Data Collection Methods and Food Assessments

Hosted by First Nations Development Institute

Introduction: Marsha Whiting, Senior Grants and Program Officer
Presentation: John Phillips, Consultant
Announcements

• All attendees are on mute
• Questions:
  • Listen: Type in Question box and we will read
  • Q/A also at end of presentation
• Evaluation: survey will pop up when webinar ends and sent in an email. Please complete.
• Recording and attachments can be downloaded from [www.firstnations.org/fnk](http://www.firstnations.org/fnk) next week.
Upcoming Webinars

• December 13, 2016 @ 1:00 p.m. MST
  “Go! Conducting Your Community Food Sovereignty Assessment”

• January 17, 2017 @ 1:00 p.m. MST
  “Moving Forward! Community-Based Policy and Action Plans”
Data Collection Methods and Food Assessments

John Phillips

Webinar Series Gets You Ready to “GO” on a Community Food Sovereignty Assessment

December 5, 2016
Backwards Planning Takes Thinking Ahead

Backward Design

1. Identify Desired Results.
   - Big Ideas and Skills

2. Determine acceptable evidence.
   - Culminating Assessment Task

3. Plan learning experiences and instruction.
   - Learning Events

What do we mean by collecting data?

- Collecting data means putting your design for a measurement system into operation.

- Collecting data involves gathering information through observation, interviews, testing, surveys, and/or other means; recording it in appropriate ways; and organizing it so that it’s easier to work with.
What do we mean by analyzing data?

- Analyzing data involves examining the information you’ve collected in ways that reveal the relationships, patterns, trends, etc. that can be found within it.
- Data can be quantitative (collected as numbers) or qualitative (collected as narrative information, records, journal notes, etc.)
- Quantitative data is usually analyzed by subjecting it to one or more graphical displays or statistical operations that demonstrate the findings.
What do we mean by analyzing data?

- Data are also usually analyzed logically, by looking for patterns and relationships revealed within them.

- Qualitative data can sometimes be turned into quantitative data by, for instance, counting (e.g., the number of times a behavior occurs in various circumstances) or by rating on a number scale such dimensions as importance, satisfaction, or quality (e.g., the quality of housing or quality of life in neighborhoods).

- A combination of quantitative and qualitative data often yields the best overall picture.
Why should you collect and analyze data for your project?

- This can show whether or not there was actually any significant change that you hoped to influence.
- This can show connections between or among various factors that may have an effect on the success of your project.
- This can imply or show the reasons that your work was effective or ineffective.
Why should you collect and analyze data for your project?

- This can provide you with credible evidence to show funders and the community that your program is successful, or that you’ve uncovered, and are fixing, the elements that are barriers to success.

- This can show that you’re serious about the project and about improving your work.

- This can show the field that what you’re doing works well, and thus pave the way for others to use similar methods and approaches as best practices.
When and by whom should data be collected and analyzed?

- Data collection should start no later than when you begin your work and continue throughout.
- If you want to understand long-term effects, you should collect data on participants for some time after they leave your program.
- Data should be collected and analyzed by people who are capable of doing so.
- Data collection and analysis can be done by anyone from community members who have been trained to professionals with experience in conducting studies.
How do you collect and analyze data?

- Implement the data collection activities you’ve planned.
- Organize the data you’ve collected.
- Conduct data graphing, visual inspection, statistical analysis, or other operations on the data as appropriate.
- Take note of any significant or interesting results.
- Interpret the results.
True or False?

- Complex analysis impresses people.
- I am generally able to analyze and interpret the program data I gather.
Data analysis and interpretation

- Think about analysis EARLY
- Start with a plan
- Code, enter, clean
- Analyze
- Interpret
- Reflect
  - What did we learn?
  - What conclusions can we draw?
  - What are our recommendations?
  - What are the limitations of our analysis?
Why do I need a data analysis plan?

- To make sure the questions and your data collection instrument will get the information you want.
- To align your desired “report” with the results of analysis and interpretation.
- To improve reliability—consistent measures over time.
Key components of a data analysis plan

- Purpose of the research, program or evaluation
- The Question(s)
- What you hope to learn from the question(s)
- Analysis technique
- How the data will be presented
Levels of change (increasing in power and difficulty)

- **Knowledge:** My knowledge about....has changed as a result of....
- **Attitude:** My confidence in doing something about....has changed as a result of....
- **Behavior:** My actions have changed about....as a result of....
- **Individual:** Individuals have changed their knowledge, attitudes or behavior as a result of....
- **Group:** Groups of individuals (e.g., families, segments of the population, etc.) have changed their knowledge, attitudes or behavior as a result of....
- **Society:** Society (e.g., tribal nations, the U.S.; global, etc.) have changed their knowledge, attitudes or behavior as a result of....
What are your questions?

