



Data Collection tools



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Objectives of the session



- By the end of the session the students should be able to appreciate and enlist;
 - Data Collection Strategies
 - Characteristics of Good Measures of data collection
 - Quantitative and Qualitative Data
 - Tools for Collecting Data

Data Collection Strategies



- No one best way: decision depends on:
 - What you need to know: *numbers or stories*
 - Where the data reside: *environment, files, people*
 - Resources and time available
 - Complexity of the data to be collected
 - Frequency of data collection
 - Intended forms of data analysis

Rules for Collecting Data



- Use multiple data collection tools when possible for triangulation
 - collection of same information using different tools
 - May provide stronger evidence than one data collection method alone
- Also consider data source triangulation and data collector triangulation

More Rules for Collecting Data



Use available data when you can, but need to know:

- how the measures were defined
- how the data were collected and cleaned
- the extent of missing data
- how accuracy of the data was ensured

More Rules for Collecting Data



If you must collect original data:

- be sensitive to burden on others
- pre-test, pre-test, pre-test
- establish procedures and follow them (protocol)
- maintain accurate records of definitions and coding
- verify accuracy of coding, data input

Use Structured Approach When



- need to address extent questions
- have a large sample or population
- know what needs to be measured
- need to show results numerically
- need to make comparisons across different sites or interventions
- Important when you need to make comparisons with alternate interventions

Use Semi-structured Approach When:

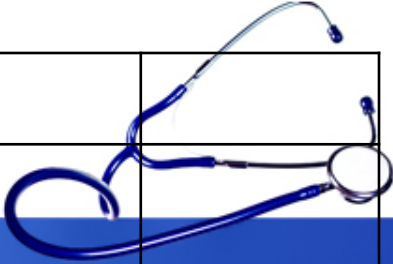


- conducting exploratory work
- seeking understanding, themes, and/or issues
- need narratives or stories
- want in-depth, rich, “backstage” information
- seek to understand results of data that are unexpected
- No rigid script
 - may ask for more detail
 - people can tell what they want in their own way

Quantitative Approaches



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

#	Question	coding	
1)	<i>What is your age?</i>	1. 15-16 2. 17-18 3. 19-20 4. >21	
2)	<i>Marital status?</i>	1. Single 2. Married 3. Engaged 4. Separated 5. Widowed 6. Others	
3)	<i>Which country do you come from ?</i>	1. Saudi Arabia 2. Egypt 3. Syria 4. India 5. Others	
4)	<i>Which city do you come from?</i>	1. Riyadh 2. Jeddah 3. Dammam 4. Eastern region 5. Others	

Qualitative Approach



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

Examples of qualitative Qs



- **What do you know about HIV/AIDS?**
- **Where did you get this knowledge from?**
- **What would you say, if knowledge regarding HIV/AIDS is given through colleges?**

Which Data?



If you:

- want to conduct statistical analysis
- want to be precise
- know what you want to measure
- want to cover a large group

Quantitative

Want narrative or in-depth information

- are not sure what you are able to measure
- do not need to quantify the results

Qualitative

Mixed Methods



- Use of both quantitative and qualitative data collection approaches
- Both can be used equally or one approach may be dominant
- Can be sequential or at the same time
- Considered good practice
- Examples of use

Data Collection Tools



- Participatory Methods
- Records and Secondary Data
- Observation
- Surveys and Interviews
- Focus Groups
- Diaries, Journals, Self-reported Checklists
- Expert Judgment
- Electronic survey
- Other Tools

Tool 1: Participatory Methods



- Involve groups or communities heavily in data collection
- Examples:
 - community meetings
 - mapping
 - transect walks

