ANALYZING SURVEYS

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Summary

This fact sheet outlines how to analyze survey results, why analysis is important, and how to interpret different types of data. Analyzing survey data is an important step after conducting a community survey because it can help you move from the information gathering stage into making decisions as a planning team.

Keywords: community engagement, communication tools, managing / storing data, analyzing data

What Is A Survey?

A survey, or questionnaire, is a tool that draws from the most important source of information – the people in your community. They can be used to gather statistics on your community or opinions and concerns of members.

> See *Creating Community Surveys* to learn more!

What Is Data Analysis?

Once you've conducted a community survey, you have a set of responses, or 'data.' Data analysis is the process of turning this 'data' into 'findings' (what does it all mean). It's like listening to a story and pointing out what the lesson is.
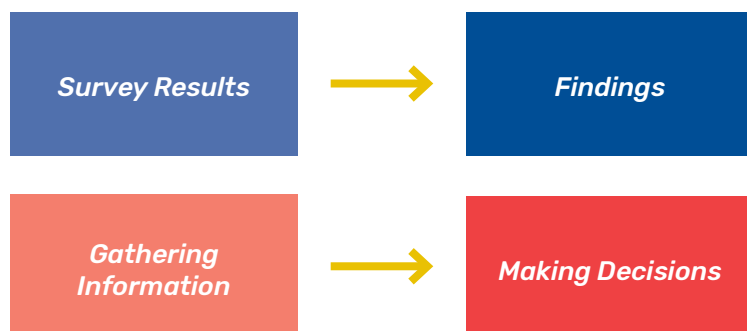
| Survey Results | → | Findings |
| Gathering Information | → | Making Decisions |

Figure 1 | *What is data analysis?*

Why Analyze Survey Data?

Analyzing survey data helps make sense of results. It summarizes survey responses into a format that can be shared back to the community or used by your planning team. It can help your planning team make decisions and understand what is important to your community. It can help you move forward in your planning process from gathering information to setting priorities.

When Do You Do A Survey and Analysis?

As community engagement is important at any stage of the planning process, surveys can be used at any phase to involve community.[1] Most often, they're used at the planning stage to gather background information or feedback from the community.[2] They can also be used at the implementation stage to gather feedback on the planning process or how the community may have changed over time.[3] Data analysis happens once you've finished conducting your survey and you want to understand how to move forward.

What Types of Data Are There?

Some surveys gather **quantitative data** (eg. a community census) while others gather **qualitative data** (eg. opinion survey). Many surveys will include both.

Quantitative Data

Qualitative Data

Quantitative Data

Quantitative Data refers to numbers or data collected through close-ended questions (yes/no, multiple choice questions).[4]

> **Example Question:** Which of the following is your top priority for the community?
> a) Housing   b) Recreation   c) Jobs
> d) Food security   e) Road access
>
> **Results:** You will get a certain number of responses for a, b, c, d, and e and can add each up.

Table 1 | Benefits and drawbacks of quantitative data.

Benefits	Drawbacks
Basic analysis can be quick and easy	More detailed analysis might require statstical expertise
Findings can be concrete and not subject to bias	Doesn't answer the 'why'[6]

Qualitative Data

Qualitative data refers to written words or data collected through open-ended responses.[5]

> **Example Question:** What is your top priority for the community?
>
> **Results:** You will get many sentences as responses, such as: "I feel like there should be a new recreation centre for youth to go to after school."

Table 2 | Benefits and drawbacks of qualitative data.

Benefits	Drawbacks
You can use your own knowledge to interpret results	Can be time consuming
Can capture information you might have never thought of	May be subject to bias
	Findings are specific to the people who responded an may not represent the whole community[7]

How Do You Analyze Survey Data?

1 Focus your analysis

Your analysis will be informed by what you want to get out of it. Think about the original purpose of the survey and what you wanted to find out.[8] Remember this throughout the analysis. You can also place Indigenous world views at the centre and analyze responses from this perspective.[9]

2 Prepare your data

Get to know the data, what was asked, and how many responses there were.[10] The easiest way to go through it will be on the computer, in a program like Microsoft Excel. If your survey was done on paper, type in responses to the computer. If it was done online (ie. Survey Monkey), you can download the results and add to Excel. See Figure 2 for a sample of Excel data.

> ### *Tips for Success*
> • Type all answers from one survey (one person) in the same row so you can compare responses from that person together (see Figure 2).
>
> • If you gathered both qualitative and quantitative data, it's helpful to enter these separately – you can use separate "sheets" in Excel.
>
> • Once the data is typed up, check for mistakes – or have another person double-check it for you!
>
> • See *University of Wisconsin's Using Excel* for a beginner's guide on using the program.

3 Analyze it!

Decide what type of data you have - quantitative or qualitative - to see how you will analyze it.

