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Research Methodology

Data Collection



UNIVERSITY
OF WOLLONGONG
AUSTRALIA

Contents

- What is data collection
- Why we need data collection
- Classification
- Methods to collect data



Why

- Our society is highly dependent on data, which underscores the importance of collecting it.
- Accurate data collection is necessary to make informed business decisions, ensure quality assurance, and keep research integrity.
- During data collection, the researchers must identify the data types, the sources of data, and what methods are being used.
- We will soon see that there are many different **data collection methods**. There is heavy reliance on data collection in research, commercial, and government fields.

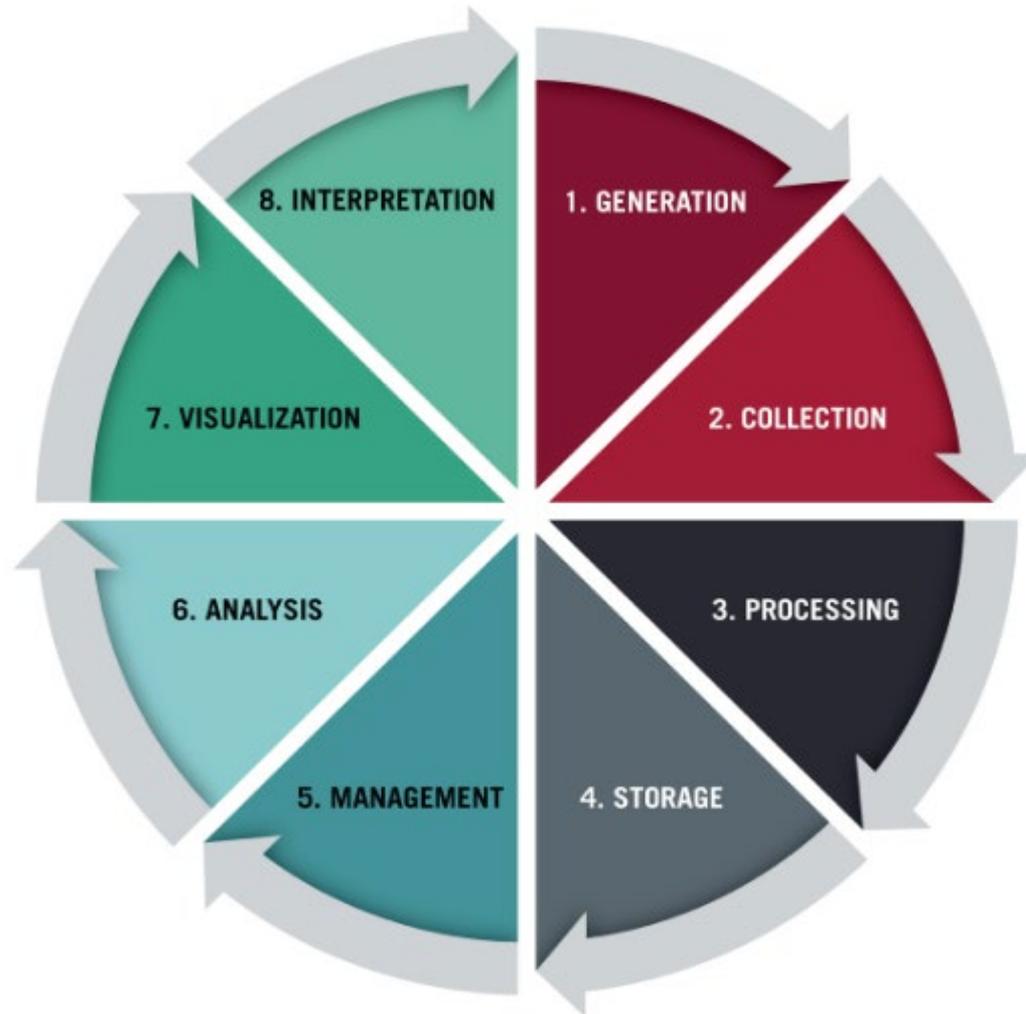


Significance of data collection

- **Integrity of the Research:** A key reason is to ensure the integrity of the research question is indeed maintained.
- **Reduce the likelihood of errors:** The correct use of appropriate data collection of methods reduces the likelihood of errors consistent with the results.
- **Decision Making:** To minimize the risk of errors in decision-making, it is important that accurate data is collected so that the researcher doesn't make uninformed decisions.
- **Save Cost and Time:** Data collection saves the researcher time and funds that would otherwise be misspent without a deeper understanding of the topic or subject matter.
- **To support a new idea, change, and innovation :**To prove the need for a change in the norm or the introduction of new information that will be widely accepted, it is important to collect data as evidence to support these claims.



Data life cycle



Before collecting data

- What's the goal or purpose of this research?
- What kinds of data are planning on gathering?
- The collection timeframe
- What methods and procedures will be used to collect, store, and process the information?



Category of data collection

- Techniques
- Methods
- Data types
- Data source

Two main methods...



Primary data collection

- As the name implies, this is original, first-hand data collected by the data researchers.
- This process is the initial information gathering step, performed before anyone carries out any further or related research. Primary data results are highly accurate provided the researcher collects the information.
- However, there's a downside, as first-hand research is potentially time-consuming and expensive.



Secondary

- Secondary data is second-hand data collected by other parties and already having undergone statistical analysis.
- This data is either information that the researcher has tasked other people to collect or information the researcher has looked up. Simply put, it's second-hand information.
