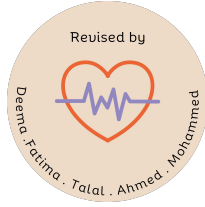


Research
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Tools for data collection: Using questionnaire & other tools

Lecture No. 19

Objectives:

1. Data Collection Strategies
2. Characteristics of Good Measures of Data Collection
3. Quantitative and Qualitative Data
4. Tools for Collecting Data

~ This lecture was presented by **Dr. Hafsa Raheel**

~ It is included in the **Midterm Exam**

~ We highly recommended reading the **Ayah** in the first page

Slides

Color code

Original text

Dr. Notes

Important

Golden note 

Extra

Editing file

- **There's no one best strategy in particular**, it all depends on:
 1. What you need to know? (numbers or stories)
 2. Where the data reside: (environment, files, people)
 3. Resources and time available
 4. Complexity of the data to be collected
 5. Frequency of data collection
 6. Intended forms of data analysis
- **To sum this lecture before we start:**
 1. Choose more than one data collection technique, there's no "best" tool.
 2. Do not let the tool drive your work, but rather choose the right tool to address the evaluation question.

سُورَةُ الرَّعْدِ

وَيُسَبِّحُ الرَّعْدُ بِحَمْدِهِ
وَالْمَلَائِكَةُ مِنْ خِيفَتِهِ وَيُرْسِلُ الصَّوَاعِقَ فَيُصِيبُ بِهَا
مَنْ يَشَاءُ وَهُمْ يُجَادِلُونَ فِي اللَّهِ وَهُوَ شَدِيدُ الْمِحَالِ ﴿١٣﴾

المختصر في التفسير

ويسبح الرعد ربه تسبيحاً مقروناً بحمده سبحانه، وتسبح
الملائكة ربها خوفاً منه وإجلالاً وتعظيماً له، ويرسل
الصواعق المحرقة على من يشاء من مخلوقاته فيهلكه،
والكفار يخاصمون في وحدانية الله، والله شديد الحول
والقوة، فلا يريد شيئاً إلا فعله.

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.**
- **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
- **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

triangulation:

Is the collection of different sources or the looking from different angles.

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**

Example of a Quantitative Approach:

#	Question	Coding
1.	What is your age?	<ol style="list-style-type: none"> 1. 15-16 2. 17-18 3. 19-20 4. >21
2.	Marital status?	<ol style="list-style-type: none"> 1. Single 2. Married 3. Engaged 4. Separated 5. Widowed 6. Others
3.	Which country do you come from ?	<ol style="list-style-type: none"> 1. Saudi Arabia 2. Egypt 3. Syria 4. India 5. Others
4.	Which city do you come from?	<ol style="list-style-type: none"> 1. Riyadh 2. Jeddah 3. Dammam 4. Eastern region 5. Others

Coding is very important.

Coding must be done, before you send the survey

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**

Quantitative & Qualitative Data

Example 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?

Quantitative

If you:

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

Qualitative

If you:

- Want narrative or in-depth information
- Are not sure what you are able to measure do not need to quantify the results

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.

Data Collection Tools

1. Participatory Methods
2. Records and Secondary Data
3. Observation
4. Surveys and Interviews
5. Focus Groups
6. Diaries, Journals, Self-reported Checklists
7. Expert Judgment
8. Electronic survey
9. Other Tools

Very important, the doctor focused on it.

You need to do pretesting (pilot study), and make sure of the validity, clarity and continuity (means the question are related to each other, and the participants go through all of them by sequence) of the survey.

Pilot study must be from same population and geographic location.

And those in the pilot should not be included in the main study.

Tool 1: Participatory Methods

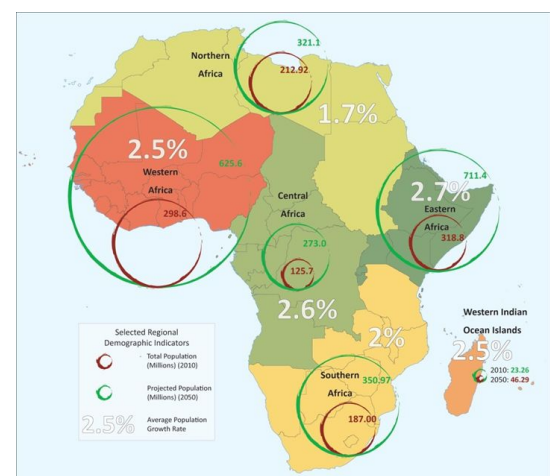
- Involve groups or communities heavily in data collection.
- Examples:
 - Community meetings
 - Mapping
 - Transect walks

Community Meetings:

- One of the most common participatory methods.
- Must be well organized;
 - Agree on purpose
 - Establish ground rules:
 1. Who will speak.
 2. Time allotted for speakers.
 3. Format for Q&As

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 Databases
 - Industry or Government reports
 - Other reports or Prior evaluations
 - Census (التعداد) 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:
 1. **Need direct information.**
 2. Trying to understand **ongoing behavior**.
 3. There is physical evidence, products, or outputs than can be observed
 4. Need to provide alternative when other data collection is infeasible or inappropriate.