Figure 2 | Sample Excel spreadsheet of survey data
Adapted from: (University of Wisconsin-Extension. "Using Excel for Analyzing Survey Questionnaires." University of Wisconsin-Extension. 2004. https://learningstore.uwex.edu/Assets/pdfs/G3658-14.pdf. p. 21.) *Used with permission.*

How Do You Analyze Quantitative Data?

For quantitative data, you can use math equations to give meaning to responses. If you're using Excel, many of these are "formulas" that the program will do for you. Some common equations are described below.

Percentages

Percentages show what proportion a response is out of the total (translated in a value out of 100).[11]   They can be useful to compare responses.

> #### *Example*
> **New community centre support** (n=56)
>
> 75% of people want a new community centre
>
> 25% of people don't want a new community centre

> #### *Tips for Success*
> When reporting percentages, it's helpful to show the total number of responses using the letter n=#. It shows how many are represented in the percentage.

Averages

Averages show the most common value. They can be used to show the most common response from a scale in a multiple-choice question, rather than what was the highest response. You can calculate this by assigning values to each response.[12]

> #### *Example*
> **I think there should be a new community centre in the community.**
>
> a) Strongly Agree b) Agree c) Neutral
> d) Disagree   e) Strongly Disagree
>
> The average response is "Agree."

> #### *Tips for Success*
> See *University of Wisconsin's Analyzing Quantitative Data* for directions on how to calculate percentages, averages, and other equations.

How To Analyze Qualitative Data?

There is not one way to do qualitative analysis. It is a process of reading, interpreting, and then trying to understand what it all means.[13]

There is the possibility for bias in qualitative analysis because the person interprets data through their own knowledge. To reduce bias, have multiple people read through the findings

> ### *bias*
> favouritism towards one response or idea, usually in a way that is considered unfair.

or hold meetings with your planning team as you analyze results.[14] But, because you interpret data through someone's experience, there is an opportunity to bring in Indigenous perspectives. You can frame issues through your world view and what's important to your community.[15]

In general, you can follow the steps below[16]:

Code the data

⬇

Organize the themes

⬇

Interpret the themes & bring it all together
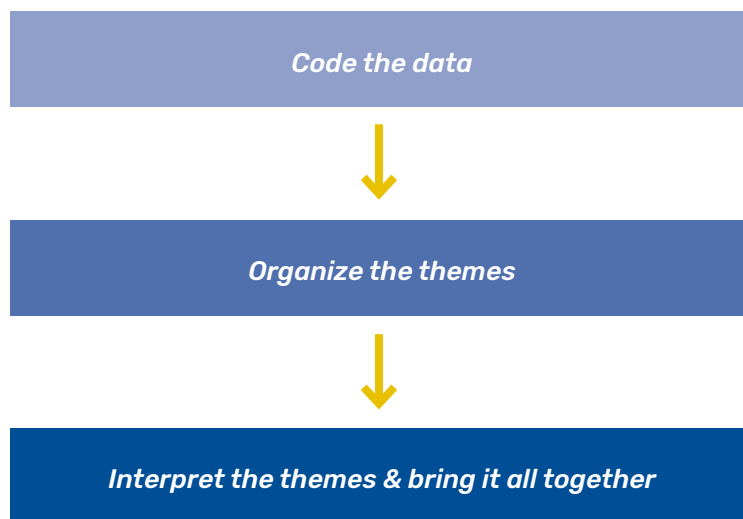
Code the data

This step involves reading results and identifying themes or ideas. These themes are your categories (and sub-categories) that help sort what is being said. It can be helpful to print out the responses and write your themes and notes on the margins. Be sure read through responses more than once so you don't miss anything. Keep a list of each theme and its definition to help explain how you came to your conclusions. And remember, responses can fit in more than one theme.[17]

Organize the themes

Collect your list of themes and see if you can combine any or make sub-themes. Rewrite the definitions for new themes.

Interpret the themes & Bring it all together

Once you have your list of themes, sub-themes, look beyond to see key ideas or values in them. Point out connections between themes, like similarities or differences. Look for overlap and connections – you may discover that two or more themes appear together often (ie. education and jobs). Summarize the themes and point out what the major learnings are.[18] This summary can serve as the beginning of your survey report.

Example

1. Code the data

What kind of opportunities for youth would you like in the community?	CODES:
I want to see high-school kids getting more opportunity to play sports or learn music in school.	High-school programs, sports, music
High-school kids aren't getting enough after-school recreation. There should be places, like a centre, where they can go to be together.	Recreation, youth centre
I would like to see cultural programming and chances for youth and elders to learn from each other.	Cultural programs, elders
The kids need tutoring programs after school to help them graduate and get good jobs.	Tutoring, jobs

2. Organize the themes
Combine high-school programs and recreation into a general theme, with sub-themes:

Theme: Youth programs

Sub-themes: sports, music, youth centre, cultural programs, elders, tutoring, job-readiness
(Don't forget to write out definitions for themes!)

