Inside Mixed Methods: How to be a critical user

Centre for Social Science Research and Policy

January 12, 2022

1:00 – 4:00pm

Gregory Mason

Department of Economics

University of Manitoba

www.gregorymason.ca

gregory.mason@umanitoba.ca

University of Manitoba

TRADITIONAL TERRITORIES ACKNOWLEDGEMENT

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene peoples, and on the homeland of the Métis Nation.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliation and collaboration.

umanitoba.ca

University of Manitoba

Plan for the webinar

- Part A: Mixed methods are not smoothies
- Part B: Review of research frameworks and lines of evidence
- Part C: Mixed modes: A Bayesian view

Cases Studies

1. Evaluation of Federal drought assistance (1991)
2. Evaluation of the Farm Improvement Marketing Loan Act (2002)
3. Evaluation of Big Brothers (1988) & Evaluation of the Closure of Portage Air Training Base (1993)
4. Evaluation of the National Child Benefit (2005)

Part A: Mixed Methods are Not Smoothies

Key propositions

- Mixed methods are not smoothies
- Triangulation is a poor metaphor
- Research (***Re***-search) always requires the three "R's"
  - Recognize
  - Relearn
  - Repeat
- ***All*** social research methods comprise mixed methods
- Insight into social issues requires three dimensions
  - Capacity to recognize and resolve anomalies
  - Evolutionary learning based on revising and updating provisional understanding (Bayesian perspective)
  - Methodological processes to create checks and balances to minimize bias

Rationale for triangulation

Many use the analogy from land surveying to justify triangulation evaluation

"a single landmark can only provide the information that they are situated somewhere along a line in a particular direction from the landmark. With two landmarks, however, their exact position can be pin-pointed by taking bearings on both landmarks; they are at the point where the two lines cross.

In social research, if one relies on a single piece of data there is the danger that undetected error in the data-production process may render the analysis incorrect… diverse kinds of data *(that)* lead to the same conclusion, one can be a little more confident in that conclusion… *(because)* different kinds of data have different types of error built into them" (Hammersley and Atkinson,1983: 198).

But they are wrong

Mixed Methods are not smoothies

Interviews

Survey

Admin Data

Focus Groups

Triangulation - Origins

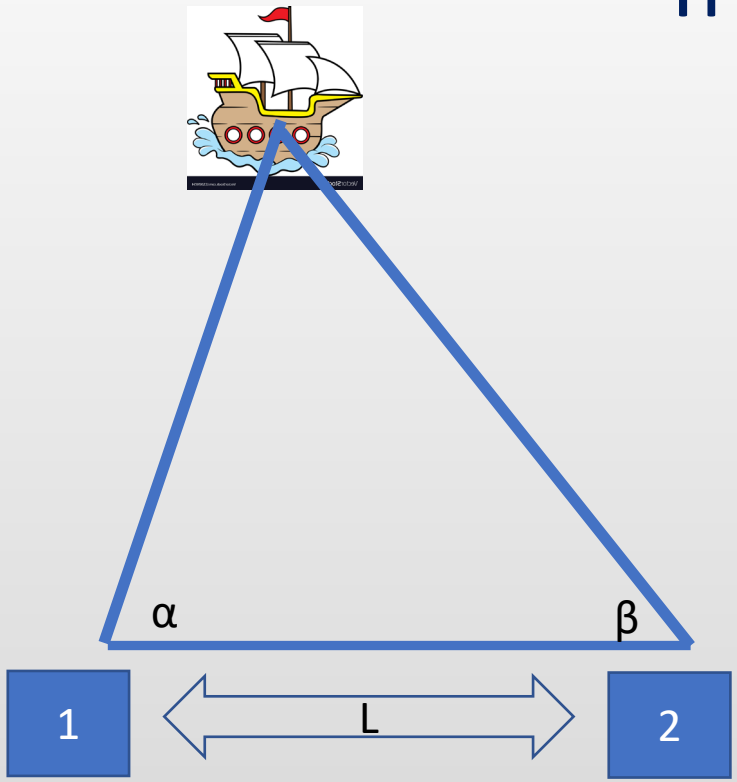
- Social scientists in the sixties became concerned that single methods (interviews or questionnaires or surveys) were inherently biased.
- Corroborative evidence was advocated to increase validity.

"When a hypothesis can survive the confrontation of a series of complementary methods of testing, it contains a degree of validity unattainable by one tested within the more constricted framework of a single method" (Webb *et al* 1966: 174).

"No single method is always superior. Each has its own special strengths and weaknesses. It is time for sociologists to recognise this fact and to move on to a position that permits them to approach their problems with all relevant and appropriate methods, to the strategy of methodological triangulation." (Denzin, 1970b: 471).

University of Manitoba

Triangulation – one more time



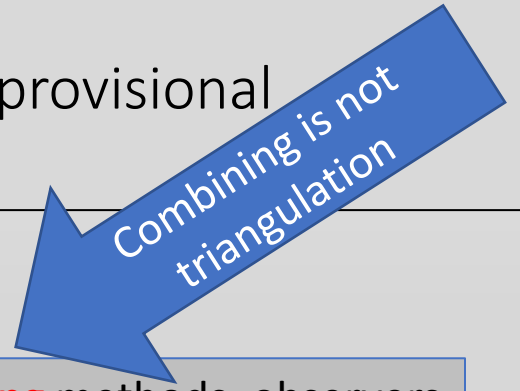
Two observers can “triangulate” the location of the boat (distance from the short) by measuring the angles α and β, using the distance L and the law of sines.

Someone with one watch always knows the time.
Someone with two watches is never sure.

The key to triangulation is that both observers must use the same theoretical framework (plane trigonometry)

Triangulate only within a data methodology applied to similar data:

- Alternative statistical models using the *same data*
- Contrast the views of *similar key informants* (within national managers, within local project leaders, within line social workers….)
- Across multiple *homogeneous* focus groups to understand multidimensionality of experience and perceptions within that type of participant.
- Use other data collection modes to conform/disconfirm provisional understanding



"the flaws of one method are often the strengths of another, and by **combining** methods, observers can achieve the best of each, while overcoming their unique deficiencies" (Denzin, 1970a: 308)."

University of Manitoba

Problems with triangulation in social science

- Does not necessarily increase validity – competing perspectives fail to converge or collectively converge on a mistaken idea
- May offer differing perspectives, but in social science this may not lead to less bias
- Mixing of quantitative and qualitative methods that draw from different theoretical frameworks usually results in the quantitative data dominating the research
- The analogy with surveying presents serious theoretical problems for mixing quantitative and qualitative methods.

University of Manitoba

Case study – Evaluation of Federal drought assistance (1991)

Case study – Evaluation of drought assistance (1991)

The Issue: The evaluation called for six producer (farmer) focus groups as one line of evidence to gauge support for special programs (money) to assist with losses triggered by drought.

Options:

- Use Regina and Saskatoon as bases and complete the groups in three centres clustered around these two cities.
- Split the province in two vertically and complete the six groups in two bands of three with two researchers moving north.

