigates how behavioral change can achieve a substantial reduction in greenhouse gas emissions in European high-income countries. It uses theoretical thinking and some core results from the HOPE research project, which investigated household preferences for reducing emissions in four European cities in France, Germany, Norway and Sweden. The paper makes five major points: First, car and plane mobility, meat and dairy consumption, as well as heating are the most dominant components of household footprints. Second, household living situations (demographics, size of home) greatly influence the household potential to reduce their footprint, even more than country or city location. Third, household decisions can be sequential and temporally dynamic, shifting through different phases such as childhood, adulthood, and illness. Fourth, short term voluntary efforts will not be sufficient by themselves to reach the drastic reductions needed to achieve the 1.5 °C goal; instead, households need a regulatory framework supporting their behavioral changes. Fifth, there is a mismatch between the roles and responsibilities conveyed by current climate policies and household perceptions of responsibility. We then conclude with further recommendations for research and policy.

Image for representation only, refer to the original paper (Dubois et al. 2019)

Mixed

Many research designs are likely to combine qualitative and quantitative elements.

This is because some data derived from qualitative research may be analysed quantitatively, or may be used to inform the design of another questionnaire.

Do not restrict yourself on either of the two approaches as they complement each other and may be interdependent (consider mixed or multi methods approach)

2.1. Method 1: Mapping empirical household carbon footprints

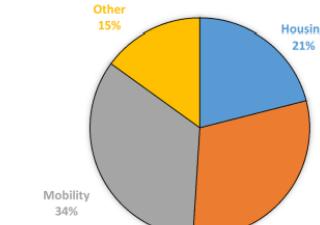
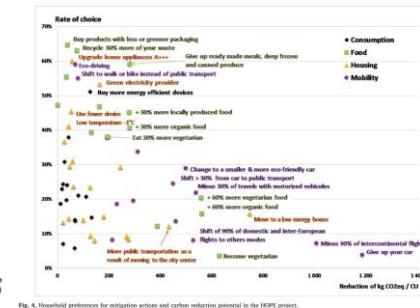


Fig. 1. Initial median carbon footprint (kg CO₂e per consumption unit per year) HOPE households.
Source: Authors, based on HOPE data.

2.2. Method 2: Interactive mitigation simulation game with households



2.3. Method 3: Qualitative household interviews

2.4. Method 4: Policy analysis

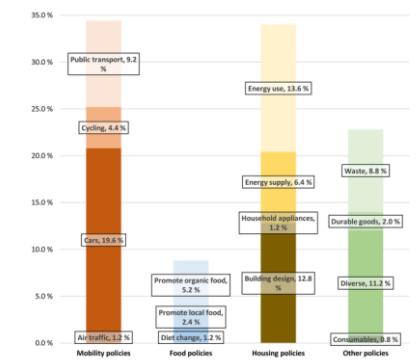
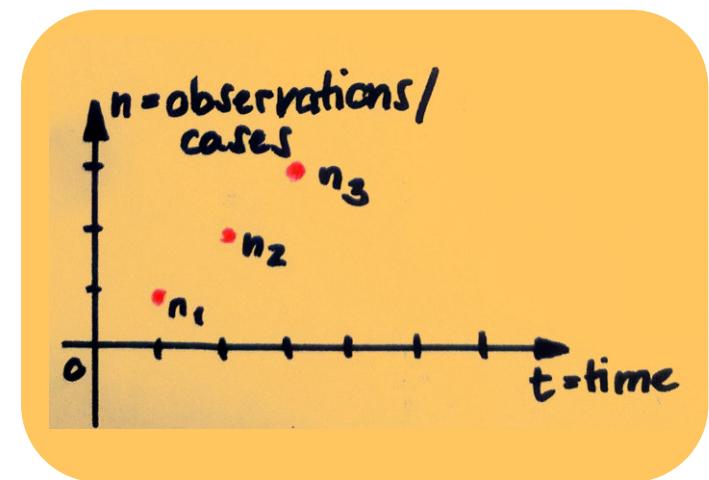
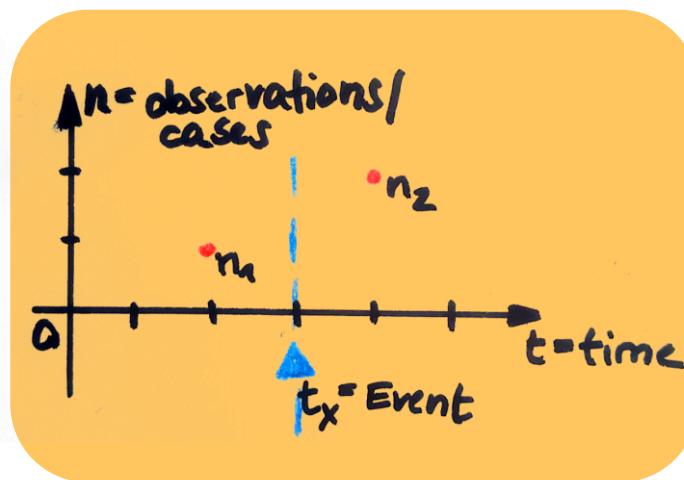
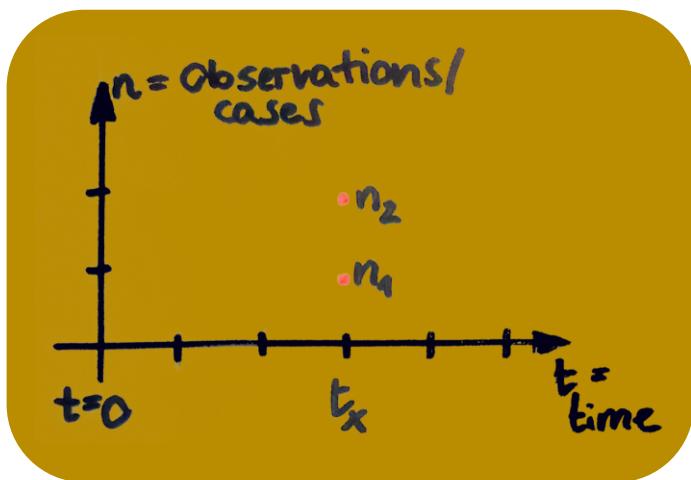


Image for representation only, refer to the original paper (Dubois et al. 2019)

Time Horizon

Time Horizon

- reference period of the study can be either:



Cross-sectional OR Before/after OR Longitudinal

Research Strategies

The strategies bring us to more pragmatic concerns such as the extent to existing knowledge and access to participants and other sources of data. (Saunders, Lewis, & Thornhill, 2019)

Research Strategies



Experiment

Survey

Correlational

Grounded
Theory

Ethnography

Action
Research



Archival
Research

Case Study

Narrative
Inquiry

- **Intervention research** (a between subjects approach)
- used in natural & social sciences
- good to explore causal links > getting more complex if these links are supposed to be quantified

STEPS:

- 1) develop **hypothesis**
- 2) select **sample** from population and allocate randomly (Random Controlled Trials = RCT)
- 3) **intervene/change** one or more parameters
- 4) **measure** impact on one or few dependent variables

HOW? WHY?

“The husband and wife duo—Banerjee and Duflo **borrowed the methodology from the pharmaceutical industry.**

For instance, they studied two infant immunisation campaigns in some villages of Udaipur (Rajasthan). It brought out that a slightly tweaked campaign, which **offered 1kg of ‘daal’** for every mother who brought their children for immunisation, improved turn-out. “

“Then the RCTs discussed in this book are **ethically worrying**.

Furthermore, the principle of "**informed consent**" does not seem to get much respect from the new developmental randomistas;

clearly many people did not know that they were being experimented on (notable when it is groups, such as villages, that are randomized, rather than individuals).

And there are even **risks of doing real harm**” (Ravaillon, 2012)

“[It may be] necessary to **abdicate ideological blinkers** in pursuit of
economic pragmatism to promote socio economic justice” (Misra & Kumar, 2020)



...Duflo & Banerjee (together with a third frontrunner) won the Nobel Prize for Economics in 2019.

What are your thoughts on this method?

- Associating or relating variables in a **predictable pattern** for one group
- non-experimental or quasi-experimental
- statistics based
- **(multiple) regression analysis** testing factors against each other (dependent and independent variable)

2. HYPOTHESIS

$$Y = \beta + \alpha_1 * x_1 + \alpha_2 * x_2 + \alpha_3 * x_3 + \varepsilon$$

- Y : child mortality as number of deaths of children below age 5 [thousands]
 x_1 : proportion of population with access to improved drinking water [%]
 x_2 : GDP [trillion US\$]
 x_3 : absolute number of cases of malaria
 β : starting value of child mortality 1990 [thousands]
 ε : error term

- (multiple) regression analysis tests factors against each other (dependent and independent variable)
- p-value shows how significantly the dependent variable (Y) is influenced
- r values indicate how perfectly the values match the identified trend/correlation (e.g. linearity)
- beta values/coefficients indicate the “slope”

Access to improved source of drinking water (p-value = 0.0000000000000022)
 GDP (p-value = 0.00000000000671)
 cases of malaria (p-value = 0.0000001123)

```
> cor(subset(dataindia, select = -YEAR))
   CHILD.MORTALITY  SAFE.WATER      GDP    MALARIA
CHILD.MORTALITY    1.0000000 -0.9974561 -0.9840641  0.9389187
SAFE.WATER        -0.9974561  1.0000000  0.9815273 -0.9410078
GDP              -0.9840641  0.9815273  1.0000000 -0.9348536
MALARIA          0.9389187 -0.9410078 -0.9348536  1.0000000
>
```

fig. 8: Summary of R-Values
 (author's own creation, 2017)

Survey

Quantitativ

- **non-experimental/non-intervention research**
- **describing trends for a population**
- **good for deductive approaches**
- **more control over the research process**
(researcher not delayed by waiting for data)

TYPE OF ORGANISATION		SCORING OF CRITERIA(C1-C19)	
Independent Variable	Assigned Value	Dependent Variable	Assigned Value
NGO*/NPO**	1	Absolutely Vital	4
Academic Institute	2	Very Important	3
Private Organisation	3	Slightly Important	2
Consultant/ Freelancer	4	Not Important	1

Table 11 – (Left) Showing the Assigned Values on the Independent Variable for the purpose of carrying out the One-Way ANOVA, (Right) Showing the Assigned Value on the Independent Variable for the purpose of carrying out the One-Way ANOVA | Source: Author's Own

Each criterion was tested separately against the Independent variable, reporting the F values (within the degrees of freedom) and the p-value, indicated as Sig. in the fig below. In the case of the analysis done for C1, $F(3,14)=0.44$, $p=0.727$, meaning that no significant differences were found, ruling out also any biases, in the scoring of C1.

