

Research Methodology

Consider using this as a guide when developing your research methodology.

1. Determine your research type: Qualitative or Quantitative.

Qualitative	Research Aspect	Quantitative
Searching to find answers about the way people think or feel (Subjective)	<i>Purpose</i>	Generating numerical data and hard facts using mathematical techniques (Objective)
Verbal	<i>Data</i>	Measurable
Observe and interpret	<i>Approach</i>	Measure and test
Interviews, discussions, observations, etc. (Free form)	<i>Methods</i>	Surveys, questionnaires, etc. (Structured)
Inductive (Collecting data and then constructing a theory to explain the findings)	<i>Reasoning</i>	Deductive (Testing a theory by collecting evidence to see if it is true)
What are the attitudes of educators in low income communities towards the push for the use of technology in their classrooms?	<i>Sample Research Question</i>	What is the difference between income and location amongst teenagers in California?

How to choose?

This depends on what you believe would best answer your research question as well as provide the best evidence for your research objectives.

Example:

You want to know the locations of the most popular study spaces on Macalester's campus, and why they are so popular.

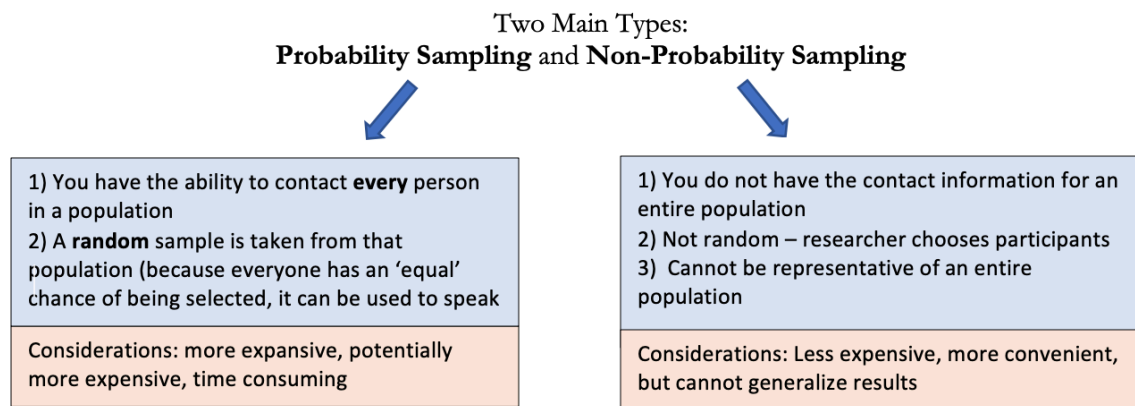
- To identify the most popular spaces, you might count the number of students studying in different locations at regular time intervals over a period of days or weeks.
 - This quantitative data would answer the question of how many people study at different locations on campus.
- To understand why certain locations are more popular than others, you might use a survey to ask students why they prefer these locations. This is qualitative data.

(Note: Researchers sometimes choose to incorporate both qualitative and quantitative data in their research since these methods provide different perspectives on the topic.)

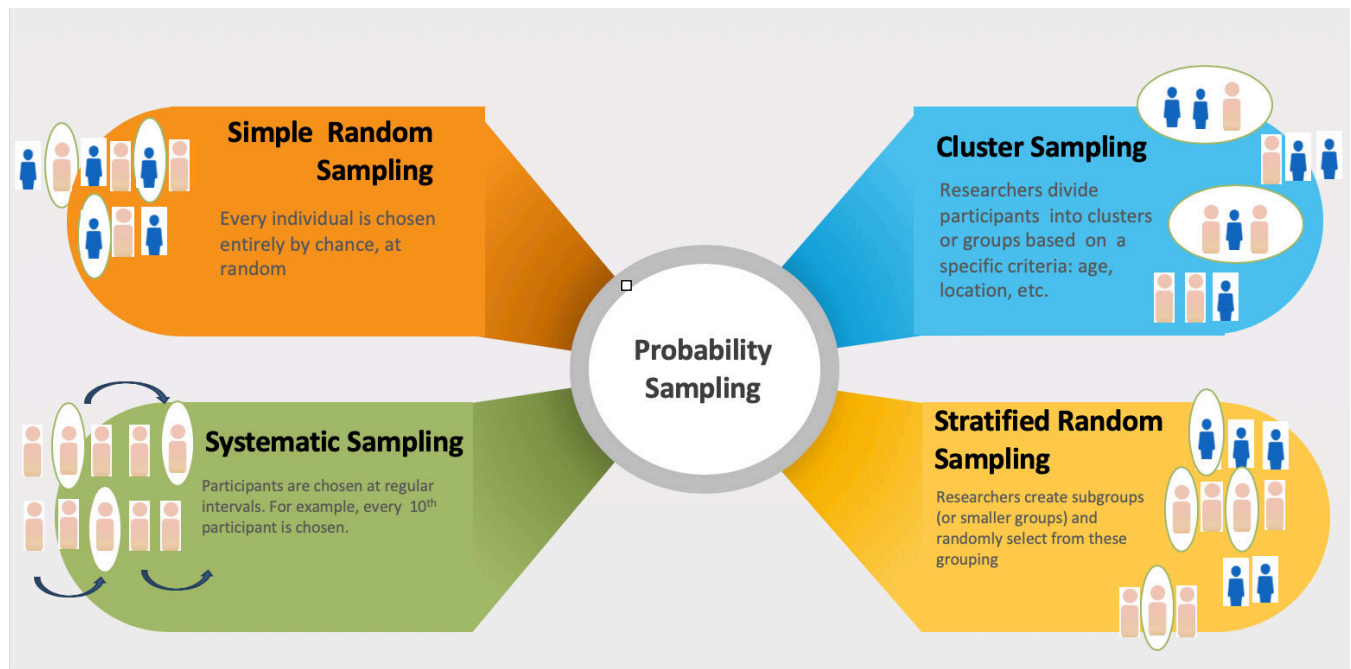
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2. Determine a sampling method.