- Second-hand data can add insight to a research project, and using secondary data is more efficient and less expensive than collecting primary data
- Although it's easier and cheaper to obtain than primary information, secondary information raises **concerns** regarding accuracy and authenticity. Quantitative data makes up a majority of secondary data.



Third-party data

- Third-party data, which is data that's been aggregated and rented or sold by organizations that don't have a connection to your company or users
- Several nonprofit and governmental entities specialize in collecting data to feed the efforts of other researchers.
- Research from public sources is usually free.



Comparison

- Although there are use cases for secondary and third-party data, first-party data is more valuable because you receive information about how your audience behaves, thinks, and feels—all from a trusted source.
- Sometimes primary data is unnecessary for a particular research goal. You should first determine whether or not your research questions have already been asked and answered. If so, you can devote your data collection budget to expand on what has already been determined through other unrelated projects.
- Comprehensively consider the time, costs, and the research question to choose the data adaptively.



Types of data

- Data can be qualitative (meaning contextual in nature, considering factors other than numerical values)
- Data can be quantitative (meaning numeric in nature, dealing with something that can be counted).
- Quantitative data is most likely to provide answers to questions such as who? when? where? what? and how many?
- Qualitative data is most likely to provide answers to questions such as “why?” and “how?”
- In general, questionnaires, surveys, and documents and records are quantitative, while interviews, focus groups and observations, are qualitative. There can also be crossover between the two methods
- Many data collection methods apply to either type, but some are better suited to one over the other.



Collecting Research Data

- Methods of data collection
 - by observation
 - by interviews
 - by focus groups
 - by survey
 - by experiments
 - by simulation
 - from existing available databases



Observations

- Observation method is a method under which data from the field is collected with the help of observation by the observer or by personally going to the field
- Observation involves collecting information without asking questions. This method is more subjective, as it requires the researcher, or observer, to add their judgment to the data.
- Observation has been characterised as the fundamental of all research methods.
- Observation includes both human activities and the physical settings in which such activities take place.
- Should be done in a systematical way, trying to get beyond personal impressions.