What? who? Where? How much? How many?

Survey

Quantitativ

- gain **quantitative** data - for **qualitative** analysis
- needs representative **sample**
- limited **scope** (or you won't get responses)
- means to do Questionnaires, structured observation or structured interview

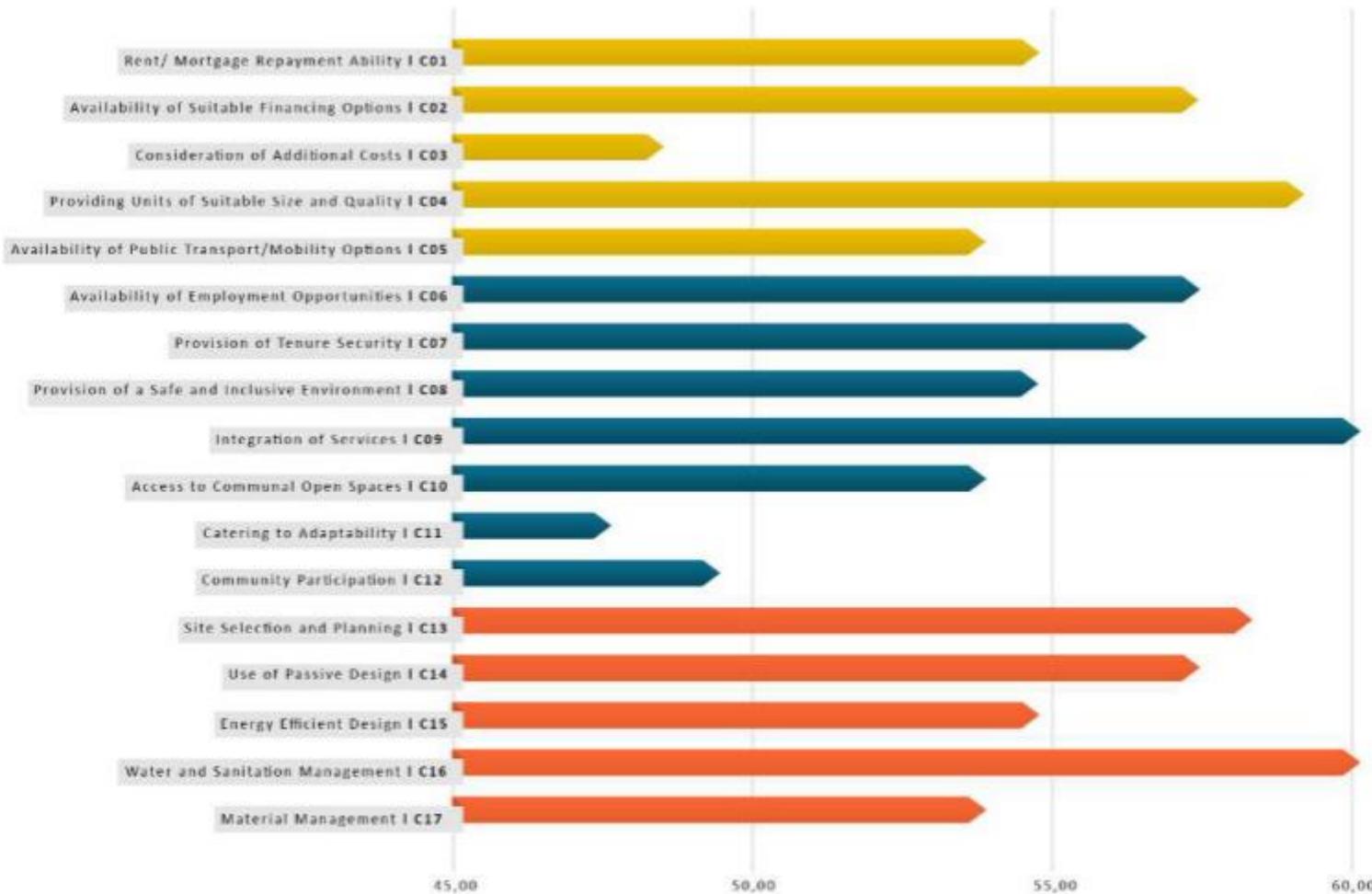


Figure 5.5 – Final Scoring of all Criteria by the Experts | Source: Author's Own

Grounded Theory

Quantitativ

- **inductive & deductive combination** to build a theory
- predict & explain behaviour
- series of observations
 - > generate **predictions**
 - > **tested** in further observations
- “grounded in the data”

The Journal of Systems and Software 114 (2016) 101–124

Contents lists available at ScienceDirect

The Journal of Systems and Software

journal homepage: www.elsevier.com/locate/jss

 ELSEVIER



The daily stand-up meeting: A grounded theory study

Viktoria Stray ^{a,*}, Dag I.K. Sjøberg ^{a,b}, Tore Dybå ^{a,b}

^a University of Oslo, Norway
^b SINTEF, Norway



ARTICLE INFO

Article history:
Received 17 July 2014
Revised 17 November 2015
Accepted 4 January 2016
Available online 11 January 2016

Keywords:
Daily meeting
Daily Scrum meeting
Agile software development

ABSTRACT

The daily stand-up meeting is one of the most used agile practices but has rarely been the subject of empirical research. The present study aims to identify how daily stand-up meetings are conducted and what the attitudes towards them are. A grounded theory study with 12 software teams in three companies in Malaysia, Norway, Poland and the United Kingdom was conducted. We interviewed 60 people, observed 79 daily stand-up meetings and collected supplementary data. The factors that contributed the most to a positive attitude towards the daily stand-up meeting were information sharing with the team and the opportunity to discuss and solve problems. The factors that contributed the most to a negative attitude were status reporting to the manager and that the frequency of the meeting was perceived to be too high and the duration too long. Based on our results, we developed a grounded theory of daily stand-up meetings and proposed empirically based recommendations and guidelines on how to organize them. Organizations should be aware of the factors that may affect the attitude towards daily stand-up meetings and should consider our recommendations and guidelines to make this agile practice as valuable as possible.

© 2016 Elsevier Inc. All rights reserved.

Grounded Theory

Quantitativ

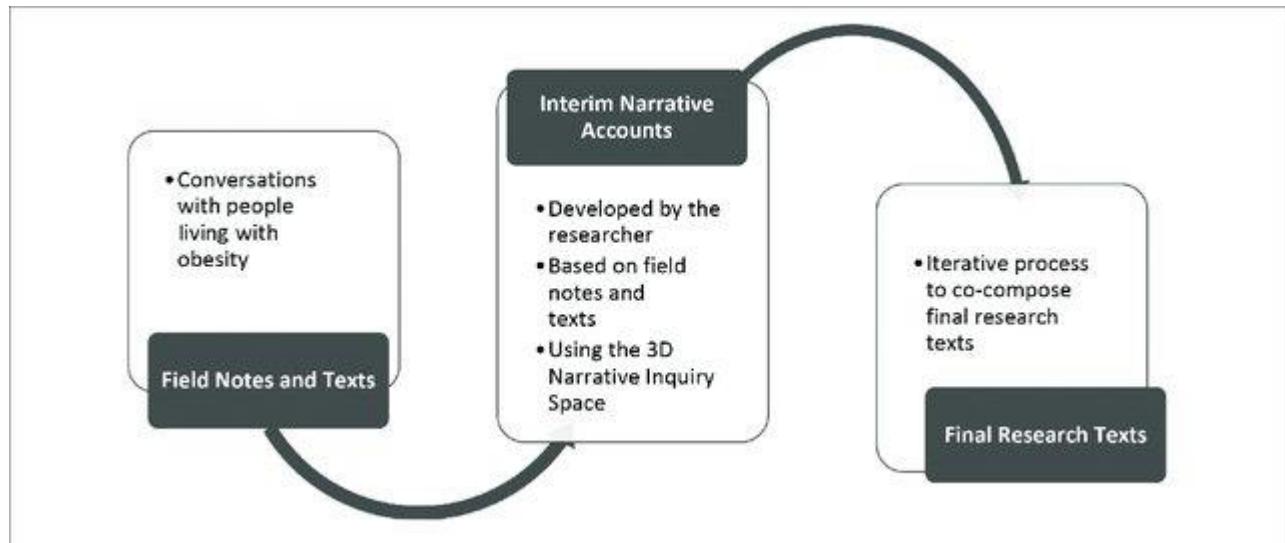
- not just content analysis or word counts
 - **conceptual assessment** > interpretation process
- **messy** approach - but not to be confused with other strategies and methods
- **challenging** in requiring experience, dedication and creativity

Technique	Number	Description
Interviews	8 in Phase 1	We conducted semi-structured interviews with open-ended questions
	52 in Phase 2	
Observations of DSMs	9 in Phase 1	We made notes from all DSMs we observed. Thirteen of the observations were
	70 in Phase 2	recorded and transcribed word by word
Questionnaires	19 in Phase 2	Project members in Alpha answered a questionnaire anonymously

Narrative Inquiry

Qualitative

- descriptive & qualitative & interpretive
- rather young, innovative (*1990s)
- **human experience of the world**
- **can be 3dimensional:**
 - across past, present & future
 - sociality of thoughts and reactions
 - place of events



Narrative Inquiry

- **reconstruct experience** by constructing a narrative
- **data sources:**
 - interviews
 - photos
 - letters
 - diaries
 - stories
 - ...

Qualitative

Narrative Inquiry: Articles on Slavery

17 Pages • Posted: 17 Jun 2019

[Richard Taylor](#)

Morgan State University

Date Written: June 3, 2019

Abstract

In my research, which involves collecting individuals' account and their lived experiences of becoming a slave. I am seeking to understand how racism affects the worldwide view in today's society. In view of history, in relation to slavery, I was presented four summarized interviews from voices of participants who actually lived between 1936 and 1938, the slavery time frame. Three of the four participants were from Alabama and one from Kansas. The language usage of participants from Alabama was broken English which was challenging by means of interpretation. It appears the participant from Kansas spoke correct grammatically utilizing good grammar and word pronunciation. Furthermore, the writers led one to believe the participants from Alabama were not educated. In relation to the content of their lived experiences, while living in different areas, each participant brought to the forefront similarities related to working on a plantation with a white master, viewpoints surrounding education, and the importance of religious church meetings.