Degree of Structure of Observations

Structured	Semi-Structured	Unstructured
Pre-determine, precisely what will be observed before the observation.	A general idea of what to observe but no specific plan.	Select the method depending upon the situation with <u>no preconceived ideas</u> or a plan on what to observe.

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 in (Mapping, Assessing distribution of resources, Planning for/modifying service delivery)
- Researchers used it in COVID-19 and in HIV in Africa

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 & 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

1. Telephone surveys.
2. Self-administered questionnaires distributed by mail, e-mail, or websites.
3. Administered questionnaires, common in the development context.
4. In development context, often issues of literacy and translation.
5. **Issues:** Literacy(ability of reading) 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:**
 1. Can be conducted relatively quickly and easily.
 2. May take less staff time than in depth, in-person interviews.
 3. Allow flexibility to make changes in process and questions.
 4. Can explore different perspectives; can be fun.
 5. **The most common type for qualitative studies**
- **Challenges:**
 1. Analysis is time consuming
 2. Participants not be representative of population, possibly biasing the data.
 3. **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:**
 1. Can capture in-depth, detailed data that might be otherwise forgotten.
 2. Can collect data on how people use their time.
 3. Can collect sensitive information.
 4. Supplements interviews provide richer data.
- **Challenges:**
 1. Requires some literacy, commitment and self-discipline
 2. May change behavior.
 3. Data may be incomplete or inaccurate due to 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

1. Scales (weight).
2. Tape measure.
3. Stop watches.
4. Chemical tests, i.e. quality of water.
5. Health testing tools, i.e. blood pressure.
6. Aptitude and achievement tests.
7. Citizen report cards.

“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

Characteristics of Good Measures

<p>Is the measure <i>relevant</i>?</p>	<ul style="list-style-type: none"> ● Does the measure capture what matters? ● Do not measure what is easy instead of what is needed
<p>Is the measure <i>credible</i>?</p>	<ul style="list-style-type: none"> ● Is the measure believable? Will it be viewed as a reasonable and appropriate way to capture the information sought?
<p>Is the measure <i>valid</i>?</p>	<ul style="list-style-type: none"> ● How well does the measure capture what it is supposed to? ● Are waiting lists a valid measure of demand?
<p>Is the measure <i>reliable</i>?</p>	<ul style="list-style-type: none"> ● A measure’s precision and stability- extent to which the same result would be obtained with repeated trials ● How reliable are: <ul style="list-style-type: none"> - birth weights of newborn infants? - speeds measured by a stopwatch?

القارة:
عبدالله الشهري
وهي التحمي

نواف التركي
ريان الفنامي

الأعضاء:

رغد النظيف
ريما الجريبة
شهد البخاري
نوف الضلعان
أمير الاحمري
وعد ابونخاع
نراء الهويش
في الدوسري
منار الزهراني

عبدالله التركي
محمد الزير
عثمان الدريهم
عبدالعزیز القططاني
ناصر الفيت
سعد السهائي
رائد الماضي
سعود الشعلان
عبدالله المياع
عبدالله النجريس
تركي العتيبي
عبدالله القرني
عامر الفامري
سعد الاحمري
معاذ آل سلام
محمد الحصيني

MCQ:

Q1: What is the primary focus of this lecture?

- A. Analyzing Data Patterns.
- B. Designing Data Visualization.
- C. Selecting Appropriate methods to gather Data.
- D. Implementing Data storage Techniques.

Q2: Which of the following is a characteristic of good measures of data collection?

- A. Maximum Cost.
- B. Low Reliability.
- C. Ambiguity.
- D. Validity.

MCQ:

Q3: In the context of data collection, what is the main distinction between quantitative and qualitative data?

- A. Quantitative data is numerical, while qualitative data is categorical.
- B. Quantitative data is descriptive, while qualitative data is numerical.
- C. Quantitative data is subjective, while qualitative data is objective.
- D. Quantitative data is continuous, while qualitative data is discrete.

Q4: Which of the following is used to be among homogeneous groups ?

- A. Surveys.
- B. Diaries.
- C. Focus group.
- D. Random Sampling.