Advantages

- Subjective bias eliminated (no bias info, or minimal), if observation is done accurately
- Information researcher gets is what is currently happening; it is not complicated by either the past behaviour or future intentions or attitudes
- observation can determine the dynamics of a situation, which generally cannot be measured through other data collection techniques.
- Independent to respondent's willingness to respond and less demanding of active cooperation (like in interview or questionnaire method)
- Observation also can be combined with additional information



Disadvantages

- It is an expensive method (time requires more)
- The information provided is very limited
- Unforeseen factors may interfere with the observational task
- Respondents' opinion can not be recorded on certain subject



Structured and unstructured observation

- Structured observation (systemic observation): when observation is done by characterizing style of recording the observed information, standardized conditions of observation, definition of the units to be observed, selection of pertinent data of observation. (Appropriate for descriptive study)
- Unstructured observation: when observation is done without any thought before observation. (appropriate for exploratory study)



Controlled and uncontrolled observation

- Uncontrolled observation: when the observation takes place in natural condition. No attempt to use precision instruments. Aim to get a spontaneous picture of life and persons.
- Controlled observation: when the observation takes place according to definite pre-arranged plans, involving experimental procedure. Use precision instruments as aids to accuracy and standardisation. Normally carried out in a laboratory or under controlled condition.



Controlled Observation

- Controlled observation (usually a structured observation): likely to be carried out in a laboratory
- Researcher decides where the observation will take place, at what time, with which participants, in what circumstances and uses a standardized procedure.
- The researcher systematically classifies the behaviour into distinct categories (using coding), which can be easily counted and turned into statistics (for quantitative analysis)
- Controlled observations are usually overt, since the researcher explains the research aim to the group, so the participants know they are observed
- Controlled observations are also usually non-participant as the researcher avoids any direct contact with the group, keeping a distance.



Strengths

- Can be easily replicated by other researchers by using the same observation schedule
- Obtained data is easier and quicker to analyse as it is quantitative – making this a less time consuming method compared to naturalistic observations (below).
- Quick to conduct, so a large sample can be obtained resulting in the findings being representative and having the ability to be generalized to a large population

Limitations

- Can lack validity – when participants know they are being watched, they may act differently

Naturalistic observation (unstructured)

- Involve studying the spontaneous behaviour of participants in natural surrounding. The researcher simply records what they see in whatever way they can.

Strengths

- By being able to observe the flow of behaviour in its own setting, studies have greater ecological validity.
- Is often used to generate new ideas. Because it gives the researcher the opportunity to study the total situation it often suggests avenues of enquiry not thought before.



Limitations

- Often conducted on a small scale and may lack a representative sample (biased in relation to age, gender, social class or ethnicity). This may result in the findings lacking the ability to be generalised to wider society.
- Less reliable as other variables cannot be controlled. This makes difficult for other researchers to repeat the study in exactly the same way.
- Researcher needs to be trained to be able to recognize aspects of a situation that are psychologically significant and worth further attention.



Participant and non-participant observation

- Participant observation: when the observer is a member of the group which he is observing.
- Participant observations can be either covert or overt.
 - Covert is where the study is carried out 'under cover'. The researcher's real identity and purpose are kept concealed from the group being studied. The researcher takes a false identity and role, usually posing as a genuine member of the group.
 - Overt is where the researcher reveals his or her true identity and purpose to the group and asks permission to observe.
- Non-participant observation: when the observer is observing people without any attempt on his part to experience through participation what others feel.



Limitations

- Can be difficult to get time/privacy for recording. For example, with covert observations, researchers can't take notes openly as this would blow their cover. This means they have to wait until they are alone and rely on their memory. This is a problem as they may forget details and are unlikely to remember direct quotations.
- If the researcher becomes too involved they may lose objectivity and become biased. There is always the danger that they will "see" what they expect (or want) to see. This is a problem as they could selectively report information instead of noting everything they observe. Thus reducing the validity of their data.



Interviews

- The interview method of collecting data involves presentation of oral-verbal questions and reply in terms of oral-verbal responses.
- This method can be used through personal interviews and, if possible, through telephone interviews.