Keywords: Slavery, Alabama

Ethnography

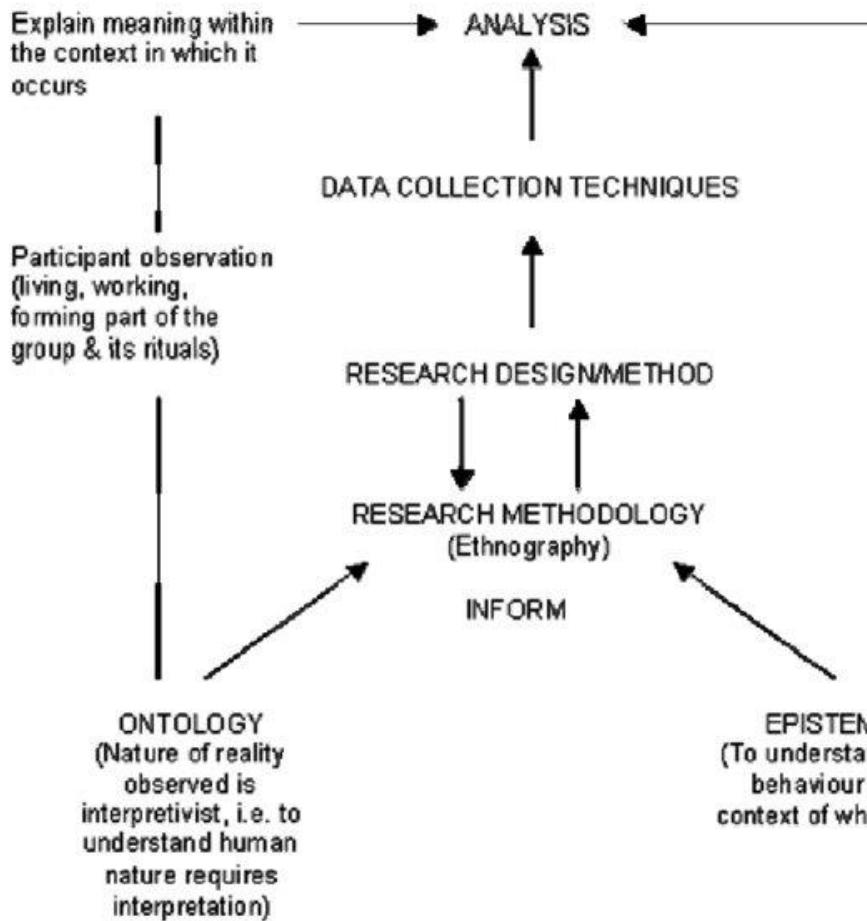
Mixed

Ethno=People; Graphy=Writing

This approach is used to study particular groups of people.

It helps explore and analyse people in groups who share the same space (this could be the same street, work group, organisation or even society) and who interact with each other.

Ethnographic strategies: Realist Impressionist/Interpretive and Critical



Ethnographic Research Method (Kane et al., 2006)



"Can you hurry this up?
I have a report on this due tonight."

The changing concept of time
invested in ethnographic research
(Cook, 2015)

Action Research

Mixed

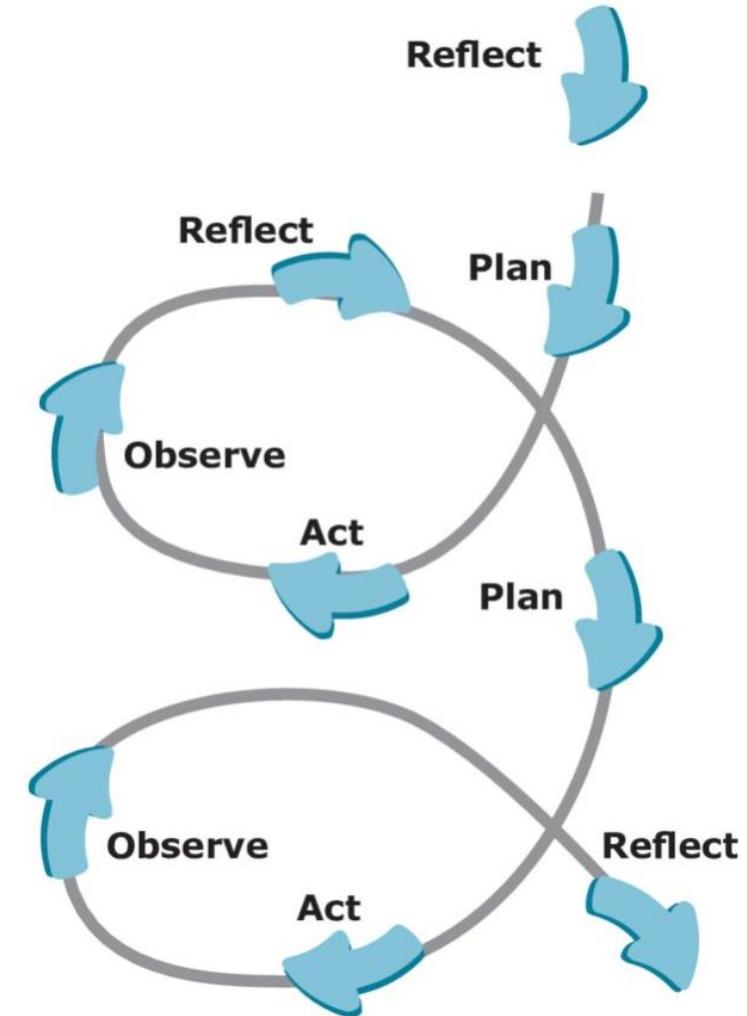
Used to develop answers to *real organisational problems by using a participative and collaborative approach.*

Action research will influence the participants and the organisation beyond the research project.

“...action research is a social process in which a researcher works with members of an organisation to enhance their situation and their organisation. “ -Greenwood and Levin, 2007

This type of research has five themes:

- Purpose
- Process
- Participation
- Knowledge
- Implications



Case Study

Qualitative

Allows one to explore a research topic or phenomenon , within its context or within real-life contexts.

Doesn't have to be a boundary between that which is being studied (the phenomenon or topic) and the context within which it is being studied (the real-life 'case').

Especially when one wishes to explore existing theory.

Case study research could combine qualitative and quantitative methods such as questionnaires and interviews. Supports triangulation*. (Saunders, Lewis, & Thornhill, 2019)

*The use of different data collection techniques within one study to be sure that the data are telling you what you think they tell you

THE IMPACT – FIVE CASE STUDIES

IM Toolbox for small water supply systems was implemented in five communities during a period of 1 – 1.5 years.

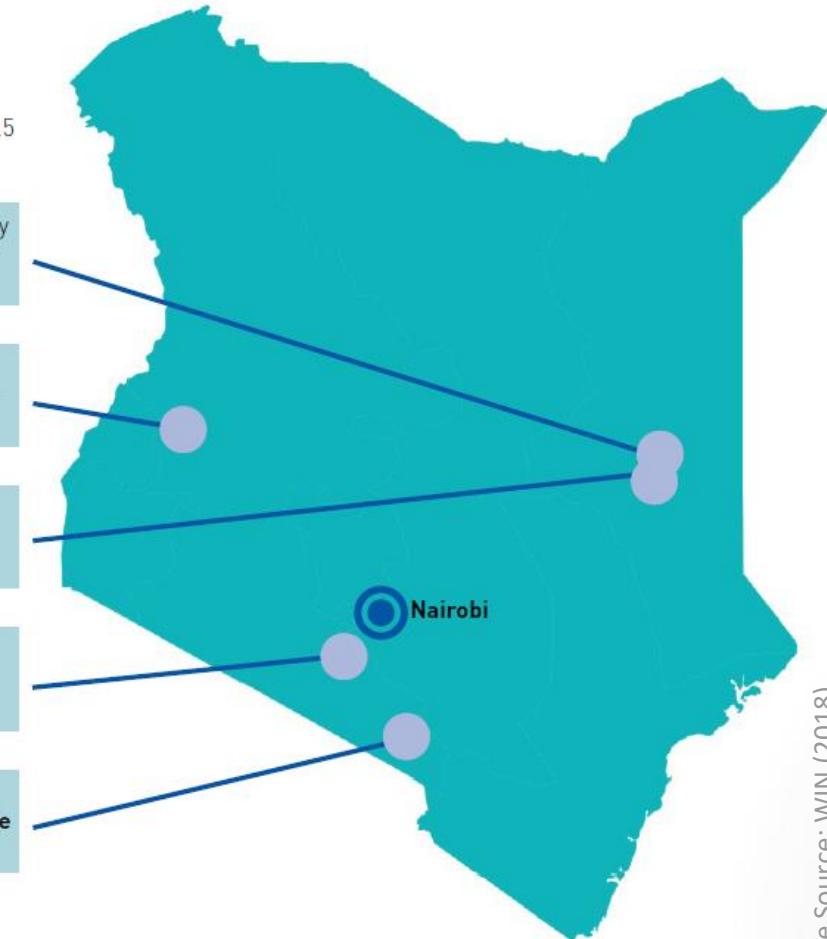
Creating a platform for accountability between the **Dagahaley community** and the water committee.

Preventing integrity risks in a newly established community group in the **Tabaita community**.

Building collective action and improving governance in the **Sabuli community**.

Learning from failures: the challenges in the **Olomaroroi community**.

Moving towards formal water management in the **Olchoro-Onyokie community**.



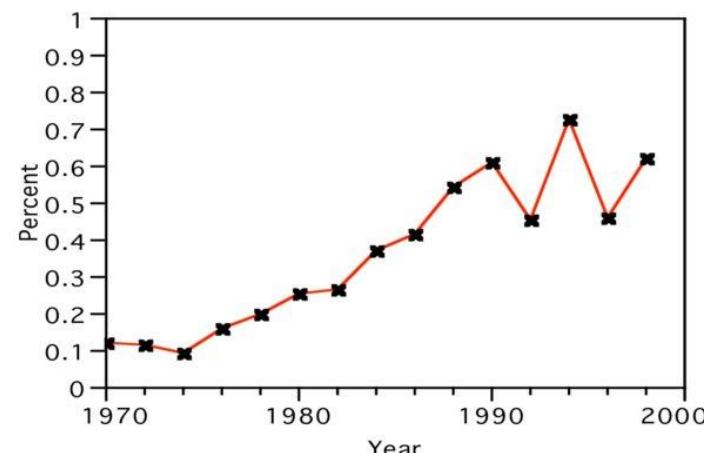
Archival Research

Qualitative

An archival research strategy uses administrative records and documents as the main source of data.

Research questions with focus upon the past could be answered.