Community Meetings



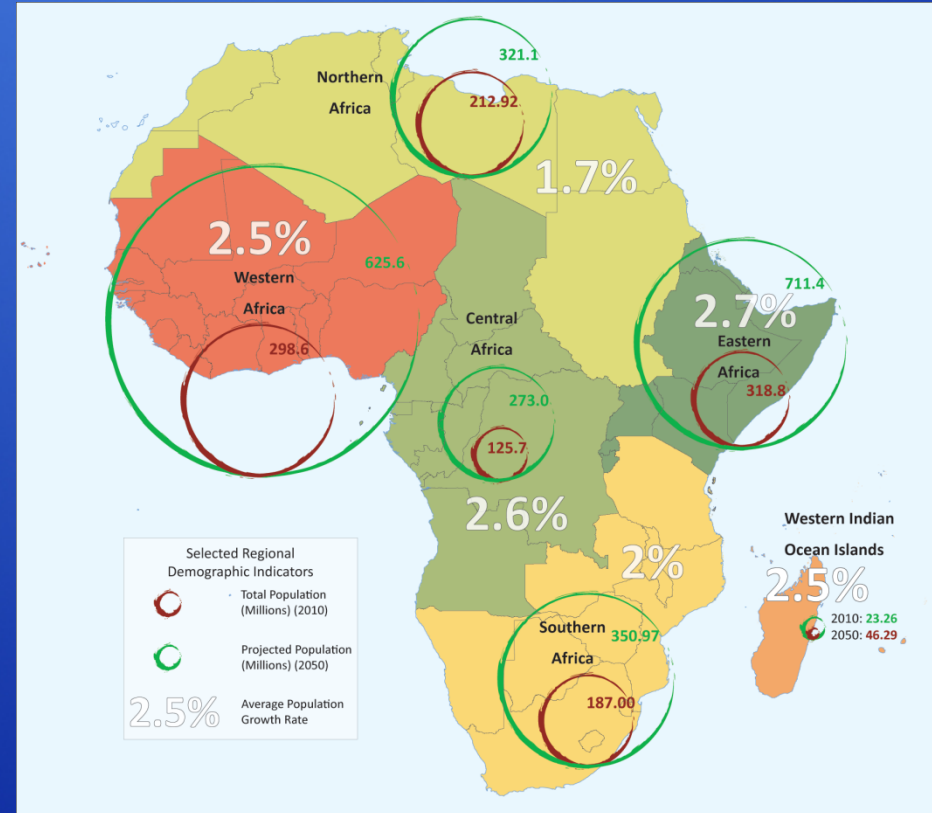
- One of the most common participatory methods
- Must be well organized
 - agree on purpose
 - establish ground rules
 - who will speak
 - time allotted for speakers
 - format for questions and answers



Mapping



- Drawing or using existing maps
- Useful tool to involve stakeholders
 - increases understanding of the community
 - generates discussions, verifies secondary sources of information, perceived changes
- Types of mapping:
 - natural resources, social, health, individual or civic assets, wealth, land use, demographics



Transect Walks



- Evaluator walks around community observing people, surroundings, and resources
- Need good observation skills
- Walk a transect line through a map of a community — line should go through all zones of the community

Tool 2: Records and Secondary Data



- **Examples of sources:**
 - files/records
 - computer data bases
 - industry or government reports
 - other reports or prior evaluations
 - census data and household survey data
 - electronic mailing lists and discussion groups
 - documents (budgets, organizational charts, policies and procedures, maps, monitoring reports)
 - newspapers and television reports

Using Existing Data Sets



- Key issues: validity, reliability, accuracy, response rates, data dictionaries, and missing data rates

Advantage/Challenge: Available Data



Advantages

Often less expensive and faster than collecting the original data again

Challenges

There may be coding errors or other problems. Data may not be exactly what is needed. You may have difficulty getting access. You have to verify validity and reliability of data

Tool 3: Observation



- See what is happening
 - traffic patterns
 - land use patterns
 - layout of city and rural areas
 - quality of housing
 - condition of roads
 - conditions of buildings
 - who goes to a health clinic



Observation is Helpful when:



- need direct information
- trying to understand ongoing behavior
- there is physical evidence, products, or outputs than can be observed
- need to provide alternative when other data collection is infeasible or inappropriate

Degree of Structure of Observations



- **Structured:** determine, before the observation, precisely what will be observed before the observation
- **Unstructured:** select the method depending upon the situation with no pre-conceived ideas or a plan on what to observe
- **Semi-structured:** a general idea of what to observe but no specific plan

Geographic Information Systems (GIS)



- Maps and satellite images for complex or pinpointed regional searches
- E.g. <http://earth.google.com/>
- GIS can have strong impact
 - Mapping
 - Assessing distribution of resources
 - Planning for/modifying service delivery

Photography and audio/video recording



- Increasing use
- Historical photographs can be powerful artifacts to show extent of progress e.g. river clean-up or city cleanliness
- Videos now highly accessible technology for documenting changes in behavior
- Advantages/disadvantages?