Interviews

- Interviewing is one of the most common and powerful ways that we try to understand fellow human beings.
- The most common forms of interviewing are
 - individual,
 - face-to-face group interchange,
 - mailed or
 - self-administrated questionnaires and telephone surveys.
- It can be structured, semi structured or unstructured



Unstructured Interview

- Unstructured interviews are characterised by a flexibility of approach to questioning.
- Sometimes referred as “discovery interview” or “informal interview”.
- Unstructured interviews do not follow a system of pre-determined questions and standardised techniques of recording information.
- The interviewer is allowed much greater freedom to ask, in case of need, supplementary questions or at times the interviewer may omit certain questions if the situation so requires.
- May even change the sequence of questions.



Strengths

- More flexible as questions can be adapted and changed depending on the respondents' answers.
- Generate qualitative data through the use of open questions. This allows the respondent to talk in some depth, choosing their own words. This helps researcher develop a real sense of a person's understanding of a situation.
- Increase validity because it gives the interviewer opportunity to probe for a deeper understanding, ask for clarification and allow the interviewee to steer the direction of the interview ...



Limitations

- Can be time consuming to conduct an unstructured interview and analyse the qualitative data
- Employing and training interviewers is expensive, and not as cheap as collecting data via questionnaires. For example, certain skills may be needed by the interviewer. They include the ability to establish rapport and knowing when to probe.



Structured Interview

- Use of a set of predetermined questions and of highly standardised techniques of recording.
- The interviewer in a structured interview follows a rigid procedure laid, asking questions in a form and order prescribed.
- The questions are closes-ended.



Strengths

- Easy to replicate as a fixed set of closed questions are used, which are easy to quantify – it is easy to test for reliability
- Fairly quick to conduct – many interviews can take place within a short amount of time. Hence a large sample can be obtained resulting in the findings being representative and having the ability to be generalized to a large population.

Limitations

- Not flexible: new questions cannot be asked
- Lack detail as only closed questions are asked, which generates quantitative data. Hence a researcher will not know why a person behaves in a certain way.



Semi-structured interviews

- Commonly used in qualitative research.
- In this type of interview, the researcher wants to know specific information which can be compared and contrasted with information gained in other interviews.
 - To do this, the same questions need to be asked in each interview.
 - Might want the interview to remain flexible so that other important information can still arise.
- For this type of interview, the researcher produces an interview schedule.
 - This may be a list of specific questions or a list of topics to be discussed.
 - Not all questions are designed and phrased ahead of time. The majority of questions are created during the interview, allowing both the interviewer and the person being interviewed the flexibility to probe for details or discuss issues.
 - In some research, such as a grounded theory study, the schedule is updated and revised after each interview to include more topics which have arisen as a result of the previous interview.

Focus Groups

- A focus group is simply a group interview of people who all have something in common.
- Focus groups may be called discussion groups or group interviews. A number of people are asked to come together in a group to discuss a certain issue.
- They provide the same type of data as in-person interviews, but add a social element and offer a broader understanding of why a group thinks or behaves in a particular way.
- Focus groups are useful when examining complex issues.



Focus Groups

- The discussion is led by a moderator or facilitator who
 - introduces the topic,
 - asks specific questions,
 - controls digressions, and
 - stops break-away conversations.
- No one person dominates the discussion, trying to ensure that each of the participants makes a contribution.



Strengths

- Group interviews generate qualitative data through the use of open questions. This allows the respondents to talk in some depth, choosing their own words. This helps the researcher develop a real sense of a person's understanding of a situation.
- They also increase validity because some participants may feel more comfortable being with others as they are used to talking in groups in real life.