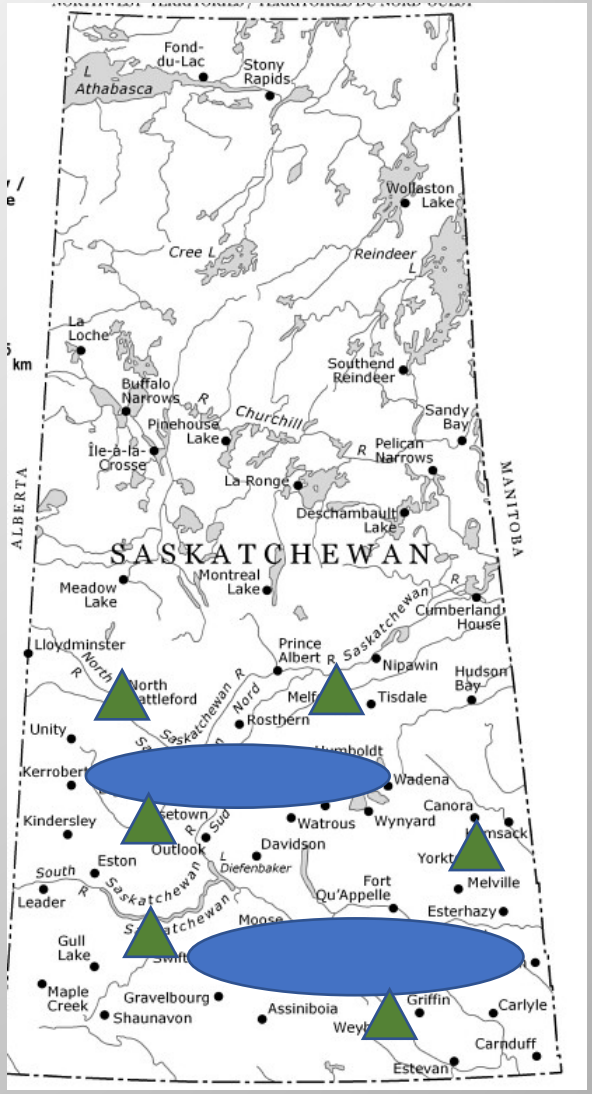
Rationale for second option

- Duh! I dunno!

Method: As we (two moderators) worked north, we debriefed by phone every evening to compare notes.

Interesting Finding: Producer attitudes became more optimistic, with less expressed need for government support, and a more "entrepreneurial" outlook **as we moved north**.

Why?



The resolution

- The finding that attitudes to government support changed so markedly as we moved north appeared to be an anomaly …
- … until I saw a soil map of Saskatchewan… by chance
- Curious, I phoned an ag economist at the U of M, who confirmed that indeed, the darker soil regions offered greater scope for diversification (not just wheat…) that led to higher incomes and more economic resiliency.
- The Palliser triangle is also known for frequent and intensive drought cycles.

University of Manitoba

Insights on mixed methods

From the case study

- Sometimes dumb luck creates anomalies (choosing the direction of the location)
- Sometimes serendipity (noticing the soil map) begins the process of resolution (adding a line of evidence)
- An expert interview (second line of evidence) offered the insight needed to understand the focus group findings.

Some principles start to emerge

- One never starts research with a blank slate

  I assumed that farmers would all be very supportive of government funding. It came as a surprise when, as I worked north, attitudes turned to "meh", then to faint disdain.
- Checking perceptions with the other researcher served to 1) identify the trend 2) alter the perception 3) become alert to a new hypothesis

  Danger! Becoming alert to a new hypothesis risks adjusting the research tool to look for the phenomenon, and unconsciously seeking it out by signalling to the participants.

Seek and you will find

University of Manitoba

Part B: Research frameworks align questions to lines of evidence

Research frameworks

A research framework specifies the main theme (issues, hypotheses, questions…) and aligns each line of evidence to each theme/issue/question.

Evaluation of the National Child Benefit (Stylized Framework)					
Lines of evidence→	Survey of clients	Interviews (managers)	Focus Groups (Clients)	Analysis of tax records	Expert Interviews
Theme/Issue ↓					
Work effort	X			X	X
Food Security	X	X	X		
Education/Training (parents)	X			X	
Impact on Family Life	X		X		
Administration		X			X

Lines of evidence

Survey of clients				
	Questions			
Work effort	Hours of work for heads	Search effort for work	Impediments to work	…
Food security	Food budget	Use of food bank	Times experienced hunger in last month	…
Education	Education history	Participation in training/education in last month	….	….
Impact on family life	Relationship among heads	Relationship among children	Thoughts of separation	….

Data

Quantitative

- Self report status (age, income, etc., fixed response scales…)
- Observations (counts of cars boarding a ferry, counts by type of car, counts by number of passengers, counts by weight…)
- Physical measures (weight, rainfall, CO2 in the atmosphere…)

Quantitative data are amenable to arithmetic (statistical manipulation)

- units of analysis (individual, firm, household, country…) are assumed to be statistically identical because they are…
- drawn from random samples or census surveys or admin data.

Qualitative

- Audio and video recording (still and animated)
- Text of any kind
  - Interviews
  - Diaries
  - Twitter

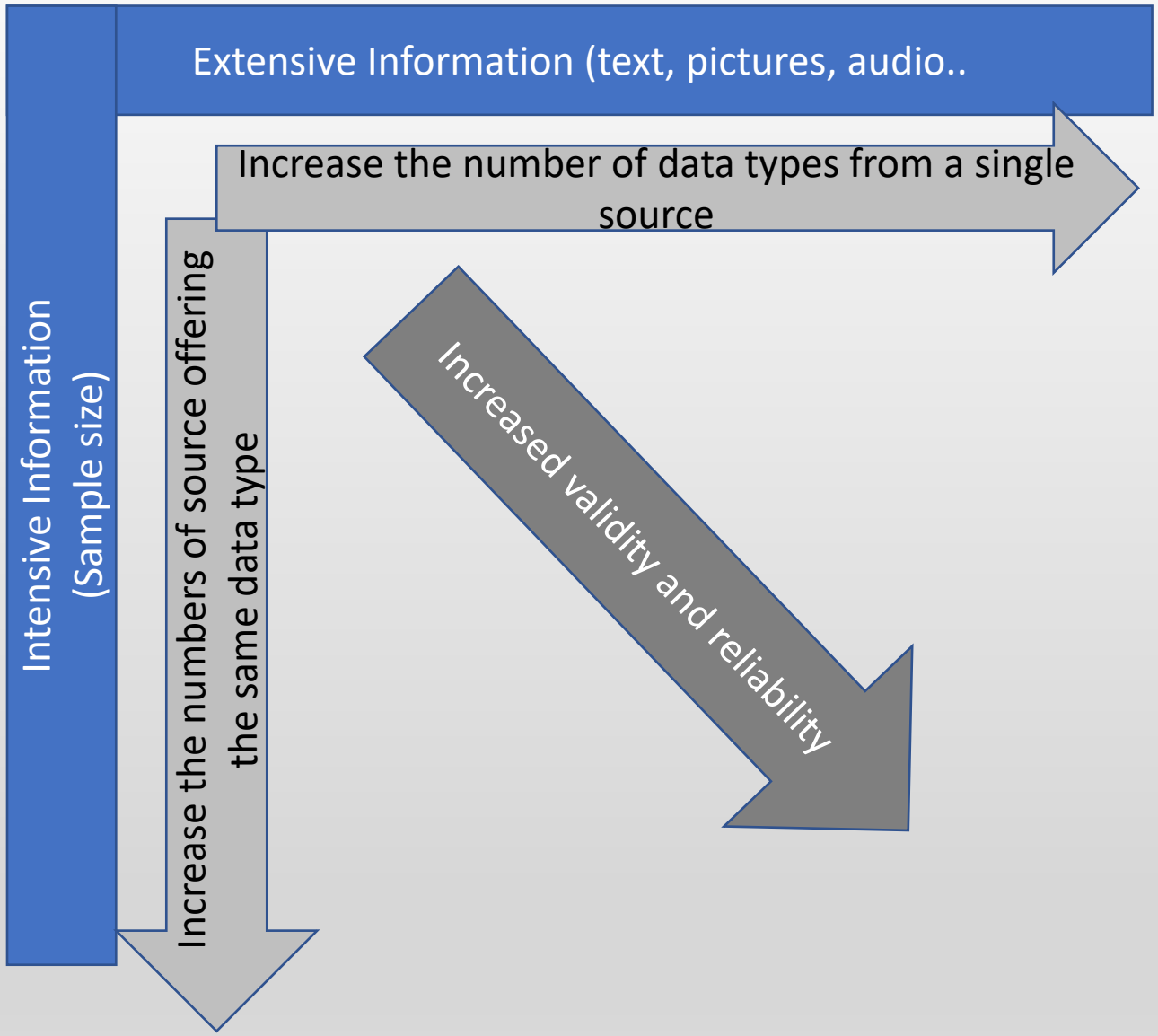
Qualitative data have little inherent structure and meaning comes from either:

- Coding to transform complex information into quantitative measures; or
- Expert interpretation.

Validity and reliability

- The commonly stated goal of mixed methods is to reduce bias and increase reliability
  - **Bias** is the difference between what is measured/observed and what is true
  - **Reliability** is generally defined as consistency in measurement

University of Manitoba



Quantitative Research (1)

- **Unit of analysis** aligned to the program target focus
  - Individuals
  - Families/households
  - Firms
  - Organizations
  - …
- **Unit of analysis** aligned to the program delivery focus
  - Managers
  - Organizations
  - Classes …

Key idea: Quantitative methods rely on "counting" "similar" units

"use of standardised measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories to which numbers are assigned" (Patton, 2001, p.14).

University of Manitoba

Quantitative research (2)

- Emphasize facts (expressed as variables) to test causal relations between variables.
- Variables are the tangible (measurable) realization
- Large sample survey and administrative data sets dominate
- Inferences from a sample to population mandate probability sampling
- With sufficient cases, information can be classified and grouped into standardized categories using statistical analysis

Reliability

a. The stability of a measurement over time and among units
b. Control of intervening factors and concepts of "stability" are important ideas

Validity

a. Often defined as "construct validity". The construct is the initial concept, notion, question, or hypothesis that determines which data is to be gathered and how it is to be gathered.
b. A key challenge is that researchers may alter the construct in the face of disconfirming data.

External validity – is the analysis extendable to another jurisdiction, unit, time, place…?

University of Manitoba

Qualitative Research (1)

- Data that cannot be counted and processed statistically
- Common data collection methods evaluation include
  - Interviews
  - Focus groups
  - Case studies
- Two core challenges
  - Selecting subjects (as opposed to sampling) for their information value.
  - Managing the tension between researcher as actor and researcher as observer

"the researcher is the instrument" (Patton, 2001, p. 14).

Reliability

a. Concept of trustworthiness is core for some researchers
b. Others maintain that reliability is a construct that pertains only the quantitative studies.

Validity

a. Not an absolute, but based on the theoretical framework and data collection/analysis process.
b. Many researchers stress discipline and rigour in the process as the guarantor of validity

Data Reduction

Quantitative

- Coding (pre-coding – post coding)
- Scales/indexes (Likert, magnitude)
- Factor/cluster analysis to refine constructs

Qualitative

- Coding (classification)
- Thematic development (detect story lines)
- Typology/metaphor development (analogies)

Both quantitative and qualitative data usually require us to engage in manipulation/processing prior to analysis

University of Manitoba

Quantitative research focuses on

- Measuring concepts (income inequality, cost-effectiveness, etc.)
- Testing possible causality
- Generalizing from a sample to population
- Replicating and aggregating using standardized methods based on….
- ….discrete and uniform units of analysis.

Credibility depends on transparency in data collection and statistical methods supported by replication

Qualitative research focuses on

- Explicating concepts and theories
- Supports insight and hypothesizing
- … to detect the subjects points of view
- “Thick” description of personal and social processes
- … supporting a narrative

Credibility depends on transparency in data collection and an evolving narrative that increases insight

University of Manitoba

Case Study 2: Exculpatory Evidence – Farm Improvement and Marketing Cooperative Farm Act (FIMCLA)(2002)

Mixed methods implicitly assumes that no line of evidence dominates

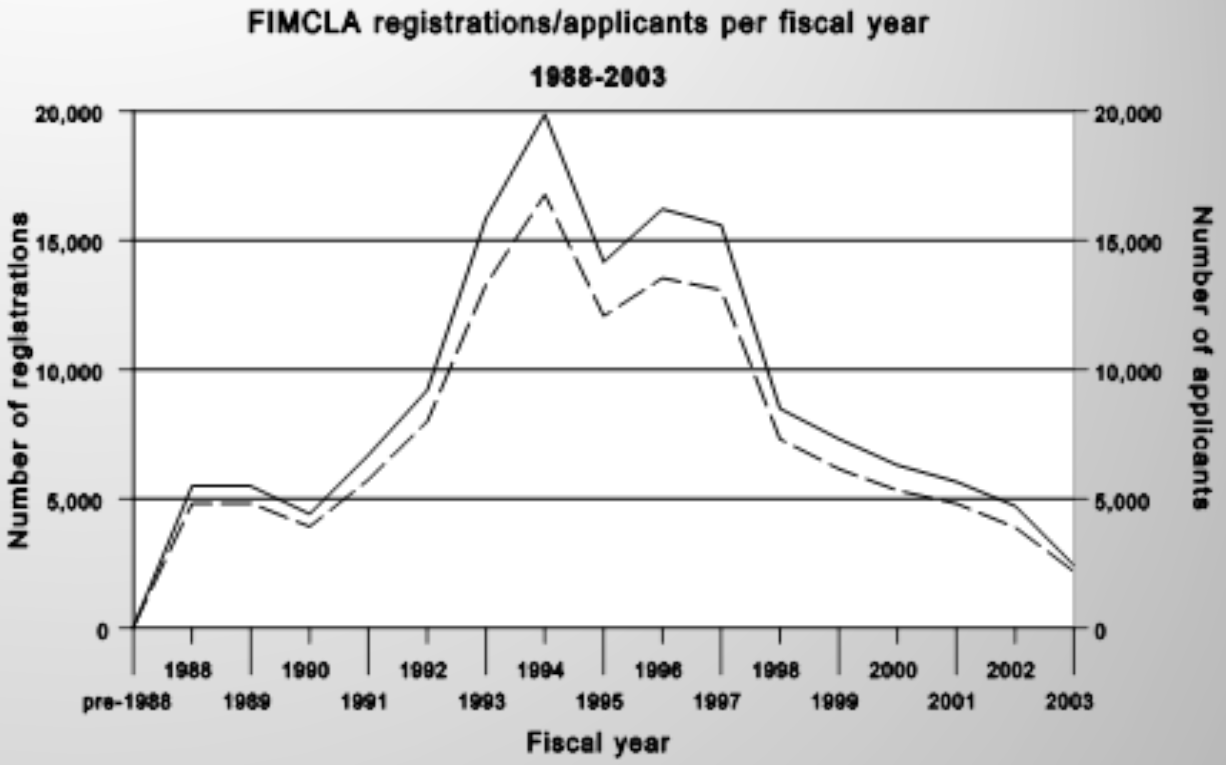
When one "fact" dominates, do we need any other information?