<table>
<thead>
<tr>
<th>If you are trying to learn:</th>
<th>Choose <strong>quantitative</strong> methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How many?</td>
<td></td>
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<tr>
<td>• How much?</td>
<td></td>
</tr>
<tr>
<td>• What percentage?</td>
<td></td>
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<tr>
<td>• How often?</td>
<td></td>
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<tr>
<td>• What is the average amount?</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>If you are trying to learn:</th>
<th>Choose <strong>qualitative</strong> methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What worked best?</td>
<td></td>
</tr>
<tr>
<td>• What did not work well?</td>
<td></td>
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<tr>
<td>• What do the numbers mean?</td>
<td></td>
</tr>
<tr>
<td>• How was the project useful?</td>
<td></td>
</tr>
<tr>
<td>• What factors influenced success or failure?</td>
<td></td>
</tr>
</tbody>
</table>
Analyzing and Interpreting Quantitative Data

- Quantitative Data is:
  - Presented in a numerical format
  - Collected in a standardized manner
    e.g. surveys, tests
  - Analyzed using statistical techniques
True or False?

- Quantitative data we gather are more generalizable than qualitative data.
- Stating **limitations** weakens the evaluation.
Using Quantitative Methods

<table>
<thead>
<tr>
<th>Step 1</th>
<th>Design Your Data Collection Methods - Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Write your questions</td>
</tr>
<tr>
<td></td>
<td>• Develop the data collection tool (i.e., questionnaire)</td>
</tr>
<tr>
<td></td>
<td>• Pilot test the questionnaire</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2</th>
<th>Collect Your Data - Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Decide who will receive the questionnaire</td>
</tr>
<tr>
<td></td>
<td>• Maximize response rate</td>
</tr>
<tr>
<td></td>
<td>• Check for nonresponse bias</td>
</tr>
<tr>
<td></td>
<td>• Provide motivation and information about risks and participants' rights</td>
</tr>
</tbody>
</table>
Evaluation Using Quantitative Methods

| Step 3 | **Summarize and Analyze Your Data**  
|        | • Compile descriptive data  
|        | • Simplify data to explore trends  
|        | • Provide comparisons |

| Step 4 | **Assess the Validity of Your Findings**  
|        | • Calculate response rate  
|        | • Look for low completion rate of specific sections of surveys  
|        | • Investigate socially desirable responding |
Analyzing Survey Data

Do you want to report...

- how many people answered a, b, c, d?
- the average number or score?
- a change in score between two points in time?
- how people compared?
- how many people reached a certain level?
Types of survey questions

- Yes/No
- Multiple choice
- Rating scales
- Ranking
- Open-ended
Common descriptive statistics

- Count (frequencies)
- Percentage
- Mean
- Mode
- Median
- Range
- Standard deviation
- Variance
- Ranking
Administering the survey

1. Send a Pre-Survey Letter
2. Send the Survey
3. Send a Personalized Reminder
4. Send a Second Reminder
5. Keep Track of Undeliverable or Uncompleted Surveys
Getting your data ready

- Assign a unique identifier for each case
- Organize and keep all forms (questionnaires, interviews, testimonials)
- Check for completeness and accuracy
- Remove those cases that are incomplete or do not make sense
Other types of quantitative methods

- Direct observation and measurement
- Experiments and testing
- Secondary data collection
Data entry

- You can enter your data:
  - By hand
  - By computer
Data entry by computer

- By Computer
  - Excel (spreadsheet)
  - Microsoft Access (database management)
  - Quantitative analysis: SPSS (statistical software) & Excel too
  - Qualitative analysis: Epi info (CDC data management and analysis program: www.cdc.gov/epiinfo); In ViVo, etc., or simply Word.
Smoking: 1 (YES) 2 (NO)

<table>
<thead>
<tr>
<th>Survey ID</th>
<th>Q1 Do you smoke?</th>
<th>Q2 Age</th>
<th>Q3 Support ordinance?</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td>1</td>
<td>24</td>
<td>2</td>
</tr>
<tr>
<td>002</td>
<td>1</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>003</td>
<td>2</td>
<td>36</td>
<td>1</td>
</tr>
<tr>
<td>004</td>
<td>2</td>
<td>48</td>
<td>1</td>
</tr>
<tr>
<td>005</td>
<td>1</td>
<td>26</td>
<td>1</td>
</tr>
</tbody>
</table>
Dig deeper