Limitations

- The researcher must ensure that they keep all the interviewees details confidential and respect their privacy. This is difficult when using a group interview. For example, the researcher cannot guarantee that the other people in the group will keep information private.
- Group interviews are less reliable as they use open questions and may deviate from the interview schedule making them difficult to repeat.
- Sometimes lack of validity as participants may lie to impress the other group members. They may conform to peer pressure and give false answers.
- “group think,” or the potential for the group to be dominated by one or two participants.
- can be time-consuming and difficult, and require a leader who is skilled at creating a relaxed environment

Questionnaires & surveys

- There are three basic types of questionnaire
 - closed-ended,
 - open-ended or
 - a combination of both.
- Data gathered from questionnaires and surveys can be analyzed in many different ways. You can assign numerical values to the data to speed up the analysis. This can be useful if you're collecting a large amount of data from a large population
- To be meaningful, surveys and questionnaires need to be carefully planned.
- Surveys are often less expensive than interviews, they won't be valuable if they aren't handled correctly.



Closed-ended questionnaires

- Closed-ended questions structure the answer by only allowing responses which fit into pre-decided categories.
- These questionnaires follow a set format
 - most can be scanned straight into a computer for ease of analysis
- This type of questionnaire can be used to generate statistics in quantitative research.



Strengths

- They can be economical: they can provide large amounts of research data for relatively low costs. Therefore, a large sample size can be obtained which should be representative of the population.
- Data can be easily converted into quantitative data (count the number of 'yes' or 'no' answers), allowing statistical analysis of the responses.
- The questions are standardized. All respondents are asked exactly the same questions in the same order, hence a questionnaire can be replicated easily to check for reliability. Therefore a second researcher can use the questionnaire to check the results are consistent.



Limitations

- They lack detail. Because the responses are fixed, there is less scope for respondents to supply answers which reflect their true feelings on a topic.



Open-ended questionnaires

- Open-ended questionnaires are used in qualitative research, although some researchers will quantify the answers during the analysis stage.
- The questionnaire does not contain boxes to tick, but instead leaves a blank section for the respondent to write in an answer.
- Open-ended questionnaires might be used to find out what people think about a service.

Strengths

- Rich qualitative data is obtained. The research can find out why a person holds a certain attitude.

Limitations

- Time-consuming to collect the data. It takes longer for the respondent to complete open questions. This is a problem as a smaller sample size may be obtained.
- Time-consuming to analyse the data. It takes longer for the researcher to analyse qualitative data as they have to read the answers and try to put them into categories by coding, which is often subjective and difficult.
- No suitable for less educated respondents as open questions require superior writing skills and a better ability to express one's feelings verbally.



Combination of both

- Combination of both open and closed questions.
 - It is possible to find out how many people use a service and what they think about that service on the same form.
 - Many questionnaires begin with a series of closed questions, with boxes to tick or scales to rank, and then finish with a section of open questions for more detailed response.



ADVANTAGES AND DISADVANTAGES

OPEN QUESTIONS	CLOSED QUESTIONS
Tend to be slower to administer.	Tend to be quicker to administer.
Can be harder to record responses.	Often easier and quicker for the researcher to record responses.
May be difficult to code, especially if multiple answers are given.	Tend to be easy to code.
Do not stifle response.	Respondents can only answer in a predefined way.
Enable respondents to raise new issues.	New issues cannot be raised.
Respondents tend to feel that they have been able to speak their mind.	Respondents can only answer in a way which may not match their actual opinion and may, therefore, become frustrated.



<p>In self-administered questionnaires, respondents might not be willing to write a long answer and decide to leave the question blank. How do you know the meaning of a blank answer when you come to the analysis?</p>	<p>Is quick and easy for respondents to tick boxes – might be more likely to answer all the questions.</p>
<p>Can use open questions to find out all the possible responses before designing a closed-ended questionnaire.</p>	<p>Can include a section at the end of a closed-ended questionnaire for people to write in a longer response if they wish.</p>



How to Prepare Questionnaires

- Wording and structure of questions
 - Questions should be kept short and simple.
 - Check if two questions in one.
 - If it is, ask two questions rather than one.
 - Also, avoid negative questions – the type which have ‘not’ in them as this can be confusing, especially when a respondent is asked to agree or disagree.