- FIMCLA-guarantees bank loans to farmers who are actively engaged in farming for the purpose of earning a profit in Canada
- Banks and credit unions advance the funds and receive payment from the federal government if the farmer defaults
- Bank loans are repayable with interest fixed at 1% above prime
- The rationale was framed during high interest era when business interest rates were 3 – 4% above prime and farmers had difficulty in securing loans.
- Some 30+ staff in Ottawa work on the program, with farmer organizations enrolling/qualifying applicants for which they receive fees

As a mixed methods evaluation we used:

- Recipient survey*
- Management interviews*
- Interviews with banks*
- Interviews with farm organizations*
- Analysis of administrative data

* Those with a potential financial interest in program continuance



This chart captures the essence of the program --- it had become a solution in search of a problem

Memorable Quote: Well, we may be delivering an unnecessary program, but we are doing it very efficiently (Anon Manager – AAFC)

Lines of evidence
(modes of data collection and analysis)

Most lines of evidence emerge from mixed mode research

Common lines of qualitative evidence used in evaluations	
Quantitative Data	Sample surveys (*clients, program administrators*…)
	Administrative/client data (*student records, driver licence data, crime statistics …)*
	Constructed measures (*consumer price index, unemployment rate, inequality measures*…)
Qualitative Data	Documents (*meeting minutes, laws/regulations, policy reports* …)
	Literature/expert interviews and reviews
	Key informant interviews (*managers, recipient group reps, …)*
	Focus groups (*clients, managers, experts-Delphi*…)
	Case studies

University of Manitoba

Typical large sample survey

Survey type	Information content
Interviewer mediated (telephone, in-person)	• Interview reads question - Respondent self-report – Fixed response – number/category (Question text must not vary) – Verbatim • Interviewer probes • Interviewer-respondent interaction creates a complex qualitative data field • Probes may increase reliability and validity [*Interviewer clarifies neutrally*] – Probes may decrease reliability and validity *[Interviewer leads the respondent]*
Self-completed (mail, web)	• Respondent self-report – Fixed response – number/category – Verbatim

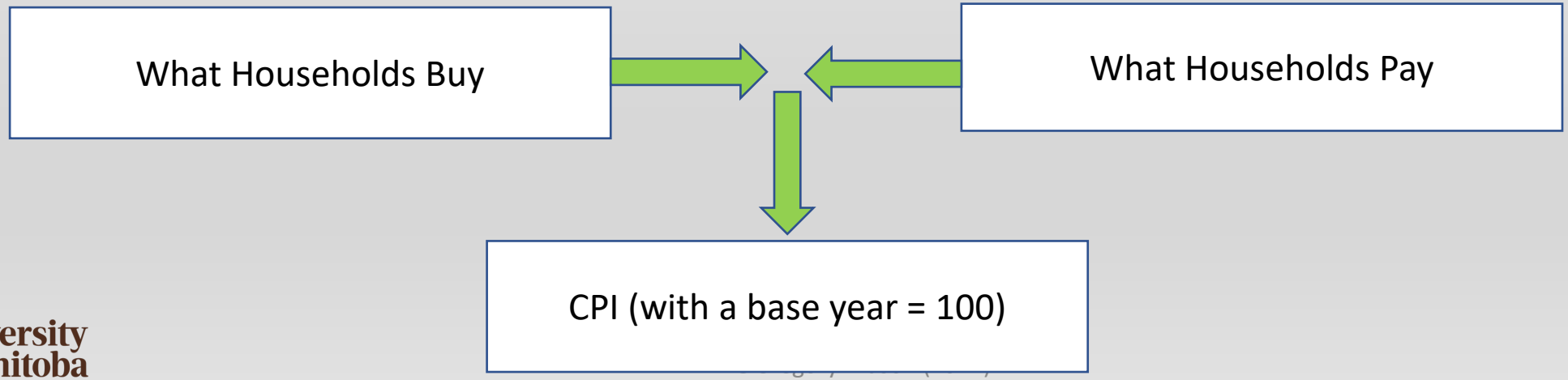
If one allows respondents a choice between completing a survey on-line, by mail, or on the phone (with interviewer) does it matter?

University of Manitoba

Many common measures are mixed mode

Consumer price index (CPI) – Construction

- **Purpose:** To track the cost of a representative basket of goods. While most use this as a proxy for inflation, most statistical agencies maintain is the a "cost of living index."
- **Method:** The CPI uses two modes:
  - Survey of household finances collects information of what households buy (product categories and quantities)
  - Price monitoring for categories and prices