Structured Observations



- Have more than one observer, if feasible
- Train observers so they observe the same things
- Pilot test the observation data collection instrument
- For less structured approach, have a few key questions in mind

Tool 4: Surveys and Interviews



- Excellent for asking people about:
 - perceptions, opinions, ideas
- Less accurate for measuring behavior
- Sample should be representative of the whole
- Big problem with response rates

Modes of Survey Administration



- Telephone surveys
- Self-administered questionnaires distributed by mail, e-mail, or websites
- Administered questionnaires, common in the development context
- In development context, often issues of literacy and translation
- **Issues:** Literacy issues
 - Consider accessibility
 - reliability of postal service
 - turn-around time
 - Consider bias
 - What population segment has telephone access? Internet access?

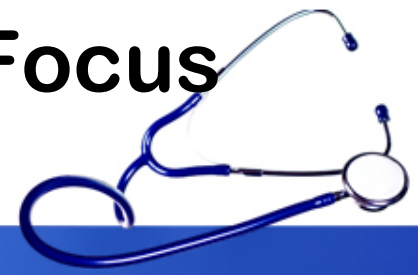
Tool 5: Focus Groups



- Type of qualitative research where small homogenous groups of people are brought together to informally discuss specific topics under the guidance of a moderator
- Purpose: to identify issues and themes, not just interesting information, and not “counts”



Advantages and Challenges of Focus Groups



Advantages Can be conducted relatively quickly and easily; may take less staff time than in-depth, in-person interviews; allow flexibility to make changes in process and questions; can explore different perspectives; can be fun

Challenges Analysis is time consuming; participants not be representative of population, possibly biasing the data; group may be influenced by moderator or dominant group members

Tool 6: Diaries and Self-Reported Checklists



- Use when you want to capture information about events in people's daily lives
- Participants capture experiences in real-time not later in a questionnaire
- Used to supplement other data collection

Self-reported Checklists



- Cross between a questionnaire and a diary
- The evaluator specifies a list of behaviors or events and asks the respondents to complete the checklist
- Done over a period of time to capture the event or behavior
- More quantitative approach than diary

Advantages and Challenges of Diaries and Self-reported Checklists



- Advantages**
- Can capture in-depth, detailed data that might be otherwise forgotten
 - Can collect data on how people use their time
 - Can collect sensitive information
 - Supplements interviews provide richer data
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- Challenges**
- Requires some literacy
 - May change behavior
 - Require commitment and self-discipline
 - Data may be incomplete or inaccurate
 - Poor handwriting, difficult to understand phrases

Tool 7: Expert Judgment



Use of experts, one-on-one or as a panel

E.g., Government task forces, Advisory Groups

Can be structured or unstructured

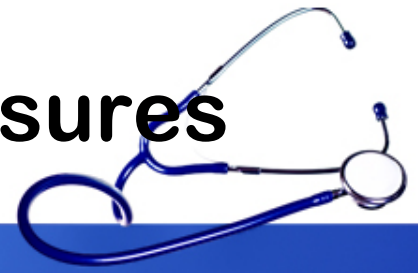
Issues in selecting experts

Other Measurement Tools



- scales (weight)
- tape measure
- stop watches
- chemical tests :
 - i.e. quality of water
- health testing tools:
 - i.e. blood pressure
- aptitude and achievement tests
- citizen report cards

Characteristics of Good Measures



- Is the measure relevant?
- Is the measure credible?
- Is the measure valid?
- Is the measure reliable?

Relevance



- Does the measure capture what matters?
- Do not measure what is easy instead of what is needed

Credibility



- **Is the measure believable? Will it be viewed as a reasonable and appropriate way to capture the information sought?**

Internal Validity



- How well does the measure capture what it is supposed to?
- Are waiting lists a valid measure of demand?

Reliability



- A measure's precision and stability- extent to which the same result would be obtained with repeated trials

How reliable are:

- birth weights of newborn infants?
- speeds measured by a stopwatch?

Data Collection Summary



Choose more than one data collection technique

No “best” tool

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

A Final Note....



- *“I never guess. It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts and theories, instead of theories to suit facts.”
--Sir Arthur Conan Doyle*



Questions?

References



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