Not only historical but also recent data documents could be collected and analysed when adopting this strategy. (Saunders, Lewis, & Thornhill, 2019)



Objects of Investigation	Data Source
Structural Embeddedness	Relational ties (Corporate interlocks, exchange agreements, market transactions, reference groups, etc.)
Meaning Systems	Professional discourse (journal articles, trade publications), Procedural Talk (emails), Organizational identity statements (directories, IPOs, annual reports)
Grammars and Repertoires of Action	Event sequences, Organizational Practices (procedural records)
Institutional Logics	Classification statements (directories, industry reports, organizational narratives)

Left: Growing trend for articles employing archival methods on research about organisations. Above: Data Sources and Dominant Methods for Archival Research on Organizations. (Mohr and Ventresca, 2002)

Data Collection

Sample Selection

Primary Data- Interviews, Questionnaires, Observation

Access to Data

Quantitative

DATA SPECIFICATIONS

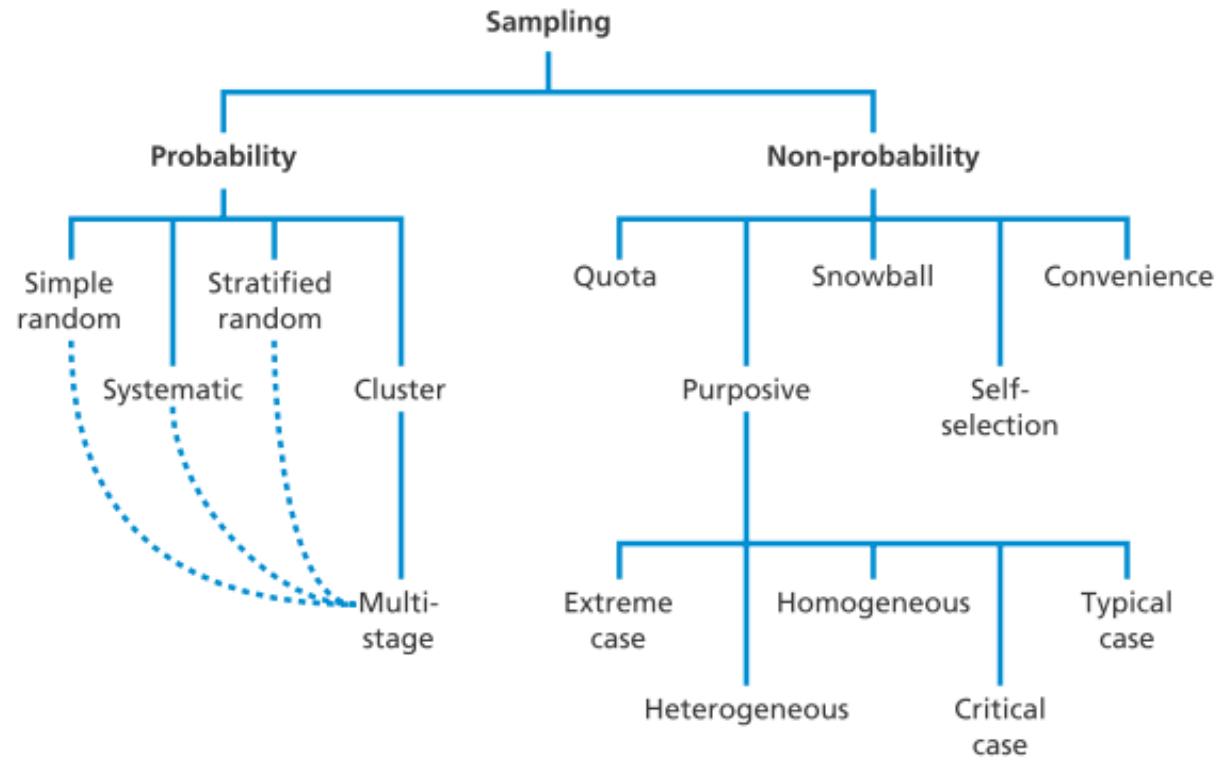
- **Numberic:** scores that measure attributes > requirement for measurement & classification
- rather large data sets
- comparing groups or relating factors
- mostly **secondary data**
- can include or be combined with spatial data

DATA TYPES

- descriptive/**nominal** (e. g. count occurrences in one category)
- ranked/**ordinal** data (e. g. scores)

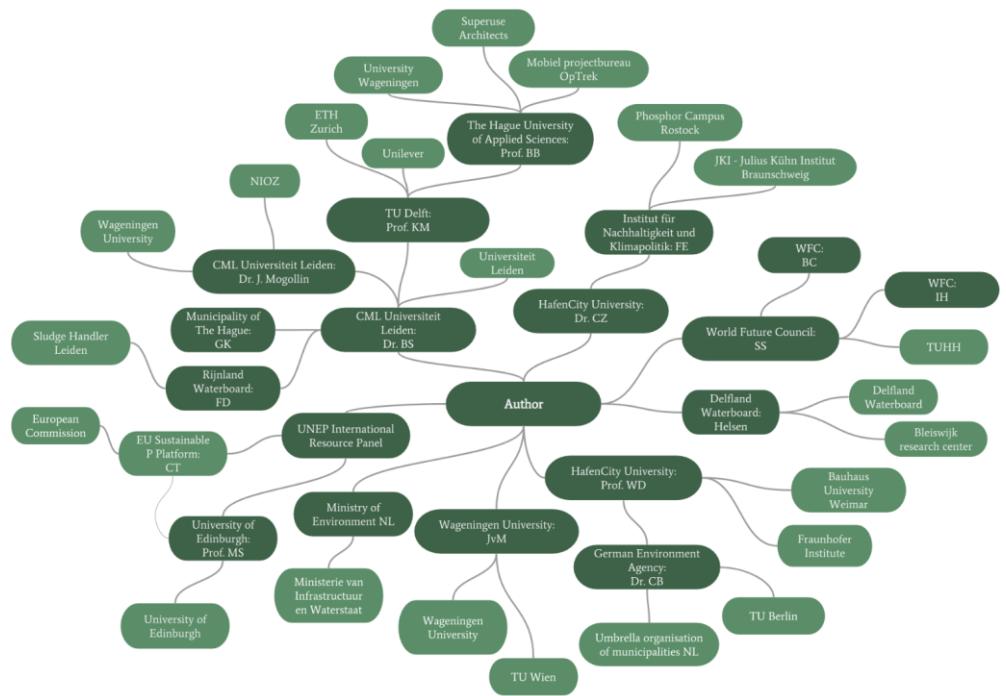
Sample Selection

- sampling saves time and resources and might be more accurate than census
- probability sampling/**representative** sampling:
 - known and equal likelihood of selection per individual
 - no less than 50 cases
- non-probability sampling cannot be used to statistically evaluate attributes
- sample from a **sampling frame** (all)



Interviews

- beware of interviewee selection (“**good news syndrome**”/bias!)
 - apply a **systematic approach**:
 - snowball sampling/chain sampling
 - group with relevant characteristics/selection criteria:
 - actors
 - **experts**: persons with specific, relevant knowledge - representative for a certain group but NOT the people acting within a certain context (refer to Gläser & Laudel)



Interviews

- structured or semi-structured interviews (less strict, more loose topic guide of key questions)
- take notes, make recordings but consider data protection
- yields qualitative data (can be evaluated quantitatively)

3. Status Quo: [10min]

- 3.1. What would you state as the problem around P displacement? Which reason/main issue do you identify?
- 3.2. What are the drivers/pressures worsening the situation?
- 3.3. What is needed to close the anthropogenic P cycle? From a technical/political/legislative point of view? [#hierarchyscales]
- 3.4. What key strategies/measures/policies do you deem necessary? Which legal framework/procedures?

4. Potential: [10min]

- 4.1. Which opportunities for feasible action do you see? From a technical/legislative/economic point of view? Which benefits could be utilized?
- 4.2. Which examples of good governance of P related material flows are you aware of? Or good examples in terms of applied scientific knowledge on technology?
- 4.3. Where? How? Which action fields have been addressed and which tools have been used?

5. Challenges: [10min]

- 5.1. Which barriers hinder good P management in your opinion? Which pitfalls should be considered when transferring strategies of best practise examples/the one mentioned above?
- 5.2. Which criteria need to be met for a transfer of exemplary learning on improved P management?

Questionnaires

Quantitative Data

#1 Questions that can have quantified replies, by using the tools like the Likert Scale

Pros: Leads the participants with fixed scenarios, Faster
Cons: High reliance on the design of the questions, Bias

First, we asked household representatives to rate mitigation actions on a Likert scale from 1 (very willing) to 5 (not willing), i.e. "Imagine you would be required to reduce your carbon footprint by 50% by 2030.]

Qualitative Data

#2 Questions that can have open ended replies to analyse qualitatively

Pros: Giving freedom to participants, collecting ideas
Cons: As a researcher you have to have a framework within which to analyse the information (unexpected)

Second, we asked them to consider voluntary actions, i.e. "Which actions would you actually like to implement to reduce your carbon footprint by 50% by 2030?"

Mixed

#3 Questions that quantify the subjective replies from #2

Pros: Allows you as a researcher to better understand the disposition of the participant, without having restricted them

Cons: Participants have to be willing to put in the time for what might seem like a repetitive process.

We finally asked them to consider "forced" or mandatory options, i.e. "Which actions would you choose if you were forced to reduce your carbon footprint by 50% by 2030? Continue your rank order from round 2. You may choose up to 30 actions in total." This choice of having a voluntary and a forced scenario allows us to distinguish the spontaneous choices from the ones made under stringent circumstances.