A sampling method refers to the process of identifying a group of individuals that you will use as a sample group to then make inferences, and sometimes generalizations, for a larger population.

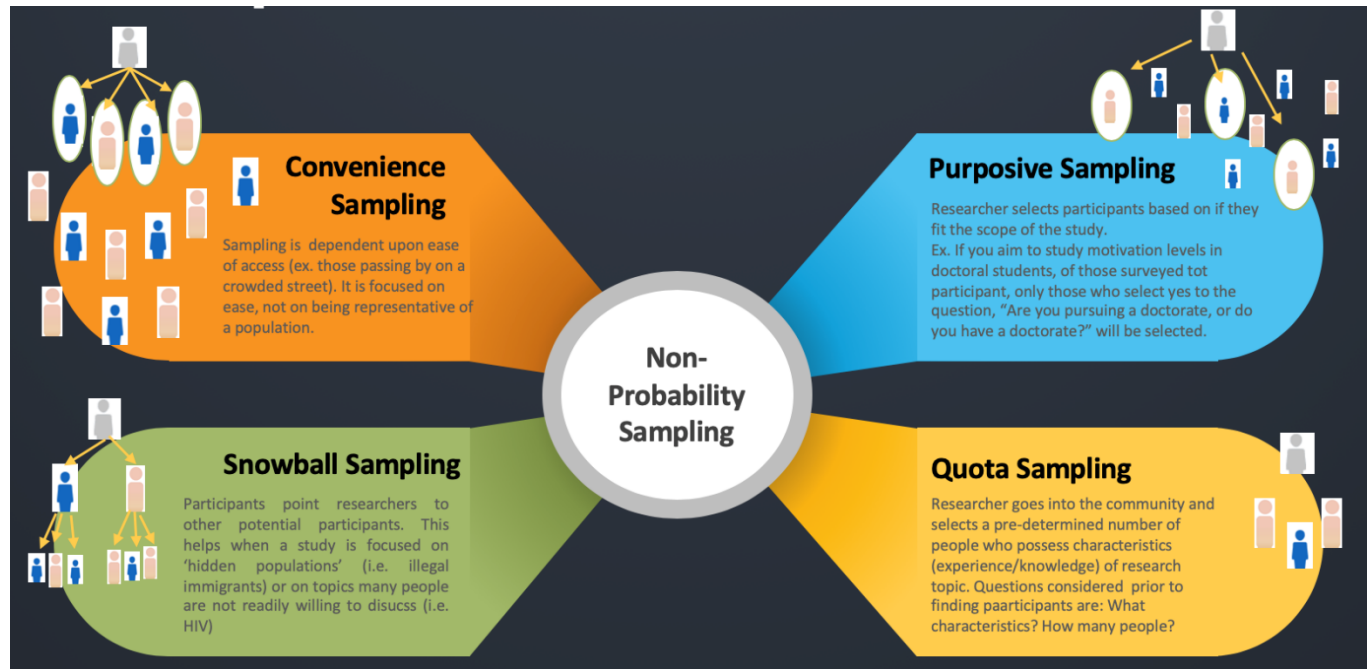


Probability Sampling Options (*Generally used with Quantitative Research*)



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Non-probability Sampling Options *(Generally used in Qualitative Research)*



3. Determine an instrument to collect data

Qualitative Options

Method	Explanation	Purpose	Data
Interviews	Researcher develops list of questions as a guideline. Conducted in person and is flexible.	Gain understanding of opinions/perspectives, experiences, or beliefs on a topic. Used when you require lengthy explanations.	Transcript of interview/Audio recording
Focus Group Discussions	Researcher acts as a facilitator and guides a discussion of 6-10 people.	Examination of social knowledge.	Transcript of discussion/Audio recording
Observations	Researcher becomes an observer and interacts in the lives of population being studied (participant observation)/Researcher observes from afar behaviors/actions (ethnographic)	Understand phenomena.	Detailed notes on interactions/video-recordings

Note: When selecting your instrument, take into consideration research ethics to protect your participants. This includes, but is not limited to, informed consent, anonymity/confidentiality, and long-term harm. Please see the [Research Ethics](#) resource for more information.

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Quantitative Options

Method	Explanation	Purpose	Data
Surveys/Questionnaires	<p>Researcher designs a document with close-ended questions. Questions can be:</p> <ol style="list-style-type: none"> 1- Categorical (yes/no; multiple choice; check-box questions) 2- Interval/ratio (rating-scale; Linkert scale; matrix questions) 	Objectively compiles large amounts of data.	Numerical data to analyze via results
Standardized Interviews	Researcher conducts structured interview where pre-determined set of close-ended questions are asked and nothing additional. It resemble survey-style question-and-answer formats as the researcher provides answer options to respondents.	Objectively compiles data while providing respondents with an opportunity to clarify any items that may be confusing.	Coding process or information is translated into %
Structured Observation	Researcher is observing only specific behaviors/actions in a controlled setting.	Quantify behaviors observed.	Video recording/Extensive notes
Document Review	Researcher analyzes documents (i.e. public records, personal documents, physical evidence) related to topic/research questions.	Practically and effectively gather data from the past.	Documents

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