- Did different groups show different results?
- Were there findings that surprised you?
- Are there things you don’t understand very well – further study needed?
<table>
<thead>
<tr>
<th></th>
<th>Supports restaurant ordinance</th>
<th>Opposes restaurant ordinance</th>
<th>Undecided/declined to comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current smokers</strong></td>
<td>8 (15% of smokers)</td>
<td>33 (60% of smokers)</td>
<td>14 (25% of smokers)</td>
</tr>
<tr>
<td><strong>(n=55)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Non-smokers</strong></td>
<td>170 (86% of non-smokers)</td>
<td>16 (8% of non-smokers)</td>
<td>12 (6% of non-smokers)</td>
</tr>
<tr>
<td><strong>(n=200)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>178 (70% of all respondents)</td>
<td>49 (19% of all respondents)</td>
<td>26 (11% of all respondents)</td>
</tr>
<tr>
<td><strong>(N=255)</strong></td>
<td></td>
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<td></td>
</tr>
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Current smokers (n=55):
- Supports: 8 (15% of smokers)
- Opposes: 33 (60% of smokers)
- Undecided: 14 (25% of smokers)

Non-smokers (n=200):
- Supports: 170 (86% of non-smokers)
- Opposes: 16 (8% of non-smokers)
- Undecided: 12 (6% of non-smokers)

Total (N=255):
- Supports: 178 (70% of all respondents)
- Opposes: 49 (19% of all respondents)
- Undecided: 26 (11% of all respondents)
Pre-post or post-then-pre Data?

- Check data—any individual not responding to both pre and post should be discarded.
- Decide:
  - Report individual change or combined change?
  - Compare to a standard?
7. Listed below are topics presented during this course. On the left, circle your knowledge of each topic BEFORE the workshop. On the right, circle your knowledge of each topic AFTER the workshop.

<table>
<thead>
<tr>
<th>Knowledge BEFORE</th>
<th>Topic</th>
<th>Knowledge AFTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-EXISTENT</td>
<td>MINIMAL MODERATE CONSIDERABLE</td>
<td>Topic 1</td>
</tr>
<tr>
<td>NON-EXISTENT</td>
<td>MINIMAL MODERATE CONSIDERABLE</td>
<td>Topic 2</td>
</tr>
<tr>
<td>NON-EXISTENT</td>
<td>MINIMAL MODERATE CONSIDERABLE</td>
<td>Topic 3</td>
</tr>
<tr>
<td>NON-EXISTENT</td>
<td>MINIMAL MODERATE CONSIDERABLE</td>
<td>Topic 4</td>
</tr>
</tbody>
</table>
Interpretation of Pre/Post Data

**Which statement is the most significant to you?**

The number of community members reporting strong or very strong knowledge of food sovereignty increased from 4 (50%) to 6 (75%).

The number of community members reporting at least some knowledge of food sovereignty increased from 5 (63%) to 8 (100%).

50% of the 8 participants reported an increase in their knowledge of food sovereignty.

Self-reports of knowledge of food sovereignty on a scale from 1=minimal to 4=very strong averaged 2.375 before the training and 3.0 after.

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Pre-</th>
<th>Post-</th>
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<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>3</td>
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<tr>
<td>C</td>
<td>4</td>
<td>4</td>
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<td>D</td>
<td>4</td>
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<tr>
<td>E</td>
<td>2</td>
<td>3</td>
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<tr>
<td>F</td>
<td>1</td>
<td>3</td>
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<tr>
<td>G</td>
<td>1</td>
<td>2</td>
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<td>H</td>
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<tr>
<td>I</td>
<td>3</td>
<td>(missing)</td>
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<tr>
<td>J</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
Discussing limitations

Written reports:
- Be explicit about your limitations

Oral reports:
- Be prepared to discuss limitations
- Be honest about limitations
- Know the claims you cannot make
  - Do not claim causation without a true experimental design
  - Do not generalize to the population without random sample and quality administration (e.g., <60% response rate on a survey)
Analyzing and Interpreting Qualitative Data

- Qualitative data is thick in detail and description.
- Data often in a narrative format
- Data often collected by observation, open-ended interviewing, document review
- Analysis often emphasizes understanding phenomena as they exist, not following pre-determined hypotheses
Quiz

- Data have their own meaning
- Qualitative analysis is easier than quantitative analysis
Analyzing qualitative data

“Content analysis” steps:

1. Transcribe data (if audio taped) or take detailed notes
2. Read transcripts
3. Highlight quotes and note why important
4. Code quotes according to emerging themes
5. Sort quotes into coded groups (themes)
6. Interpret patterns in quotes
7. Describe these patterns
Q4. What IPM practices have you used, are currently using, or have encouraged?

- **Chemical pesticide use** = 71
- **Biological Control** = 66
- **Mechanical removal** = 41
- **Cultural controls** = 68

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- **Remove food, shelter, access.** Do not sign up for a "spray schedule". Be thoughtful and reasonable about using pesticides. ALWAYS read the label and use appropriately. Be very judicious about using around children, water, etc.
- **Surveys, Random Sampling, Monitoring, Management when infestation threshold is reached.** with **mechanical, biological controls** and organic pesticides.
- **Chemical and Bioagents, Cultral**
- **Mechanical removal of noxious weeds in high priority areas.** Monitoring for GSOB and other tree beetles to identify infestations early.

we have encouraged IPM in schools and daycares and plan to expand into other tribal entities and structures.