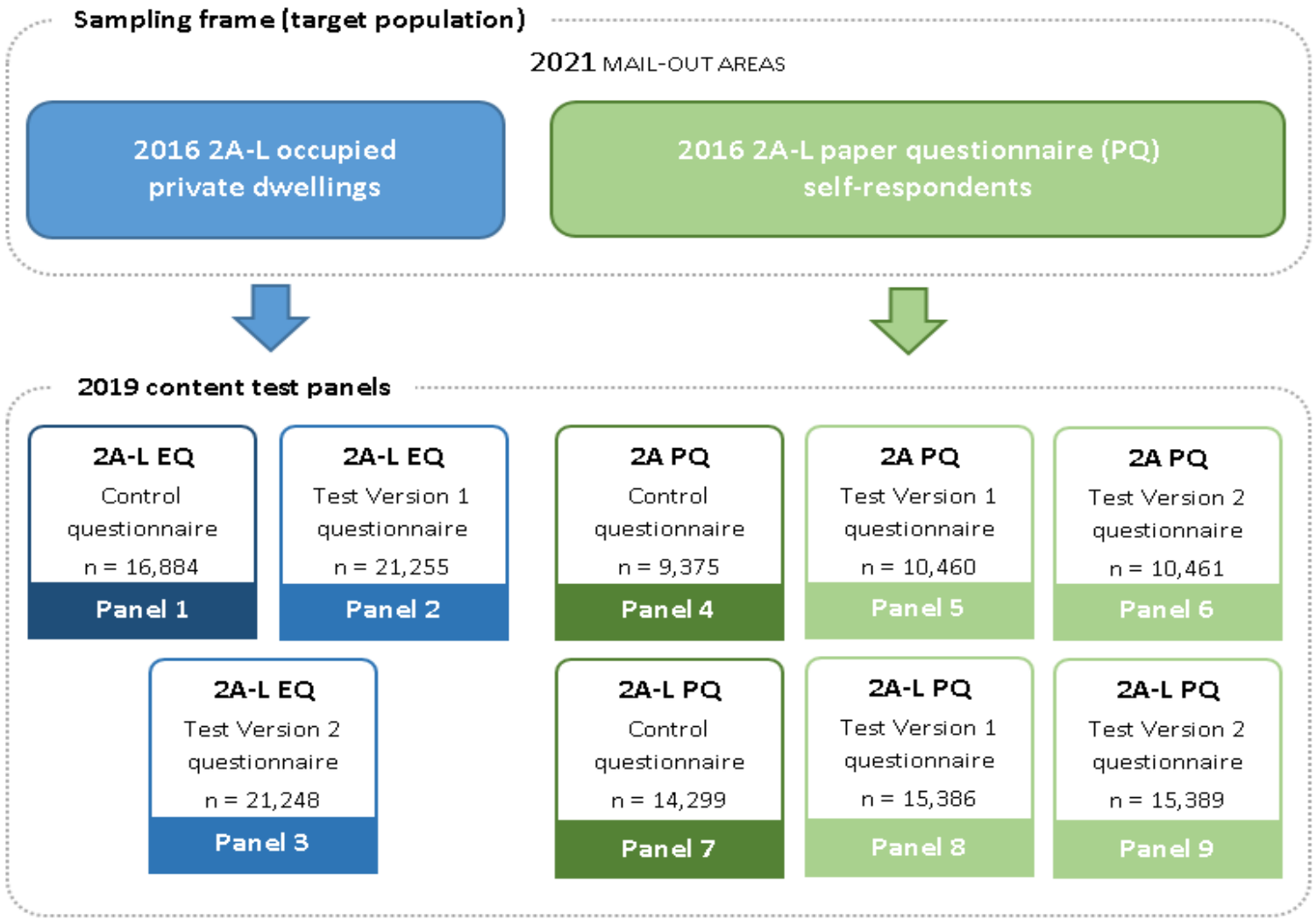
Census questionnaire development

Statistics Canada uses a prolonged process of questionnaire design involving

- Content development (Stakeholder consultations)
- Question development (Expert interviews, focus group testing for meaning)
- Questionnaire development (Pre-tests with follow-up)
  - Order
  - Format
- Survey logistics (Pretest with follow-up)

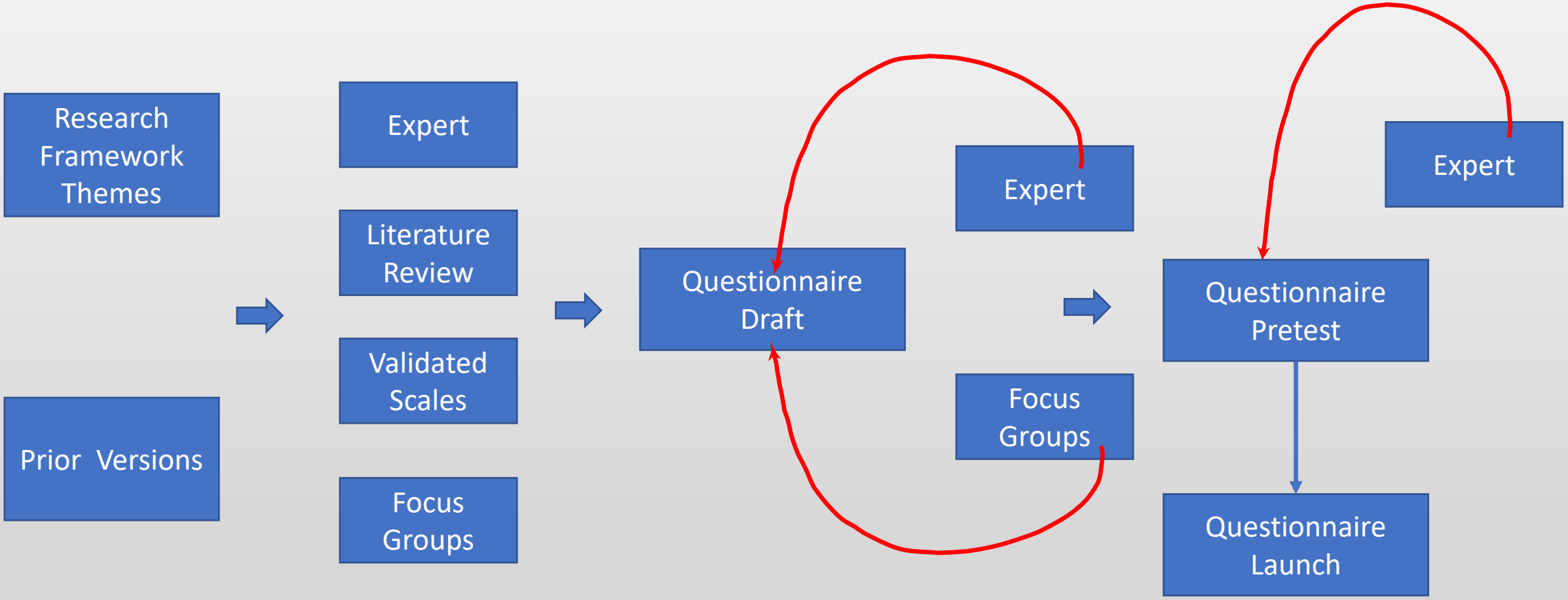
Figure 1

Design of the 2019 content test



https://www12.statcan.gc.ca/census-recensement/2021/ref/98-20-0001/982000012020020-eng.cfm

Survey questionnaire development is usually the outcome of a mixed mode development process



Typical administrative files – information potential	
Document type	Information content – potential data types
Management files (meeting minutes, HR records, etc.)	• Number and type of employee Minutes of meetings to – describe implementation, design of intervention – number and type implementation timing and processes
Financial records	• Payments (individual and aggregate) • Distribution and fairness • Payment timing and delay
Client services	• Client attributes • Services delivered • Participation in program • Sample frame to support survey and focus group enrollment

Checklist for administrative files	
Do	**Comment**
Take care with confidentiality.	Many administrative files contain personal identifiers (SIN, names, employee/student numbers… Although the organization releasing the information bears the primary responsibility, researchers are also accountable for managing privacy.
Set aside time to verify/correct administrative data.	Errors in administrative information are common and need reconciliation.
Work with IT to verify calculations based on admin data	See above
Prepare summary reports for internal verification.	Errors in administrative data (for example a description of program clients) that creep into a final report damage the credibility of the research and researcher.
Don't	**Comment**
Share raw administrative data outside the designated members	

Typical documents – information potential	
Document type	Information content – potential data types
Foundation documents (political statements, mission statements, strategic/business plans, policy backgrounders)	• Program/policy rationale and relevance • Program/policy origins • Authority (financial, governance) • Desired outcomes • Targets
Performance reports	• Outputs and outcomes • “Thick” descriptions (implementation, outputs, outcomes)
Audits and evaluations	• Program history, benchmark for costs, implementation outputs, outcomes
Program data (client files)	• Client/applicant selection rules (defines program scope)

Checklist for conducting document reviews	
Do	**Comment**
Remain open to relevant documents	Public documents include legislation, regulation, commissions of inquiry, audits (provincial/federal government audits and audits of public companies/NGOs can offer valuable context). Other documents include annual reports, minutes of board meetings, policy statements, strategic/business plans…
Review documents early in the research	Having good knowledge will support other lines of evidence
Use a reference manager to organize and summarize documents, especially when numerous and diverse.	Aside from generating bibliographies, reference managers such as Zotero support effective document summaries and also support collaboration.
Submit your document findings for review to an insider/client/key informant early in the study.	Early verification of you interpretation of organizational/program context will increase the effectiveness of subsequent stages of the research and increase the credibility of the project.
Don't	**Comment**
Delay the review of documents	
Hesitate to revise earlier interpretations in the light of new evidence	Some documents serve primarily to promote and the researcher must separate fact from fiction