How to Prepare Questionnaires

- Some issues may be very sensitive and you might be better asking an indirect question rather than a direct question.
- Promising confidentiality and anonymity may help, but many respondents can, understandably, be sceptical about these promises.
- If you ask an indirect question in which respondents can relate their answer to other people, they may be more willing to answer the question.



How to Prepare Questionnaires

- Using closed-ended questions
- If you are constructing a closed-ended question, try to make sure that all possible answers are covered.
- This is particularly important for time and frequency questions such as ‘how often do you . . .’
 - You need to make sure that all the frequencies are covered so that respondents will not tick a box which isn’t right for them.
- Make sure that you don’t artificially create opinions by asking someone a question about which they don’t know, or don’t care.
 - You need to make sure that you include a ‘don’t know’ category in this case.



How to Prepare Questionnaires

- Don't ask leading questions. The question 'How often do you wash your car?' might seem innocuous enough.
 - However, it makes two assumptions.
 - Firstly, it assumes that the respondent has a car and
 - secondly, it assumes the respondent washes his car. It could be considered a bias question.
 - Would a respondent feel bad if they didn't have a car and therefore would tick 'four times a week' anyway? Would they feel bad if they don't ever wash their car but feel the researcher expects them to?
 - If you need to ask this question, you should ask a filter question first to find out whether the respondent actually owned a car.
 - Then you would need to ask: 'If you wash your car, how many times a year?' By wording the question in this way and by being careful about the frequency list, you're not leading the respondent into answering in a certain way.

Steps to design a questionnaire:

1. Write out the primary and secondary aims of your study.
2. Write out concepts/information to be collected that relates to these aims.
3. Review the current literature to identify already validated questionnaires that measure your specific area of interest.
4. Compose a draft of your questionnaire.
5. Revise the draft.
6. Assemble the final questionnaire.



Step 1: Define the aims of the study

- Write out the problem and primary and secondary aims using **one** sentence per aim. Formulate a plan for the statistical analysis of each aim.
- Make sure to define the target population in your aim(s).



Step 2: Define the variables to be collected

- Write a detailed list of the information to be collected and the concepts to be measured in the study. Are you trying to identify:
 - Attitudes
 - Needs
 - Behavior
 - Demographics
 - Some combination of these concepts
- Translate these concepts into variables that can be **measured**.
- Define the role of each variable in the statistical analysis:
 - Predictor
 - Confounder
 - Outcome



Step 3: Review the literature

- Review current literature to identify related surveys and data collection instruments that have measured concepts similar to those related to your study's aims.
- Saves development time and allows for comparison with other studies if used appropriately.
- Proceed with caution if using only a subset of an existing questionnaire as this may change the meaning of the scores. Contact the authors of the questionnaire to determine if a smaller version of the instrument exists that has also been validated.



Step 4: Compose a draft [1]:

- Determine the mode of survey administration: face-to-face interviews, telephone interviews, self-completed questionnaires, computer-assisted approaches.
- Write more questions than will be included in the final draft.
- Format the draft as if it were the final version with appropriate white space to get an accurate estimate as to its length – longer questionnaires reduce the response rate.
- Place the most important items in the first half of the questionnaire to increase response on the important measures even in partially completed surveys.
- Make sure questions flow naturally from one to another.



Compose a draft [2]:

- Question: How many cups of coffee or tea do you drink in a day?
- Principle: Ask for an answer in only one dimension.
- Solution: Separate the question into two –
 - (1) How many cups of coffee do you drink during a typical day?
 - (2) How many cups of tea do you drink during a typical day?