Questionnaires

Quantitative Data

#1 Questions that can have quantified replies, by using the tools like the Likert Scale

Pros: Leads the participants with fixed scenarios, Faster
Cons: High reliance on the design of the questions, Bias

Qualitative Data

#2 Questions that can have open ended replies to analyse qualitatively

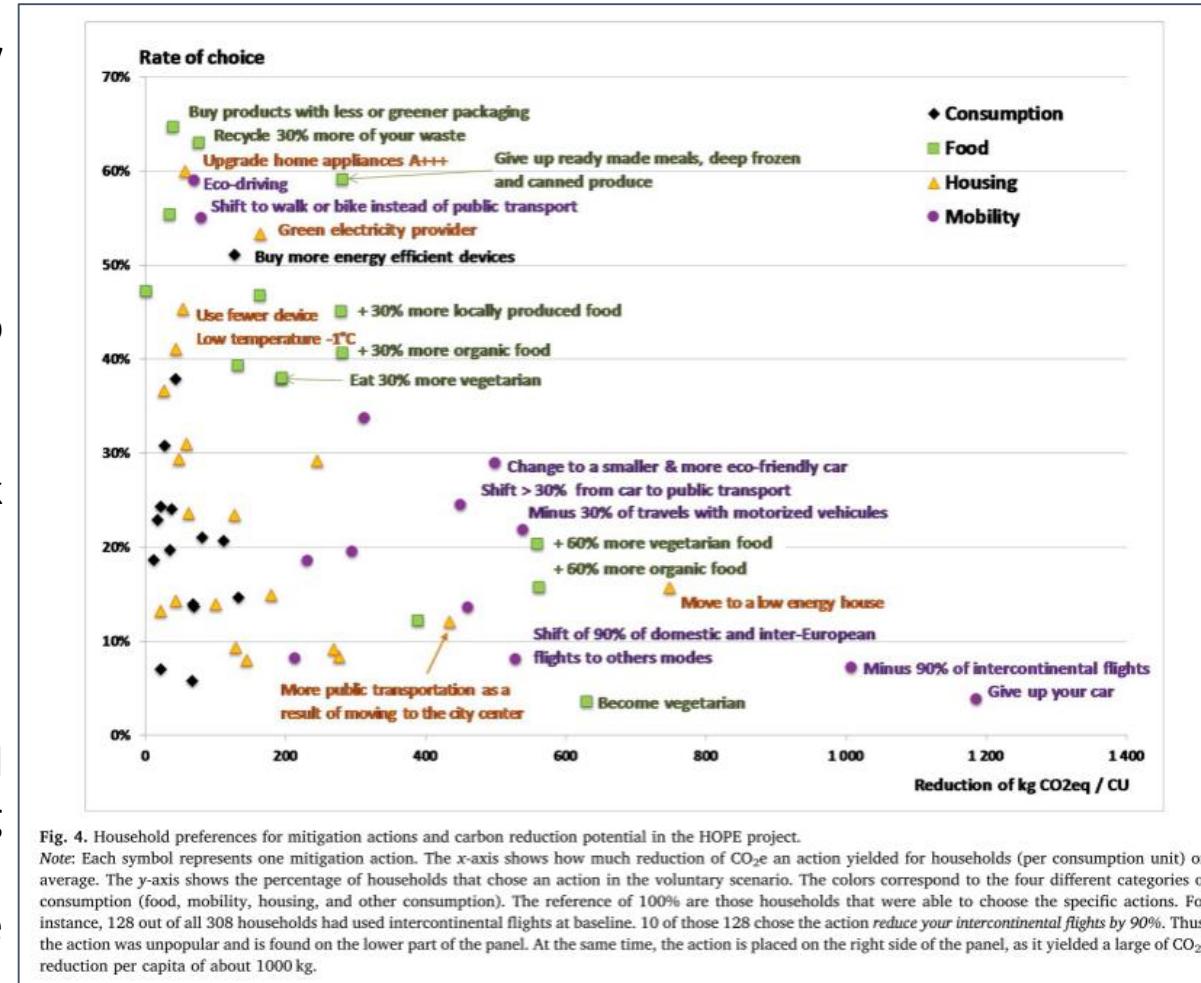
Pros: Giving freedom to participants, collecting ideas
Cons: As a researcher you have to have a framework within which to analyse the information (unexpected)

Mixed

#3 Questions that quantify the subjective replies from #2

Pros: Allows you as a researcher to better understand the disposition of the participant, without having restricted them

Cons: Participants have to be willing to put in the time for what might seem like a repetitive process.



Access to Data: Types & Strategies

Types of access to data:

- Traditional access
- Internet-mediated access
- Intranet-mediated access
- Hybrid access

Negotiating access

Issues of being an external researcher

Issues of being an internal/participant researcher

(Saunders, Lewis, & Thornhill, 2019)

Strategies for gaining access

- Familiarity with the group and sufficient time
- Using existing contacts and/or developing new ones
- Providing clear account of requirements for participants
- Overcoming organisational concerns
- Possible benefits to organisation granting access and using suitable language
- Facilitating replies, developing access, and establishing credibility

Access to Data: Protection & Management

Data protection and management

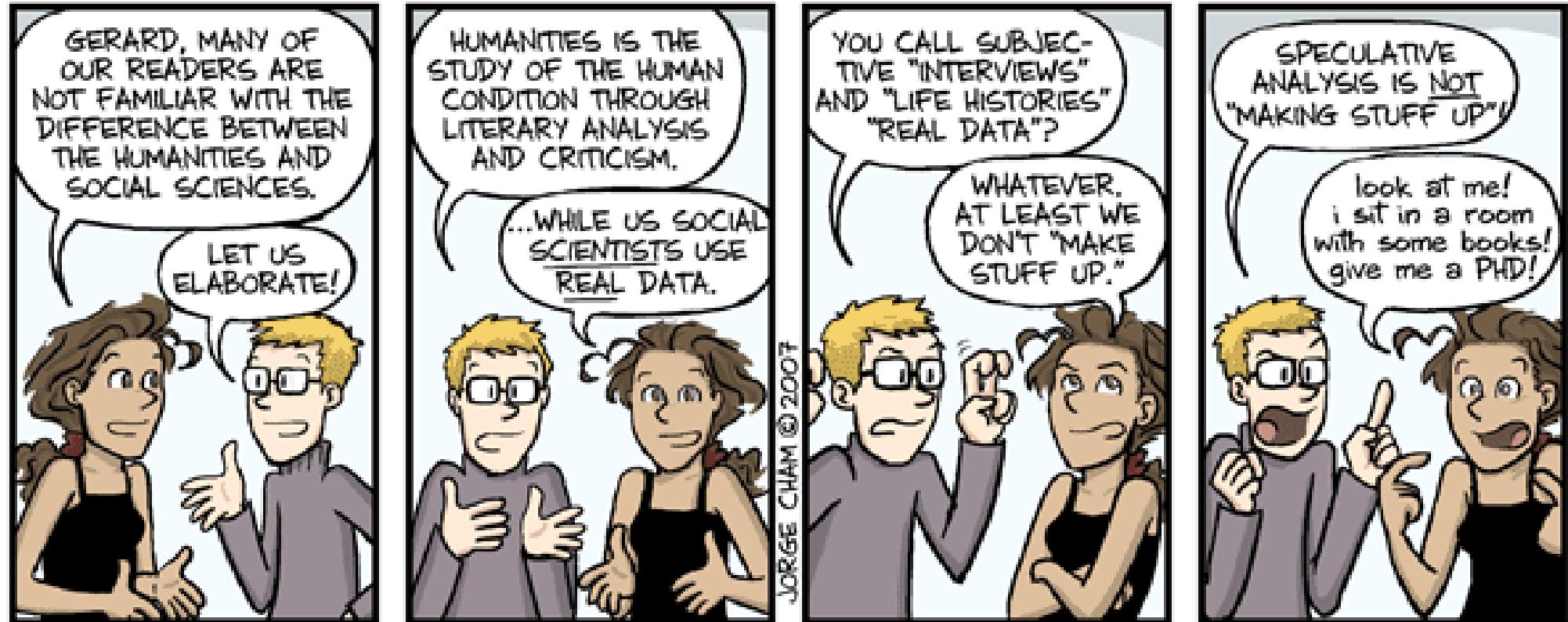
Anyone who controls this type of data is subject to provisions of data protection legislation of the country one lives in. The list below provides a summary of a couple of principles a researcher should consider. Personal data should be:

- Processed fairly and lawfully
- Adequate and relevant
- Obtained for specified explicit and lawful purposes
- Accurate and up-to-date where necessary
- Kept no longer than necessary
- Kept securely
- Processed in accordance with the rights for data subject by the Act
- Not transferred to a country outside the European Economic Area (Saunders, Lewis, & Thornhill, 2019)

Data Analysis

Qualitative

Is some data better than others?



WWW.PHDCOMICS.COM

Image Source: Jorge Cham. (2020, June 16)

Qualitative data is associated with an interpretive philosophy; dealing with subjective and socially constructed meanings of the participants.

Preparing for Analysis

Purely Qualitative Data, in the form of interviews or focus groups takes account of the verbal and non-verbal communication with the participants of the study; meaning the ‘actual words’ and the ‘tone/ body language’.

Transcription and Data Cleaning

The process of analysis consist of three concurrent processes:

- data reduction,
- data display, and
- drawing conclusions.