Typical key informant – information potential

Interview Subject	Information content – potential data types
Expert	• Theory of change • Program antecedents • History of and projected need for intervention • Unique role for government vs other delivery options
Senior Manager	• **Program** origins and implementation • Strategic management (program) issues (e.g., FPT relationships) • Resource allocation (macro) • Expected/actual results (macro) • Alternatives (strategic/global)
Line Manager	• **Project(*s*)**origins and implementation • Local management (project(*s*) issues (e.g., community/organizational relationships) • Resource allocation at regional level (micro) • Expected/actual results at regional (micro) level • Alternatives (program delivery) • Insight on Admin Data
Clients	• **Project** service impact and benefits to end users • Services issues • Needs fulfilment

As population size increase, so does the feasibility of using a quantitative survey (telephone, mail, web…)

Checklist for conducting Key Informant – Stakeholder Interviews (In person or by Phone/Zoom)	
Do	**Comment**
Send letter/email introducing the research, where the respondent's name was obtaining, guarantee of confidentiality …	This is part of any ethical review, which will have a set of specifications. Do not deviate from REB requirements
Send a copy of the interview guide	A prepared respondent will supply more information.
Use phone/email/Doodle… to schedule and confirm the day before.	Try to remain in control of the schedule and be on time for the interview.
Record the interview (with permission)	Visually being seen recording a few notes is respectful, but it slows the note-taking. Phone interviews allow you to take notes, but excessive keyboard sounds are distracting.
Share your notes with the respondent and invite them to make changes	This is one of the more important credibility enhancing methods in qualitative research, especially if the respondent is a well-positioned stakeholder who might be a consumer of the research. Advanced Procedure: If you have new information or even a conjecture you would like to test…. Embed it in your notes (highlighted) by saying "I heard that X occurred, what has been you experience." You are allowing the respondent to update your understanding and them may conform or deny this alternate information.
Loop back to earlier interviewees when you learn new information to confirm/disconfirm.	Updating the later understanding with the earlier interviewees "flattens" the information

Checklist for conducting Key Informant – Stakeholder Interviews (In person or by phone/Zoom)	
Don't	**Comment**
Delay sending notes to the respondent.	Transcribing/editing interview notes is a pain, but delay communicates a lack of commitment and respondents will be less inclined to return the corrections, slowing the research process. Preparing notes immediately after the interviews, means you will work form memory … three weeks you will need to listen to the recording.
Quote with asking permission and anonymously.	Make sure the quote does not inadvertently identify the respondent and seek their approval as part of the notes verification process. Well phrased quotes can enhance the credibility of the data. Never quote without permission on the exact phrase.
Share the identify of other interviewees	
Share information provided by other interviewees that you identify.	This can be tricky (see above). You may wish to probe Jill by saying "I heard X, what it your opinion? You may get the response "Oh that is Jack on his hobby horse again… he is full of bunk! This may turn out well if you can get an explanation of the issue, but it can go sour, if Jack hears about it from Jill, or Jill thinks you are biased.
Interviews are social interactions. They are not a process where you use a can opener to cut a hole in the head of the respondent, invert, and shake the data out.	

Case Study 3:Evaluation of Big Brothers (1988) & Evaluation of the Closure of Portage Air Training Base (1993)

Big Brothers Evaluation (1988)

Big Brothers started in the US (1904) as a judge saw increasing numbers of boys from fatherless families come through the courts. It expanded in Canada after WW1 as a result of many families that had lost fathers in the conflict.

The goal was to match a boy with an adult male to serve as a role model (be a big brother). As an NGO it raised funds from public appeals and foundation service agencies (United Way). A key measure that anchored the fund raising was the number of "matches." At the time we were engaged, the number of matches was falling, creating tension between the staff and some board members (largely from the business community). The latter believed the staff were not expending sufficient effort to recruit big brothers, while the former believed that management was not promoting the organization.

After 20 interviews, the riddle of impasse between board and staff remained. One of the very last interviews was with a prominent business man, who all the staff (mostly social workers) maintained "did not have a clue." When probed about the decline in the number of matches, he said "no body understands that the number of matches is not relevant … it is their duration that counts. A boy does not benefit from successive matches of a three months, but rather a big brother who is there for three years."

Key lessons:

- Insight can come from everywhere.
- Reinterviewing staff gained acceptance of this perception, which
- Led to a reframing of the organization's performance measures

Evaluation of the Closure of Portage Air Training Base (1993)

In 1993 the Department of Defense closed the air training base at Postage la Prairie that had served to train military pilots since WWII; it served as a main training site for pilots based in England. The airbase, known as Southport, was an important employer, and its closure created alarm in the local community. This was an environmental scan design to support a strategic plan for economic recovery.

One key informant (a prominent business person) had a pretty negative view of the local business community had the following observation, comparing Portage la Prairie with Steinbach.

> *There are five car dealers in Portage la Prairie and when they look at Winnipeg then see nothing but the 50 car dealers. When the 10 car dealers in Steinbach look at Winnipeg, they see 100,000 buyers.*

This was a killer quote, so I asked to include it (anonymously). When I presented the report at a meeting in Portage, several of the local business owners were irate, demanding to know who said this and to have the quote struck from the record.

After a couple of awkward moments, the quoted businessman, who was in attendance, quietly stated that he had made that comment and that he stood by it

Key lessons

- Quoting evocative (and perceptive) ideas can create controversy
- Had the quoted individual not been in attendance or not spoken, the credibility of the report could have damaged.

Typical focus groups – information potential

Group type	Information content – potential role in the evaluation
Client	• Program implementation • Program impact • Field experiment *
Management	• Program implementation • Program impact

* Certain quantitative methods are ideally implemented in a small group setting. Conjoint analysis applied to program/policy design is an example that should be more widely used.

Focus groups are often seen as supplementary evidence designed to gather context about program implementation and impact, as well as ideas for program revision

The interaction among the participants means that the information whole is greater than the sum of the information parts.

University of Manitoba

Checklist for conducting focus groups		
Don’t	**Comment**	

Case studies – information potential	
Case study selection	Information content – potential role in the evaluation
Maximum variation	• Identify key patterns and variation (needs relatively large number of diverse instances. • (n>10)
Typical case	• Uses case that represent the norm
Extreme (successes)	• Best practices (feel good)
Extreme (failures)	• Corrective evaluation (punish the guilty)
Politically/intersectionality critical	• Highlight wanted positive or suppress unwanted negative attention • Oil the squeaky wheel
Convenience	• Low cost – low information

Checklist for conducting case studies		
Don’t	**Comment**	

Typology of Sampling Strategies in Qualitative Inquiry	
Type of Sampling	**Purpose**
Maximum variation	Documents diverse variations and identifies important common patterns
Homogeneous	Focuses, reduces, simplifies, and facilitates group interviewing
Critical case	Permits logical generalization and maximum application of information to other cases
Theory based	Find example of a theoretical construct and thereby elaborate on and examine it
Confirming and disconfirming cases	Elaborate on initial analysis, seek exceptions, looking for variation
Snowball or chain	Identifies cases of interest from people who know people who know what cases are information-rich
Extreme or deviant case	Learn from highly unusual manifestations of the phenomenon of interest
Typical case	Highlights what is normal or average
Intensity	Information-rich cases that manifest the phenomenon intensely but not extremely
Politically important	Attracts desired attention or avoids attracting undesired attention
Random purposeful	Adds credibility to sample when potential purposeful sample is too large
Stratified purposeful	Illustrates subgroups and facilitates comparisons
Criterion	All cases that meet some criterion; useful for quality assurance
Opportunistic	Follow new leads; taking advantage of the unexpected
Combination or mixed	Triangulation, flexibility; meets multiple interest6s and needs
Convenience	Saves time, money, and effort, but at the expense of information and credibility
Source: Miles & Huberman (1994, p.28). Reprinted with permission from Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: A sourcebook of new methods* (2nd ed). Thousand Oaks, CA: Sage.	
Source: Creswell, John W. (2007). *Qualitative Inquiry & Research Design: Choosing Among five Approaches* (2nd ed). Thousand Oaks, CA: Sage. Pp.127.	

