



Research Method: Surveys

Use community perspectives to generate the necessary data for your research project.

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1. Knowing the Tool

1.1 - What are surveys?

Surveys are a set of questions designed to generate necessary data for accomplishing the objectives of a research project. Ideally, a survey gathers data in a standard and uniform manner. This control allows a valid basis for comparing the answers of people who take the survey (the **respondents**).

1.2 - What makes a good survey?

A good survey meets the following criteria:

- Gets the information to you need answer your research question
- Designed for the respondent
- Makes data processing easier
- Brings in unbiased responses

Let's understand how to meet these requirements as we learn how to design a survey.

2. Designing Surveys

2.1 - How do you get the information you need?

First, determine your survey goals and data collection methods. Both of these characteristics will impact the design of the survey. The data collection method can be one of the following:

1. **In-person**: Whether you station yourself on a busy street corner with a clipboard or sit down with individual members of your class, this method can help you identify and bring in respondents. However, administering in-person surveys may take up a lot of your time as you wait for potential respondents to pass by.
2. **Self-administered**: Respondents can find and complete your survey on their own. They may come across the survey through a QR-code posted in the hallway, an advertisement on Facebook, a promotional email, or another method of communication. When they find the time to take your survey, you may be refining other portions of your research project, doing chores, or even sleeping!

3. **Telephone**: With extensive verbal descriptions of questions and their format, you can collect survey responses over the phone. This format, like the in-person administration, takes up a lot of your time. While it may be easier to call potential respondents from the comfort of your home than to wait outside for interested parties, explaining the survey in detail requires great time and, perhaps more importantly, patience.

Based on the information you are trying to find and the respondents you are trying to target (survey goals), choose the best way to collect survey responses (data collection methods).

2.2 - Questions about questions?

There are two types of question response formats (1) open-ended and (2) closed-ended. With open-ended questions, you can pre-code answers, i.e. flag responses for certain keywords (we will discuss coding further in Section 3). Open-ended questions can probe a respondent for proactive, reactive, or spontaneous opinions or information. Closed-ended questions do not require such extensive responses or written thoughts. Answer options can be dichotomous (e.g. true/false, yes/no), multiple choice, or on a scale.

Beware! Multiple-choice questions may cause **position bias**, wherein higher positioned items are more likely to be seen and thus clicked regardless of their actual relevance.

The question wording should be clear – avoid **double-barreled**, as well as **leading and loaded questions**. Set a time frame for the respondents' memory, as they should be able to answer the questions. To ensure respondents' willingness to answer questions, use third person techniques and counter-biasing statements.

Double-barreled questions address more than one issue at once. "Do you think climate change is an important and often-ignored consideration for policymakers?" and "Is artificial intelligence a useful and fair technology to use in courtrooms?" are both examples of double-barreled questions. Leading questions includes wording that suggests a "correct" answer, e.g. "How often do you spend time in crowds of 100+ people, which are known to significantly increase your risk of exposure to COVID-19?" Finally, loaded questions are emotionally charged or suggestive of a socially desirable answer, e.g. "Do you think that patriotic Americans should sign up for at least one clinical trial each year to continue the advancement of medicine?"

Table 1. The Do's and Don'ts of Question Wording

"Do" of Question Wording	"Don'ts" of Question Wording
<ol style="list-style-type: none">1. Be brief.2. Focus on a single topic or issue.3. Make sure the question has a common interpretation.4. Use conversational language.5. Use grammatically simple sentences.	<ol style="list-style-type: none">1. <u>Don't</u> go beyond respondents' experience, expertise, or memory.2. <u>Don't</u> make assumptions.3. <u>Don't</u> use ambiguous wording or confusing response categories.4. <u>Don't</u> ask double-barreled questions.5. <u>Don't</u> ask leading and loaded questions.



Figure 1. Nobody should be able to make "Don't Dead Open Inside" memes about your survey. Make sure your wording and figures are clear – unless you're asking, "How do you read this logo?" Figure taken from [Know Your Meme](#).

2.3 - I have my questions, what about formatting?

Don't head to Google Forms quite yet! Once you complete writing your questions, establish the survey flow and layout with the following tips:

1. Consider adding **skip patterns** when a question might not be applicable to all respondents:

"Have you contracted COVID-19 in the last 6 months?"
[If yes] "How long did your symptoms last?"

2. Use a **"don't know" option** when appropriate to reduce uninformed responses.

"Have you contracted COVID-19 in the last 6 months?"
- Yes - No - Don't know

3. Include **"Other, please specify" open-ended options** when you might not have a complete list of response categories.

"What types of COVID-19 symptoms did you experience?"
- Cough - Fever - Runny nose
- Confusion - Other, please specify

4. If you think a question may be loaded, ask it in the third-person or with a **counterbiasing question** attached to get a truthful answer.

"What types of events has your workplace hosted in the last 6 months?"
~~"Where did you go that made you contract COVID-19?"~~

Your overall format should work like a funnel. Start with a screen to get the right sample of respondents who you identified. Then, ask easy/general questions to build rapport with them. Once the respondent has committed to the survey, ask the tough/important questions. Finally, allow respondents to ask sensitive and demographic questions at the end to avoid making them uneasy.

We recommend that you make your survey using Google Forms, Survey Monkey, or Qualtrics. Find out which programs work best for your school or your research group. The last steps you should take are to draft a proper introduction and closing for the respondents and, if applicable, put your survey instructions in capital letters.