Examples

Qualitative Data Analysis

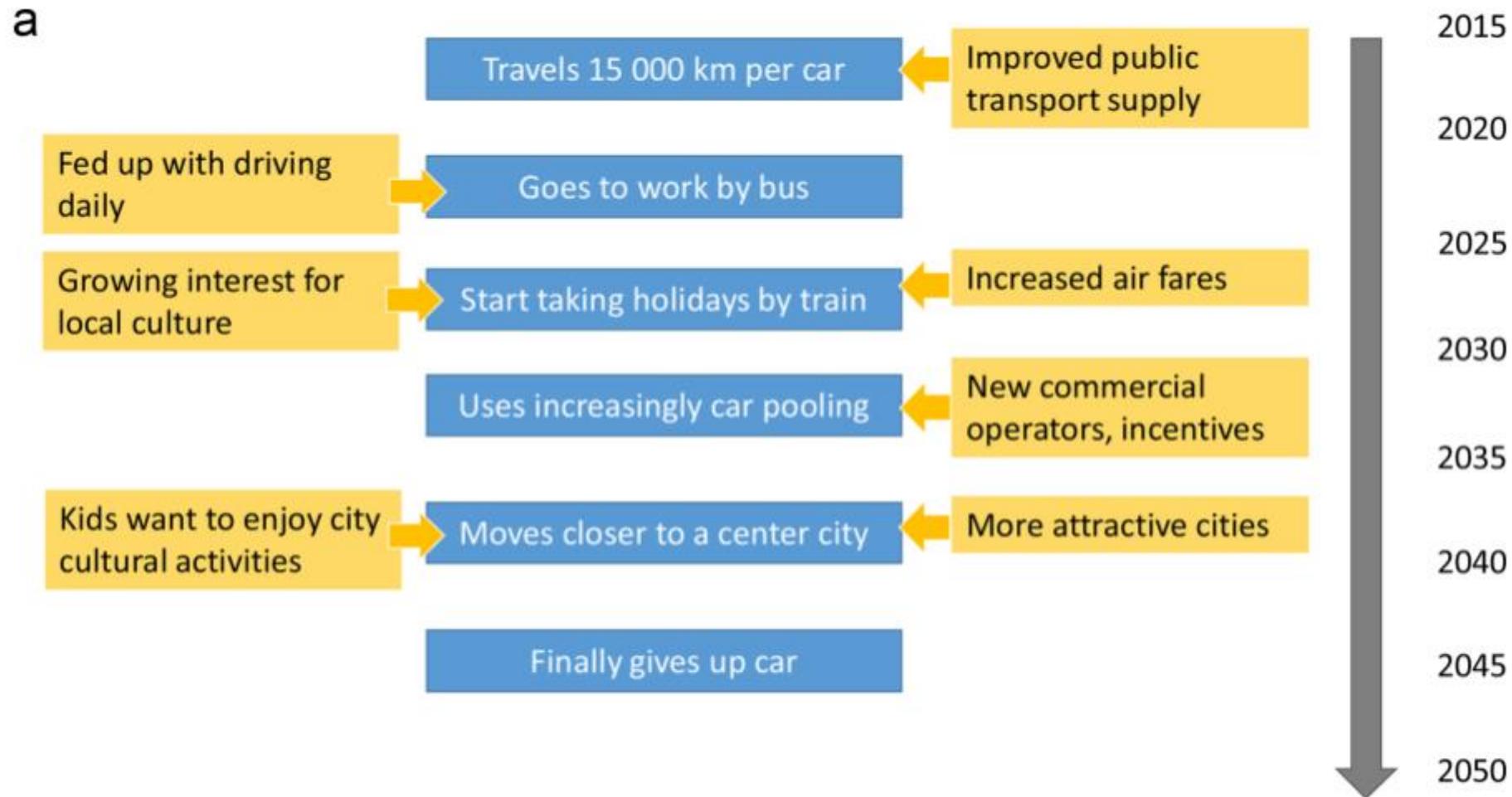


Fig. 3. The sequential and temporal nature of household carbon footprints. (a) Top panel: typical decision branching points for mobility related emissions. (b) Bottom

Steps

Qualitative Data Analysis

- **Categorising data:** creating categories into which the data will be divided
- **Unitising data:** the units of data are attached to the appropriate categories that you have devised
- **Examining relationships and creating categories:** analysing the rearranged data.
- **Developing testable propositions:** the existence of relationships need to be tested if one is able to conclude that there is a relationship, by developing testable propositions. This could be done by seeking alternative explanations and negative examples.
- **Drawing conclusions:** interpreting and analysing the data

Inductive Procedures: Grounded Theory Methods, Template Analysis, Analytic Induction, Narrative Analysis, Discourse Analysis

Deductive Procedures: Pattern Matching, Explanation Building (Saunders, Lewis, & Thornhill, 2019)

Tools

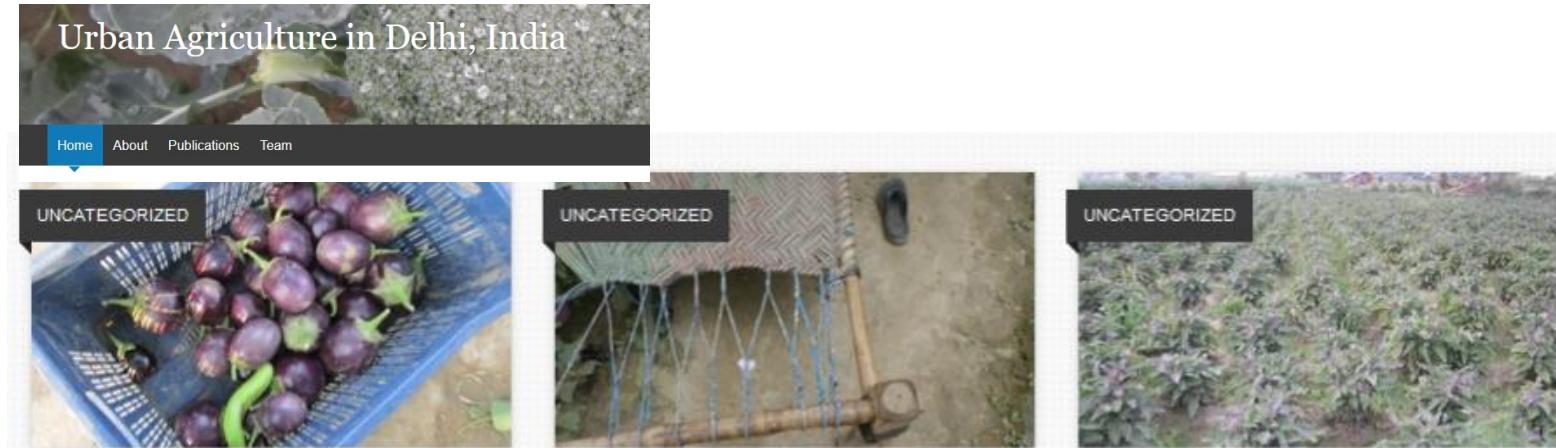
Qualitative Data Analysis

Summaries

- Interim-Made during the analysis, outline of findings
- Transcript-rephrasing long statements

Self- Memos/ Research Notebook/Blogs

- Recording Ideas
- Reflection on Experiences
- Application of Research



Coping with Development Pressure

Excerpt from an interview with a Delhi journalist from June 2014: Journalist: Many of these farmers live in the perpetual fear of being displaced because of floods and the ongoing development projects such as extension of a new elevated road and the construction of new metro line cutting right through their agricultural fields. How do you...

In the face of global food security

I am often asked about what I do—what I research. And my response is different each time. This is partly to tailor the subject so that it is relevant for the audience. But, the larger reason that my response varies is because of the complexity of what I do. I find it difficult to pare...

Communities Un-bounded

The focus of my dissertation research is to study and understand one “community” of farmers living/working on the Yamuna River floodplain in the urban center of Delhi facing land use changes due to urban development pressures. During the pilot study, we discovered that there are thousands of families involved in agriculture along the Yamuna River floodplain,...

Example

Qualitative Data Analysis

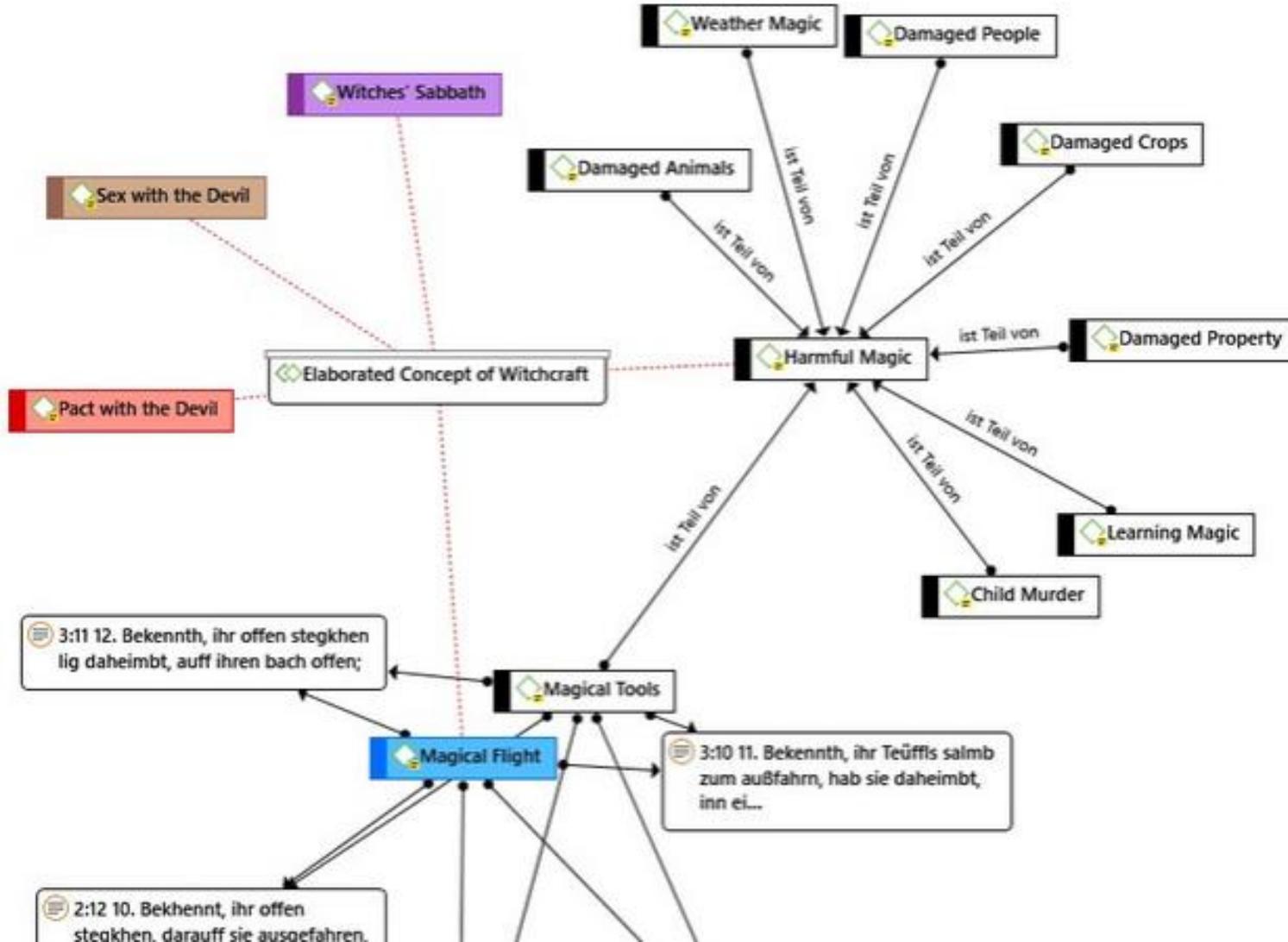
Softwares

- MaxQDA

(Analysing the ‘actual words’, categorising and recognising relationships)

- SPSS

(Developed Initially for
Analysing Statistics Relevant to
Social Sciences)



Data Analysis

Quantitative

Steps & Approaches

- **clean/prepare** your data
- take data apart to check individual responses
 - **outliers**
- represent data in tables/figures - **visualize**
- **explain conclusions** from the data responding to the RQ/Hypothesis
 - > might require qualitative study

Quant. Data Analysis

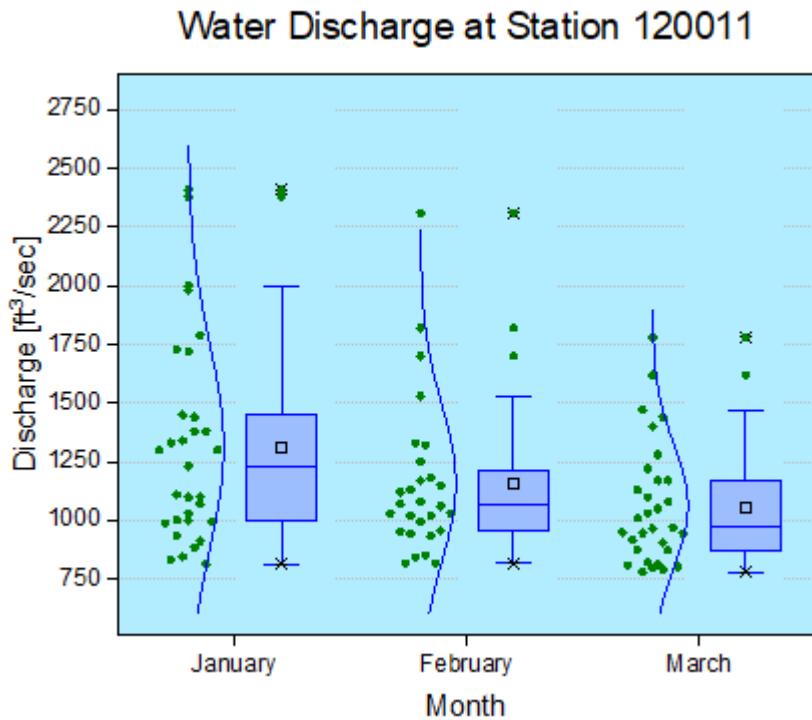


- Statistical
- Description of trends
- comparisons/predictions > modelling & scenario analysis
- LCA, MFA
- ...