Compose a draft [3]:

- Question: What brand of computer do you own?
 - (A) IBM PC
 - (B) Apple
- Principle: Avoid hidden assumptions. Make sure to accommodate all possible answers.
- Solution:
 - (1) Make each response a separate dichotomous item
 - Do you own an IBM PC? (Circle: Yes or No)
 - Do you own an Apple computer? (Circle: Yes or No)
 - (2) Add necessary response categories and allow for multiple responses.
 - What brand of computer do you own? (Circle all that apply)
 - Do not own computer
 - IBM PC
 - Apple
 - Other



Compose a draft [4]:

- Question: Have you had pain in the last week?
 Never Seldom Often Very often
- Principle: Make sure question and answer options match.
- Solution: Reword either question or answer to match.
 - How often have you had pain in the last week?
 Never Seldom Often Very Often



Compose a draft [5]:

- Question: Where did you grow up?
 - Country
 - Farm
 - City
- Principle: Avoid questions having non-mutually exclusive answers.
- Solution: Design the question with mutually exclusive options.
 - Where did you grow up?
 - House in the country
 - Farm in the country
 - City



Compose a draft [6]:

- Question: Are you against drug abuse? (Circle: Yes or No)
- Principle: Write questions that will produce variability in the responses.
- Solution: Eliminate the question.



Compose a draft [7]:

- Question: Which one of the following do you think increases a person's chance of having a heart attack the most? (Check one.)
 Smoking Being overweight Stress
- Principle: Encourage the respondent to consider each possible response to avoid the uncertainty of whether a missing item may represent either an answer that does not apply or an overlooked item.
- Solution: Which of the following increases the chance of having a heart attack?
 - Smoking: Yes No Don't know
 - Being overweight: Yes No Don't know
 - Stress: Yes No Don't know



Compose a draft [8]:

- Question:
 - (1) Do you currently have a life insurance policy? (Circle: Yes or No)
 - If no, go to question 3.
 - (2) How much is your annual life insurance premium?
- Principle: Avoid branching as much as possible to avoid confusing respondents.
- Solution: If possible, write as one question.
 - How much did you spend last year for life insurance? (Write 0 if none).



Step 5: Revise

- Shorten the set of questions for the study. If a question does not address one of your aims, discard it.
- Refine the questions included and their wording by testing them with a variety of respondents.
 - Ensure the flow is natural.
 - Verify that terms and concepts are familiar and easy to understand for your target audience.
 - Keep recall to a minimum and focus on the recent past.



Step 6: Assemble the final questionnaire

[1]:

- Decide whether you will format the questionnaire yourself or use computer-based programs for assistance:
 - SurveyMonkey.com
 - Adobe Live Cycle Designer 7.0
- At the top, clearly state:
 - The purpose of the study
 - How the data will be used
 - Instructions on how to fill out the questionnaire
 - Your policy on confidentiality
- Include identifying data on each page of a multi-page, paper-based questionnaire such as a respondent ID number in case the pages separate.



Assemble the final questionnaire [2]:

- Group questions concerning major subject areas together and introduce them by heading or short descriptive statements.
- Order questions in order to stimulate recall.
- Order and format questions to ensure unbiased and balanced results.



Assemble the final questionnaire [3]:

- Include white space to make answers clear and to help increase response rate.
- Space response scales widely enough so that it is easy to circle or check the correct answer without the mark accidentally including the answer above or below.
 - Open-ended questions: the space for the response should be big enough to allow respondents with large handwriting to write comfortably in the space.
 - Closed-ended questions: line up answers vertically and precede them with boxes or brackets to check, or by numbers to circle, rather than open blanks.
- Use larger font size (e.g., 14) and high contrast (black on white).



Enhance response rate

- When writing questions and assembling the final questionnaire, edit with a view towards saliency: apparent relevance, importance, and interest of the survey to the respondent
- Consider either pre-notifying those in your sample or sending reminders to those who received the survey (if self-administered). Studies have shown that making contact with the sampled individuals increases the response rate.
- If possible, offer an incentive.



Non-responders

- Understanding the characteristics of those who did not respond to the survey is important to quantify what, if any, bias exists in the results.
- To quantify the characteristics of the non-responders to postal surveys, Moser and Kalton suggest tracking the length of time it takes for surveys to be returned. Those who take the longest to return the survey are most like the non-responders. This result may be situation-dependent.