Case Study 4: Evaluation of the National Child Benefit (2005)

The National Child Benefit was the precursor to the Canada Child Benefit, starting in 1997. It was a joint initiative of the Federal, Provincial (except Quebec) and Territorial governments and offer families with children under 18 an income tested monthly stipend that started at $6000 annually per child for those with no earnings, tapering to 0 for those with family incomes of $33,000. The goal was to reduce the depth and incidence of children in poverty without causing parents to reduce their work effort.

The evaluation comprised the following methods:

- Interviews (n=75) with FPT representatives
- Recipient Mail/Phone survey (n=5500) of NCB recipients with sample drawn from tax records using propensity score matching
- Analysis of taxation data (n=100,000+) conducted at Canada Revenue Agency
- Focus Groups (n=20) in every province, concentrating on urban centres and enrolled from the client survey, split between social assistance and non recipient of social assistance.

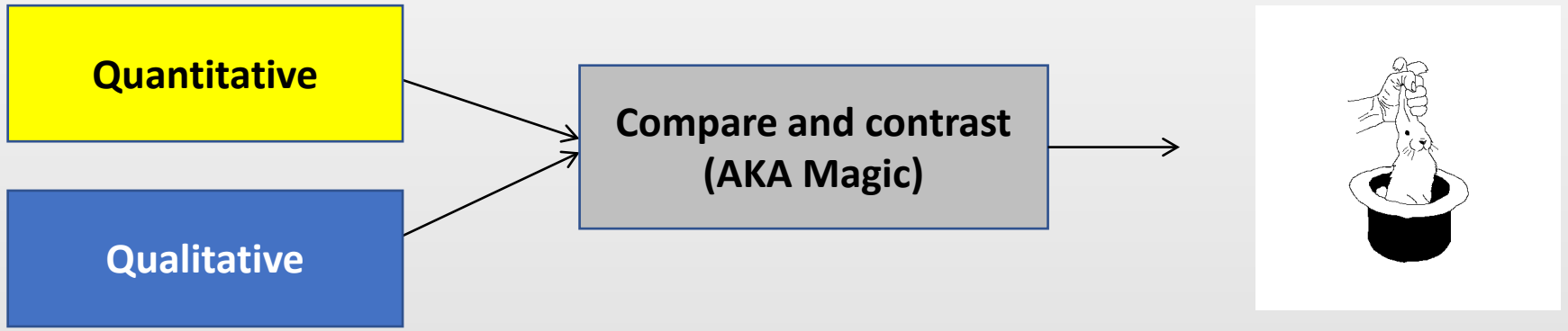
Key Finding:

- The client survey and analysis of taxation data revealed that on average, the NCB had actually and adverse impact on family incomes … completely opposite to the program intent.
- The Federal government rejected the report out of hand, and commissioned another study that showed poverty had been ameliorated.
- Re-analysis of focus group results revealed an important detail… many parents with younger children used the income supplement to reduce work hours to increase parenting time, especially if the child had a disability.
- Re-analysis of the client survey established that the NCB was actually a program to support parents and not a poverty reduction initiative.

Part C: Mixed modes as a Bayesian perspective

Four models:

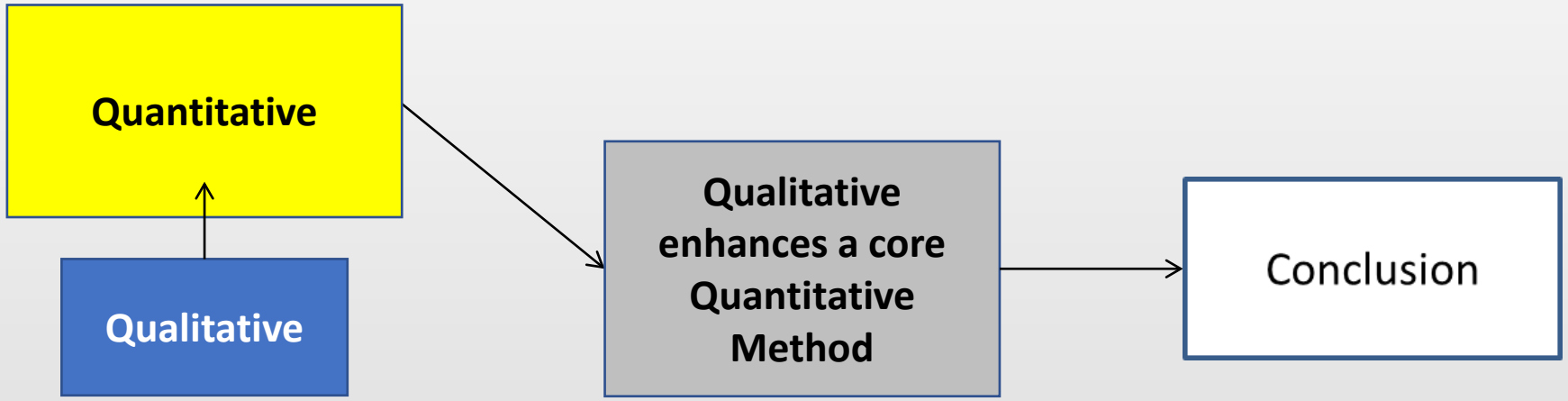
1. Triangulation



Pros
- The most popular concept
- Aligns Quant and Qual methods as complementary and equal
- Qualitative data are often transformed to Quantitative data (using coding)
- Intuitive approach – appears to balance all types of data
- Less costly and time consuming

Cons
- The process for arriving at conclusions is usually opaque.
- Procedure to combine different types of data must be explicit, but most often omitted from research write-ups.
- It can resemble magic

2. Embedded Design



Pro

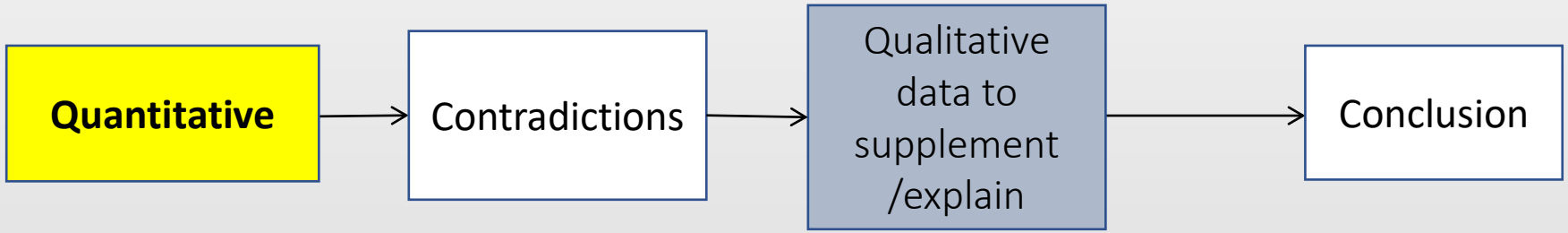
- Qualitative data support the development of quantitative measures
- Increases the theoretical foundation for the study.
- Quantitative data is the "star", which tends to be familiar to many social researchers.