3. Interpret the themes & Bring it all together
People in the community want there to be programs for youth in a wide range of areas, including recreation, tutoring, and cultural programs. There were suggestions for a centre for youth to gather, sports and music programs, and opportunities to connect with elders. People pointed out the importance for education programs and jobs.

Tips for Success

- You can count the number of times a theme or sub-theme is mentioned. This can help point out importance. But remember even a theme mentioned only once can still be important!

- Compare themes with demographics (ie. 60% of those under 18 wanted a new community centre).

- See *University of Wisconsin's Analyzing Qualitative Data* for step-by-step instructions on how to code and interpret data.

How Do You Share Results?

Once you've analyzed your survey data, it's important to share your findings with your planning team and back to the community. Write a report that your planning team can use to move forward and a shorter report (2-4 pages) to share with the community. Remember the purpose and focus of your survey to help you decide what to include in the report.

Tips for Success

- Try using visuals in your report to make it more accessible (see Figure 3).

Figure 3 | *Sample 'Word Cloud' visual for a report*
Source: (Australia Council for the Arts. "Engaged Audiences' Image of Aboriginal and Torres Strait Islander Arts." Digital Image. Building Audiences: Aboriginal and Torres Strait Islander Arts. August 20, 2015. http://www.australiacouncil.gov.au/research/building-audiences-aboriginal-and-torres-strait-islander-arts/)

Further Reading

Using Excel for Analyzing Survey Questionnaires by University of Wisconsin

How to use Excel and a range of formulas for analyzing data

https://learningstore.uwex.edu/Assets/pdfs/G3658-14.pdf

Analyzing Quantitative Data by University of Wisconsin

Details on descriptive statistics – percentages, averages, rankings, and more. Shows when and how to use them

http://learningstore.uwex.edu/assets/pdfs/G3658-6.pdf

Analyzing Qualitative Data by University of Wisconsin

How to analyze qualitative data with step-by-step instructions

https://learningstore.uwex.edu/assets/pdfs/g3658-12.pdf

Endnotes

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2   Indigenous & Northern Affairs Canada, 2016, p. 29.

3   Indigenous & Northern Affairs Canada, 2016, p. 46.

4   Centers for Disease Control & Protection, "Analyzing Quantitative Data for Evaluation – Evaluation Brief no.20," *Centers for Disease Control & Protection,* 2009, https://www.cdc.gov/healthyyouth/evaluation/pdf/brief20.pdf.

5   University of Wisconsin-Extension, "Analyzing Qualitative Data," *University of Wisconsin-Extension*, 2003, https://learningstore.uwex.edu/assets/pdfs/g3658-12.pdf, p. 1.

6   Centers for Disease Control & Protection, "Quantitative," 2009.

7   Centers for Disease Control & Protection, "Analyzing Qualitative Data for Evaluation – Evaluation Brief no.19," *Centers for Disease Control & Protection,* 2009, https://www.cdc.gov/healthyyouth/evaluation/pdf/brief19.pdf.

8   University of Wisconsin-Extension, "Qualitative," 2003.

9   Vanessa W. Simonds & Suzanne Christopher, "Adapting Western Research Methods to Indigenous Ways of Knowing," *American Journal of Public Health* 103, no. 12 (Dec 2013): 2185-2192.

10   University of Wisconsin-Extension, "Qualitative," 2003.

11   University of Wisconsin-Extension, "Analyzing Quantitative Data," *University of Wisconsin-Extension*, 2003, http://learningstore.uwex.edu/assets/pdfs/G3658-6.pdf.

12   University of Wisconsin-Extension, "Quantitative," 2003.

13   June Lennie, Jo Tacchi, Bikash Koirala, Michael Wilmore and Andrew Skuse, "Equal Access Participatory Monitoring and Evaluation Toolkit," *Queensland University of Technology et. al*, 2011, https://www.betterevaluation.org/sites/default/files/EA_PM%26E_toolkit_front_pages%26introduction_for_publication.pdf, p. 3.

14   Centers for Disease Control & Protection, "Qualitative," 2009.

15   Linda Tuhiwai Smith, "Twenty-Five Indigenous Projects" in *Decolonizing Methodologies: Research and Indigenous Peoples*, Linda Tuhiwai Smith, Zed Books, 1999, p. 153.

16   University of Wisconsin-Extension, "Qualitative," 2003.

17   University of Wisconsin-Extension, "Qualitative," 2003.

18   University of Wisconsin-Extension, "Qualitative," 2003.