Questionnaire design checklist

- Make your questionnaire as short as possible.
- Make sure people will be able to answer your questions.
- Don't assume knowledge or make it seem that you expect a certain level of knowledge by the way your questions are worded.
- Start with easy to answer questions. Keep complex questions for the end.
- Ask for personal information at the end.
- Use a mix of question formats.
- Don't cause offence, frustration, sadness or anger.



Questionnaire design checklist

- Avoid words with emotional connotations.
- Avoid negative questions.
- Avoid technical words.
- Avoid words with multiple meanings.
- Avoid leading questions.
- Avoid vague words such as 'often' and 'sometimes'.
- Provide all possible responses in a closed question.
- Consider as many alternatives as possible.
- Use specific time frames when asking about behaviour.
- Use specific place frames, e.g. 'In which country were you born?'



Summary

- You need plenty of **time**
 - Design your questionnaire from research hypotheses that have been carefully studied and thought out.
 - Discuss the research problem with colleagues and subject matter experts is critical to developing good questions.
 - Review, revise and test the questions on an iterative basis.
 - Examine the questionnaire as a whole for flow and presentation.



Displaying Qualitative Data

- Narrating participants' words
- Tabular, graphic, pictorial representation



Narrating Participants' Words

- Interspersing quoted passages within selected paragraphs
 - Short passages
 - Together with author's own understanding

Shirley and the others were preparing for bed. “*Don't forget to wash up,*” said Gretchen [one of the staff persons at the shelter]. Shirley exploded, “*I'm 53 years old!*” she shouted. “*I have children older than you, and I don't need you to tell me to wash up before going to bed.*” Having gotten started, Shirley couldn't stop. She denounced Gretchen and the shelter staff for purposely demeaning the women as part of their effort to control them, and continued along these lines until—perhaps to force them to prove her point—she was expelled for the night.



Narrating Participants' Words

- Using lengthier presentations, covering multiple paragraphs
 - A special case
 - A meaningful scene
 - In-depth material

VIGNETTE 10.1. COLLECTING IN-DEPTH MATERIAL ABOUT A SUBGROUP OF PEOPLE IN A STUDY

A study by Hochschild (1989) shows how the people in a study were covered at two different levels of intensity.

For a larger group of 50 couples, the author or her assistant conducted interviews of about 2 hours each. For a smaller group of 12 couples, the author herself also made in-depth observations of their household relationships and practices, held more extensive conversations, and collected much more data about the 12 couples.

As a result, the study's findings were based on a modest-sized group (50 couples), but key issues could be covered in greater depth based on the 12 couples studied more intensively. Information about each of the 12 couples covers significant portions of the individual chapters of the book.

This dual pattern, involving two different levels of information about two different-sized groups, can strike the desired balance between the need to cover both the breadth and depth of an issue.

Tables and Lists

- Tables represent two dimensions in usual: rows and columns
- A list is a one-column version of a table

EXHIBIT 10.1. THREE MODES FOR DISPLAYING QUALITATIVE DATA

Type of display	Illustrative example
<i>Word tables and lists</i>	<ul style="list-style-type: none">• Summary of findings, placed into a matrix of rows and columns• Chronology• Aggregate characteristics of people studied or interviewed• List of individual people in a study and their <i>study characteristics</i> (not necessarily routine demographic characteristics)
<i>Graphics</i>	<ul style="list-style-type: none">• Geographic map; census tract map• Spatial layout of a study area• Hierarchical chart (e.g., organization chart)• Flowchart (e.g., sequence of events over a time line)• Family trees and other schemes
<i>Pictures</i>	<ul style="list-style-type: none">• Photographs• Reproductions (e.g., of artwork or of others' drawings or pictures)

Graphics

- Maps, photographs
- Visualize numerical numbers by using curves, histogram, pie chart, scatter, and etc.
- Visualize concepts and terms by using the process flow diagram, hieratical diagram, and etc.
- To represent your data or concepts clearly and precisely.