Example: Interviews and focus groups support the design of a survey, which is the main line of evidence

Con

- Weak method when the Quant data are poor
- The role of Qual data as "support" to Quant methods needs explanation
- Poorly executed Qual data will bias Quant methods by supporting a poor survey instrument.

3. Explanatory Design



Pros

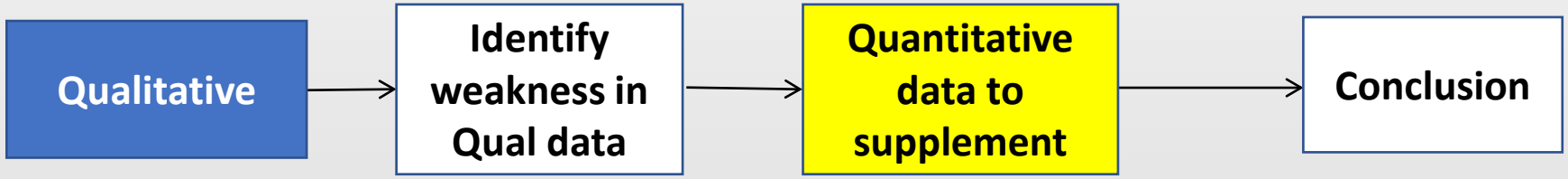
- Quant precedes Qual data collection
- Tends to emphasize Quant results
- Qual used to explain and add insight to Quant results
- Quant results can be used to design Qual research (e.g., selecting focus group participants and case studies from a client survey)

Example: Survey results product contradictions and puzzles. Interviews (experts, management, clients) and focus groups unravel the issues and support re-analysis of the data (and maybe re-surveys of a portion of the sample)

Cons

- Sequential phasing can lengthen the research
- Quant data collection will dominate Qual data collection
- But the Qual data may reveal weaknesses in Quant data that compromises the overall design, requiring repeated data collection.

4. Exploratory/confirmatory Design

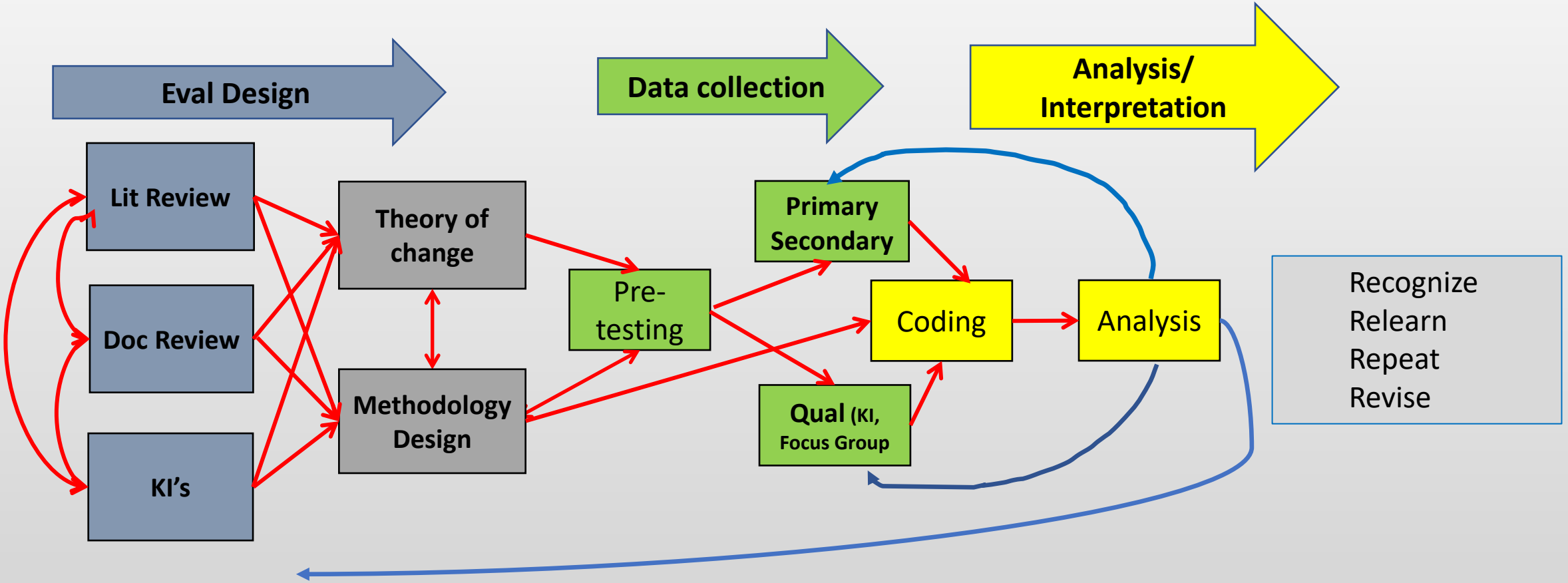


Pro
- Qual data used to explore a concept
- Quant data used to generalize or confirm the Qual information
- Tends to increase external validity of Qual finding

Example: Interviewees (managers) claim client acceptance of program. Survey of clients explores acceptance of program outputs to confirm/contradict interviewee claims

Con
- Can add time and cost
- Qualitative data interpretation may need to be revised in the light of Quantitative results

Integrating Qualitative/Quantitative Evidence



Back to the Beginning - Data integration and mixed modes

- Data integration starts with the research design
- Data integration
  - Occurs during each data collection step
  - Bridges transitions among data collection steps
  - Requires “looping back” for re-analysis to confirm/disconfirm provisional findings
- Data integration never starts after data collection has finished; it starts at the beginning and continues to the end of the research (or whenever the grant runs out).

Select Bibliography

Allwood, Carl Martin (2012). The distinction between qualitative and quantitative research methods is problematic. *Quality and Quantity, 2012(46),* 1417-1429, doi 10.1007/s11135-011-09544-8

Blaikie, Norman W.H. (1991). A critique of the use of triangulation in social research. *Quality and Quantity, 1991 (25),* 115-136.

Blaikie, Norman (2010). *Designing Social Research: The Logic of Anticipation.* Malden, MA: Polity Press.

Bryman, Alan (2006). Integrating quantitative and qualitative research: how is it done? *Qualitative Research, 6(1),* 97-113.

Creswell, John W. (2007). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches,* Thousand Oaks, CA: SAGE Publications, Inc.

Golafshani, Nahid (2003). Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report, 8(4),* 597-607.

Mason, Gregory, 1996 "Recent advances in questionnaire design for program evaluation. *Canadian Journal of Program Evaluation,* Vol 11, No. 1, pp 73-94.Download

Mason, Gregory. 2021 Methodology Notes (various technical notes on social research methods) https://gregorymason.ca/publications/methodology-notes/

Miles, Matthew B.; Huberman, A. Michael; Saldaña (2014). *Qualitative Data Analysis: A Methods Sourcebook.* Thousand Oaks, CA: SAGE Publications, Inc.

O'Cathain, Alicia; Murphy, Elizabeth; and Nicholl, Jon (2010). Three techniques for integrating data in mixed methods studies. *BMJ 2010(341),* 1147. Doi: 10.1136/bmj.c4587

Patton, Michael,.(2014) *Qualitative Research & Evaluation Methods*, Thousand Oaks, Sage

Payne, Stanley (2014) *The art of asking questions*, Princeton, Princeton University Press