- is **standardized** and fixed
- is **objective** and unbiased
- means to compare your data **against your theoretical framework & hypothesis**
- (deductive) or derive own theories (inductive) - or both
- drawn conclusions **must not be logical leaps** derived from results

Visual Evaluation

- Box Plots



Quantitative Data Analysis

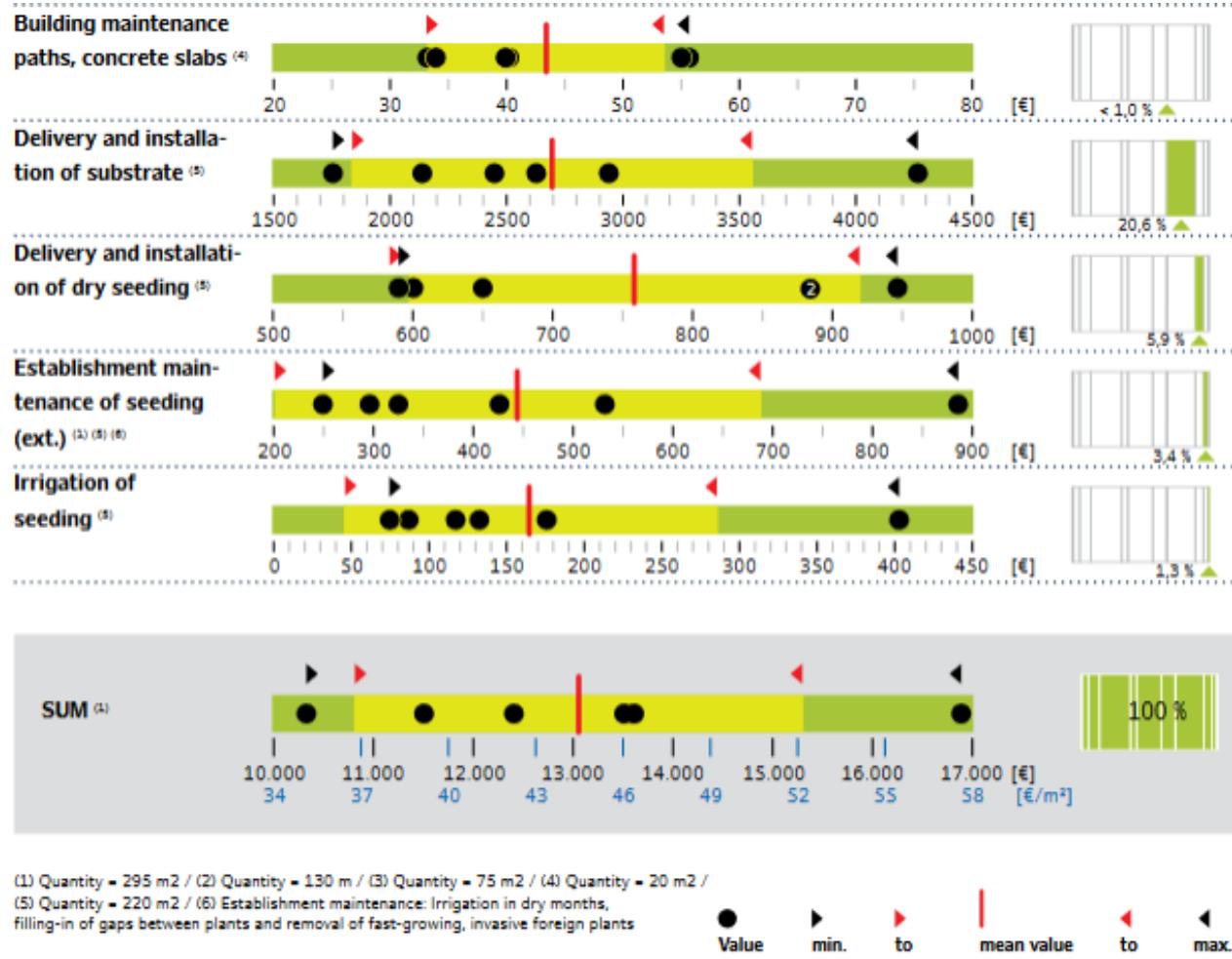


Fig. 2 – Price comparison after evaluation of offers for an extensive green roof (roof area 300 m²) in 2016

Tools

Quantitative Data Analysis

```
> summary(model1)

Call:
lm(formula = y ~ x1)

Residuals:
    Min      1Q  Median      3Q     Max 
-1.3248 -0.3260  0.2088  0.3135  1.1239 

Coefficients:
            Estimate Std. Error t value Pr(>|t|)    
(Intercept) 240.25859   3.61214  66.51 <2e-16 ***
x1          -2.14981   0.04106 -52.36 <2e-16 ***  
---
signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

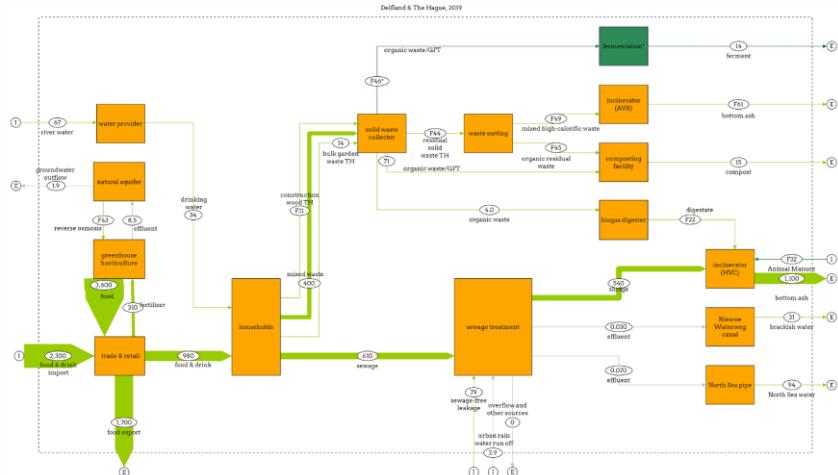
Residual standard error: 0.6719 on 14 degrees of freedom
Multiple R-squared:  0.9949, Adjusted R-squared:  0.9946 
F-statistic: 2741 on 1 and 14 DF,  p-value: < 2.2e-16

>
> # p-value: 0.0000000000000002 = very high significance
> # r-value: 0.995 = nearly perfect linear relation
> # beta-value x1: -2.15 = steady negative slope
```



- R (Studio)**

- Vensim (dynamic) & STAN (static)**



NGO*/NPO**	1
Academic Institute	2
Private Organisation	3
Consultant/ Freelancer	4
Absolutely Vital	4
Very Important	3
Slightly Important	2
Not Important	1

Table 11 – (Left) Showing the Assigned Values on the Independent Variable for the purpose of carrying out the One-Way ANOVA. (Right) Showing the Assigned Value on the Independent Variable for the purpose of carrying out the One-Way ANOVA | Source: Author's Own

- MaxQDA (for mixed methods, Quantitative Content Analysis)**

Each criterion was tested separately against the Independent variable, reporting the F values (within the degrees of freedom) and the p-value, indicated as Sig. in the fig below. In the case of the analysis done for C1, $F(3,14)=0.44$, $p=0.727$, meaning that no significant differences were found, ruling out also any biases, in the scoring of C1.

Score_C1	ANOVA				
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.844	3	.281	.441	.727
Within Groups	8.933	14	.638		
Total	9.778	17			

Figure 5.6 – Snapshot of the ANOVA Analysis Carried out on the IBM SPSS Software | Source: IBM SPSS

The same test was carried out for all 17 criteria, leading to the cumulative reading of p-values recorded in the Appendix.

Visual Evaluation

Quantitative Data Analysis

- **Visualization Correlations**

Child Mortality in relation to Access to Improved Source of Drinking Water (2000–2015)

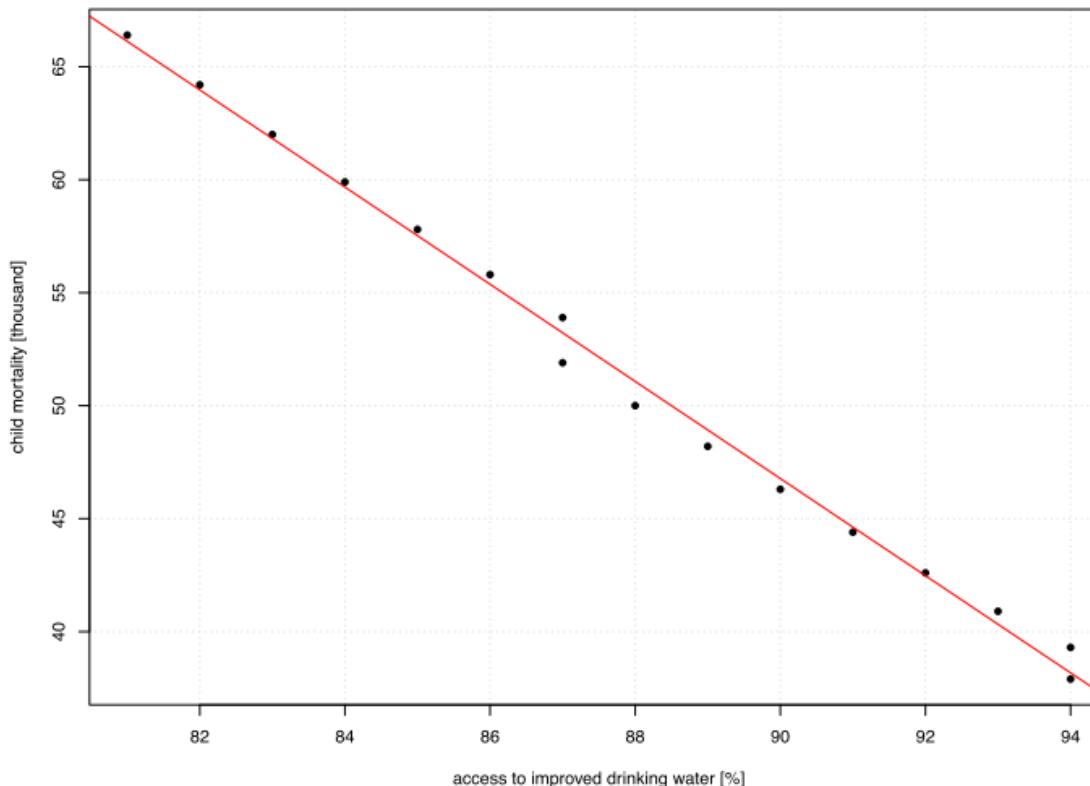


fig. 9: plot of model 1
(author's own creation, 2017)