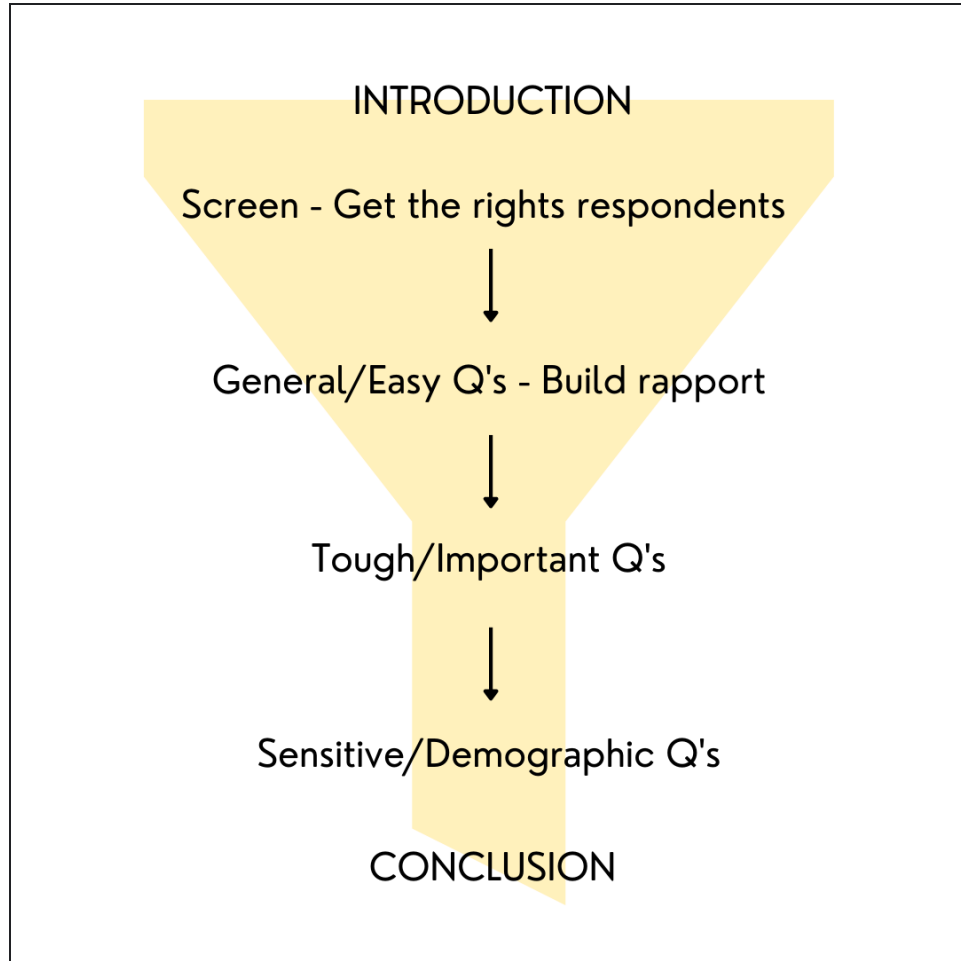


Figure 2. The funnel system helps students bring in and retain respondents. Follow this structure to ensure that your survey is completed by as many target respondents as possible.

2.4 - Can I hit the ground running with my clipboard now?

Before you send out your survey, make sure to go through a revision process with your research team or mentor. Start out by using this evaluation checklist:

- Do you have an introduction?
- Will the questions provide the desired research information?
- Is each question necessary?
- Is the survey too long?
- Do the questions follow the funnel approach?
- Is the appearance professional/branded?
- Is there enough space for open-ended questions?
- Are the instructions clear and capitalized?
- Do you have a conclusion?

Polishing the final draft may take time, especially if you must obtain approval first. Test the survey online, checking for screening and skip logic, as well as potential areas for misinterpretation and confusion.

3. Survey Implementation/Usage

3.1 - Who is going to take my survey?

Unfortunately, the work is not over quite yet. You still have to find people to take your now extremely-polished survey. To incentivize potential respondents, you can offer **monetary rewards or presents** (e.g., pens, pencils, and stickers). One way to fund these incentives is to apply to [research grants](#)!

Make sure your survey is as **easy to access as possible**. It can be emailed with a hyperlink (rather than asking people to copy and paste a URL) or linked in a social media post. If mailed, the survey should be self-addressed and stamped. As much as possible, **personalize the correspondence** with your potential respondents. Use personal letters, follow-up postcards, phone calls, and emails! If you are running low on time and resources to drum up respondents, consider a new research method to answer your central inquiry.

3.2 - Processing the fact that you're almost done – and the survey data itself

You can "finish" your survey after you reach a set number of responses or deadline. If you conducted the survey in-person or over the phone, make sure to set aside time to enter data into an analysis software. Once you have the survey data online, you begin the processing step.

If possible, **check the response time and answers** of each respondent. Did anybody finish your survey in significantly less time than you expected? Additionally, did you receive any **straight liners** (e.g. someone chooses the third option across all multiple choice questions)? These responses may be invalid.

Make sure that there are **no incomplete questionnaires**. All required questions should be answered by the respondents as much as possible. Remove answers that are **refusals to respond**, and note how many respondents demonstrate the tendency to answer favorably, unfavorably, or neutrally in all situations.

Work to **code the closed- and open-ended questions** wherein respondents author responses. The "code," or keywords you search for, may have been decided prior to data processing. Otherwise, you may read through the responses a predetermined number of times and set parameters for what words become keywords.

No matter what, the decisions you make while analyzing survey results should be detailed in the methods! These steps matter just as much as those you took to create the survey and reach respondents.

We hope this guide is helpful to you in your survey creation and implementation. Please send any questions to stemredefined@gmail.com and best of luck in your research!