- **herbicides, pesticides, insecticides.**
- **Biological controls, herbicides** | education, re-seeding and **mechanical (mowing)**
- **Pesticide, Insecticide, Tamarisk Removal by machine**
Emergent or pre-conceived categories?

- What themes emerge related to food sovereignty programs?
- What themes were confirmed or rejected related to food sovereignty programs?
Setting up Focus groups

- Good way to collect a range of qualitative data in one setting.
- Target specific or diverse range of opinions?
- Ideally between 6 to 12 participants, pre-screened for desired representation.
- Compensation for travel and time.
- Finding the right place and the right time.
- Use an experienced unbiased facilitator.
- Video recording is best. Audio taping with notes is second best.
- Keep doing it until data starts becoming repetitive.
Focus group sample

Q. How were the food sovereignty activities different from other projects?
When I was little, food was never that exciting to me. I didn’t realize how much is involved in how I get my food. It’s shown me how many different things you need to think about.

The food project is more personal. It’s more of a reflection of yourself. Where with other material things, you just talk about it like their objects. With food, you show who you are.

(lots of agreement with this).

Q. What about the project helped with communication?
You’re pushed into the discussion. A lot of projects require demonstrations, but the first year, everyone encouraged me just to talk.

To have someone push you along the way helps.

Q. How have you been changed?
Entering this project has made me much more aware about where my food comes and what’s in it. Now when I go to buy food, I’m thinking about all of that. And my eyes are opening to how my community deals with food.
In-depth Interviewing

- Face-to-face or phone interviews with individuals with key perspectives.
- Use structured or semi-structured interview guide.
- Use trained interviewers that avoid leading (biased) questions/comments, and know when to probe and when to move on.
- Finding the right time and the right place.
- Audio taping is best, detailed notes next best. Fill in notes with observations and reflections as soon as possible following the interview.
- Keep doing it until the data repeats itself.
Other types of qualitative data collection

- Direct observation
- Case studies (illustrative, comparative)
Ensuring Validity in Qualitative Analysis

- Be systematic
- Use multiple raters
- Attend to context (e.g. keep track of who said what)
- Account for outlying and surprising statements
- Triangulate
Community-based Participatory Research

- Recognizes the community as an equal, knowledgeable partner
- Builds on strengths and resources within the community
- Facilitates collaborative, equitable involvement of all partners in all phases of the research
- Integrates knowledge and action for mutual benefit of all partners
- Promotes a co-learning and empowering process that attends to social inequalities
- Involves a cyclical and iterative process
- Addresses health from both positive and ecological perspectives
- Disseminates findings and knowledge gained to all partners
- Involves long-term commitment by all partners.
Community-based Participatory Research

- It honors community knowledge, ownership and control
- It will result in better community buy-in
- It will build the capacity of the community
- It will set the foundation for long-term relationships and sustainability
Community-based Participatory Research

- It will take longer
- It will cost more
- It will require more communication, negotiation and compromise
- It is riskier
Resources

- Building Capacity in Evaluating Outcomes Curriculum and Training (October 2009)
  http://www.uwex.edu/ces/pdande/evaluation/bceo/index.html

- The Community Tool Box--Community Health and Development at the University of Kansas. (November 2016)

- Collecting and Analyzing Evaluation Data - National Network of Libraries of Medicine. (November 2016)
  https://nnlm.gov/neq/guides/bookletThree508
Questions?

- John Phillips
- jphillips@consultjohnphillips.com
Here’s some resources on how to code using Word. I found YouTube to have a lot of good clips:

- [http://www.communitybasedresearch.ca/resources/pdf/How%20to%20Analyze%20Qualitative%20Data%20using%20Microsoft%20WORD.pdf](http://www.communitybasedresearch.ca/resources/pdf/How%20to%20Analyze%20Qualitative%20Data%20using%20Microsoft%20WORD.pdf)


- [https://www.youtube.com/watch?v=wilBzLjZ1M](https://www.youtube.com/watch?v=wilBzLjZ1M)
Thank You!

Feel free to contact me with any questions you may have as you continue your work.

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jphillips@consultjohnphillips.com
Or
Marsha Whiting
mwhiting@firstnations.org
303.774.7836
Upcoming Webinars

• December 13, 2016 @ 1:00 p.m. MST
  “Go! Conducting Your Community Food Sovereignty Assessment”

• January 17, 2017 @ 1:00 p.m. MST
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THANK YOU JOINING OUR WEBINAR TODAY!

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Any questions, please feel free to contact Marsha Whiting at (303)774-7836 or via email: mwhiting@firstnations.org