Child Mortality in relation to
GDP (2000–2015)

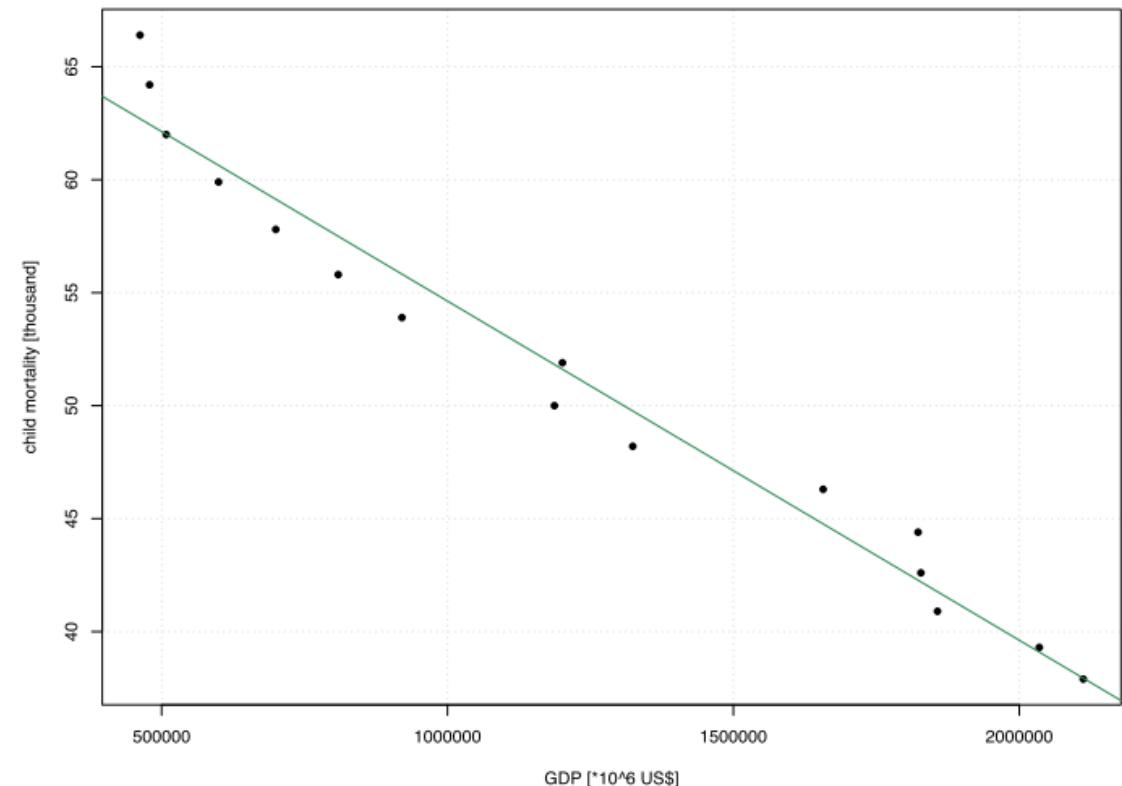


fig. 10: plot of model 2
(author's own creation, 2017)

Quality Control

Quantitative Data Analysis

- Contradictory or vague findings
- **correlation is NOT causation**
- **Autocorrelation** between variables
- event/processes interfering with an experiment
- influences “not controlled for”
- representativeness of a sample > **statistical significance**
- **researcher bias:** conceal identity of researcher and experimental/placebo groups for each other



- uncertainty testing
- sensitivity analysis
- control groups
- sampling procedures & random selection
- double blind studies
- group-to-group validation
- ...

Reading List

- **Leavy, P. (2014).** *The Oxford handbook of qualitative research*. Oxford library of psychology. Oxford University Press.
(Access through UniFreiburg Account)
- **Flick, U. (2014).** *The SAGE handbook of qualitative data analysis*. SAGE.
<https://doi.org/10.4135/9781446282243>
(Access through UniFreiburg Account)
- **Flick, U. (Ed.). (2018).** *The SAGE handbook of qualitative data collection*. SAGE reference.
(Access through UniFreiburg Account)
- **Sage Publishing. (2020).** *Methods map* [interactive map of research methods]. Retrieved from <https://methods.sagepub.com/methods-map>
(check out their reading lists in research tools)
- **Kumar, R. (2011).** *Research methodology: A step by step guide for beginners* (3rd Ed). London, GB: Sage Publications.
(good guide through all phases of social research)
- **Khan Academy**
(good for tutorials of statistics and foundations of quantitative methods)

Reference List

- Saunders, Lewis, & Thornhill. (2019). Research methods for business students. Chapter 4, p. 130 ff.
- Szerovay, K. (2018). Introduction to quantitative research [sketch]. Retrieved from https://www.google.com/url?sa=i&url=https%3A%2F%2Fuxknowledgebase.com%2Fquantitative-research-part-1-e405a57e1179&psig=AOvVaw09eF2-WXx-BEZpy4LS8381&ust=1592146059209000&source=images&cd=vfe&ved=2ahUKEwiBmcuzhP_pAhXIC-wKHXz6AXIQR4kDegUIARDrAQ
- Creswell, J. (2006). Qualitative inquiry and research design: Choosing among five approaches (2nd Ed.). London, GB: Sage Publications.
- Kumar, R. (2011). [Research methodology: A step by step guide for beginners](#) (3rd Ed). London, GB: Sage Publications.
- Mylan, J. (2018). Sustainable Consumption in Everyday Life: A Qualitative Study of UK Consumer Experiences of Meat Reduction. *Sustainability*, 10(7), 2307. <https://doi.org/10.3390/su10072307>
- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and Practice*, 2(1). <https://doi.org/10.1186/s42466-020-00059-z>
- Cascardo Dias Viera, M. (2019). Enlightening the Paula Ramos Complex: A study of the social, economic and legal aspects of designing a community energy project in an informal settlement in Rio de Janeiro (master thesis). Hafencity University, Hamburg, DE.
- Dubois, et al. (2019). It starts at home? Climate policies targeting household consumption and behavioral decisions are key to low-carbon futures. *Energy Research & Social Science*, 52, 144–158. <https://doi.org/10.1016/j.erss.2019.02.001>
- Ranade, A. (2019, Oct. 15). Experiments in poverty alleviation. Mumbai Mirror. Retrieved from <https://mumbaimirror.indiatimes.com/opinion/columnists/by-invitation/experiments-in-poverty-alleviation/articleshow/71590014.cms>
- Ravallion, M. (2012). Fighting poverty one experiment at a time: A review of Abhijit Banerjee and Esther Duflo's "Poor Economics: A radical rethinking of the way to fight global poverty". *Journal of Economic Literature*, 50(1), 103-114. Retrieved from
- Misra, S. N. Kumar, G. S. (2019). Nobel prize for poor economics. *KIIT Journal of Management*, 15 (1,2), 1-8. <http://dx.doi.org/10.23862/kiit-parikalpana/2019/v15/i1-2/190169>
- Stray, V., Sjoberg, D. I. K., & Dyba, T. (2016). The daily stand-up meeting: A grounded theory study. *Journal of Systems and Software*, 114, 101-124.
- Ramos-Salas, X., Forhan, M., Caulfield, T., ... Raine, K. (2019). Addressing internalized weight bias and changing damaged social identities for people living with obesity. *Frontiers in Psychology*, 10 (1409). DOI: [0.3389/fpsyg.2019.01409](https://doi.org/10.3389/fpsyg.2019.01409)
- Taylor, R. (2019). Narrative inquiry: Articles on slavery. SSRN.
- Kane H, Ragsdell G and Oppenheim C.(2006). Knowledge Management Methodologies.The Electronic Journal of Knowledge Management, 4 (2), 141-152. https://www.researchgate.net/publication/228933125_Knowledge_management_methodologies.
- Jonathan Cook. (2015). Fast-Paced Ethnography. <http://jonathancook.us/?p=370>
- Lê G, Huss R, Mshelia C, Mirzoev T (2015). How to use Action Research to Strengthen District Health Management: A Handbook. PERFORM Consortium. Leeds. https://www.researchgate.net/publication/283301324_How_to_use_Action_Research_to_Strengthen_District_Health_Management_A_Handbook
- WIN. (2018). Case Studies: the Integrity Management for Small Water Supply Systems. Water Integrity Network. <https://www.waterintegritynetwork.net/2018/10/08/the-integrity-management-toolbox-for-small-water-supply-systems/>
- Mohr, J. W., Ventresca, M. (2002). Archival Research Methods. In Baum, J. A. C. (Eds.), Blackwell companion to organizations. Blackwell.
- Jorge Cham. (2020, June 16). PHD Comics: Humanities vs. Social Sciences. <http://phdcomics.com/comics/archive.php?comicid=908>
- Blogs made during a field research. source: Jessica Cook. (2019). Urban Agriculture in Delhi, India. <https://urbanagdelhi.wordpress.com/>
- Mueller, A. (2019). MAXQDA or ATLAS.ti? How software shapes research. <https://methodos.hypotheses.org/1575>

Disclaimer

This presentation is meant to give you a general outline for the most common processes that are out there and get you familiar with them.

Depending on the field that you plan to do your research in, this could look very different!