



METHODS OF DATA COLLECTION

*By Shivangi Dwivedi
Student of Research, Department of law,
Amity University, Lucknow Campus, Uttar
Pradesh*

*By Dr. Arvind Kumar Singh
Assistant Professor,
Department of law, Amity University,
Lucknow Campus, Uttar Pradesh*

ABSTRACT:

Method of collecting data is a brief summary of the main points covered in this paper on data collection in a research paper, thesis, or dissertation. It provides readers with an overview of the methods used to collect data, including the sampling method, method of interview and their step and procedures used to collect and manage data. Ways of collecting data typically begins with a brief statement of the concept of data collection. Also, in this describe about sorts of information, considerations to consider when gathering data method main data gathering in these ways section there is explanation covered about Questionnaires, interviews, observation and Shamble techniques. In last section there is detailed about Tabulation of collection Data. At last, very informative conclusion about this paper.

Keyword: Research paper, Questionnaires, Interview, collect data, Techniques.

CONCEPT OF DATA COLLECTION

Information gathering is the process of

obtaining and analyzing relevant variable a planned's information, methodical procedure through arrange to answer particular investigation questions, examine ideas, then analyze findings. Gathering information is a common element of investigation from many educational disciplines, particularly its humanities, the social sciences, and the physiological and natural sciences. Although methods diverge besides restraint and focus is always placed on fixed correctly then truthful gathering. The aim of whatever information gathering would be to obtain actual evidence may be used to carefully examine the information and develop a convincing argument answering to a particular question. credibility of investigation (subjective, quantifiable). Whenever the right information gathering techniques are applied, mistakes are much less probable (regardless of whether they're currently existing, new versions of existing, or product one) information collect is the very essential steps of doing an investigation project. One's contract is discharged notwithstanding the best research layout there in universe unless users will be unable to collect the primary information. that takes careful planning, effort, patience, forbearance, and many more qualities to be able to complete the work of gathering data properly. The initial step in data collection, identifying the type of data needed, is followed by the selection of a sample from a particular population. Afterwards, a particular instrument must be used to collect the information from of the sample selected.

DATA TYPES

There data are many types, but they may be broadly categorized the two mainways:



1. **Numerical data:** This type of data is expressed in numerical terms and is used to measure or count things. It can further be classified as discrete or continuous data. Discrete data consists of whole numbers, like the quantity of students or the quantity of autos sold in a month. Continuous data, like temperature, height, or weight, can have any value within a range.

The most popular qualitative evaluative approaches can be categorized into three main categories.

- a. Detailed discussion
- b. Observation methods
- c. Review of the documents.

2. **Qualitative data:** This kind of data is descriptive and does not need numbers to describe itself. It is employed to describe traits, viewpoints, or actions. Quality information can be further classified as nominal or ordinal data. Nominal data consists of categories or labels, such as gender or race. Ordinal data consists of categories that can be ordered or ranked, such as levels of education or income.

Explanations of popular quantifiable information selection techniques are:

- a. Tests and clinical trials.
 - b. Paying attention to and recording precisely outlined occasions (e.g., counting then the number of a patient's waiting in the emergency at specified times of the day). finding pertinent data in systems for managing information.
 - c. Using shuttered questions in investigations (e.g., checks person or phone interviews, surveys etc.). Compared to qualitative interviews and study are much

more regimented in quantitative (survey) investigation. Then researcher just presents then prepared a series of inquiries during a formal interview. The researcher has the distinct benefit of being capable of getting to know research respondents personally and secure their cooperation via face-to-face interviews.

An investigator can keep both cash by, and time sending paper-and-pencil surveys to a sizable group of responses. Persons tend to Respond with more candor. to questions about attentive topics in particular because the questionnaires are anonymous.

Other types of data include:

- 3. **Time series data:** This type of data is collected over time and is used to track changes or trends. Examples include stock prices or weather patterns.
- 4. **Spatial data:** This type of data is used to describe the physical location or geography of objects or phenomena. Examples include maps or satellite images.
- 5. **Text data:** This type of data is in the form of words or sentences and is used to analyze language or sentiment. Examples include customer reviews or social media posts.
- 6. **Multimedia data:** This type of data includes images, videos, and audio files and is used to analyze patterns or trends in visual or auditory information. Examples include surveillance footage or music streaming data.

Factors to take into account for data collection and research standards

There are many issues to consider when collecting data for research. These include:

- 1. **Ethics:** Researchers should ensure that their



study does not harm participants physically or emotionally. Informed consent should be obtained from all participants, and they should be fully aware of the dangers and advantages of taking part in the study.

2. **Sampling:** Researchers should carefully select a representative sample of participants that accurately reflects the population they are studying. Bias should be minimized when performing the sampling, and the instance size should be appropriate for the research question.
 3. **Reliability:** Data collection methods should be reliable, meaning that they should yield consistent results if repeated. Researchers should take steps to ensure that their measurements are accurate and precise.
 4. **Validity:** Data collection methods should be valid, meaning that they should measure what they are intended to measure. Researchers should ensure that their measurements are meaningful and relevant to their research question.
 5. **Data privacy and security:** Investigators ought to take precautions to safeguard the privacy and security of the users' information. This includes ensuring your data kept safely and solely accessed by authorized personnel.
- Bias:** Researchers should be aware of their own biases and take steps to minimize them. This includes using objective measures and avoiding leading questions.

There are also several norms in research that should be followed, including:

1. **Honesty:** Researchers should be honest about their methods and findings, and they should not manipulate or fabricate data.
2. **Objectivity:** Researchers should strive to be objective and unbiased in their research, regardless of their personal beliefs or

preferences.

3. **Transparency:** Researchers should be transparent about their methods and findings, and they should share their data with others for review and replication.
4. **Respect for people:** Investigators must guarantee that their research does not in any way damage or exploit individuals, and they should treat them with dignity and respect.
5. **Collaboration:** Researchers should collaborate with others in their field and share their findings to advance knowledge and understanding.

Subsequent Information Gathering Methods.

During primary information gathering, we gather the information by you utilizing both Qualitative as well as quantitative approaches. Then most crucial thing to keep in mind does that, because the information you gather is specific to you as well as his investigation, no one else will have access to it until you publish. There are numerous techniques to obtain primary data. The main methods include –

- I. Survey question
- II. Surveys
- III. Inspection
- IV. Questionnaire
- V. Depth case
- VI. Journals
- VII. Action Sampling Method
- VIII. Time and motion studies
- IX. Process studies
- X. Link Analyses

PUBLIC SURVEY

The survey is a specific sort of tool for research that is used for data collection



from participants by posing a series of question to them and providing them with further information prompts. Although this is frequently the case, they are usually not intended to responsive data study. Sir Francis Galton the author of the public survey (1822 - 1911). Questionnaires are less intrusive than certain other survey formats because highly beneficial as they are not as expensive, required less work surveys conducted over the phone or verbally from respondents are often include standardized responses can make data collection easy. with surveys in general, including people surveys, there are a number of issues with question design and phrasing.

STEPS IN CONSTRUCTING QUESTIONNAIRE

Constructing a questionnaire is a key step in primary data collection through surveys. Here are the steps in constructing a questionnaire:

1. **Define the research question:** Clearly Describe the study's goal or question that the questionnaire is meant to answer. This will aid in directing the creation of the questionnaire ensure that questions are relevant and useful.
2. **Determine the type of questions:** Decide on the the kind of inquiries that will be asked in the survey. Open-ended queries are one type of query., closed- ended, rating scales, and multiple-choice questions.
3. **Brainstorm and draft questions:** Brainstorm questions that are pertinent to the study question furthermore draft them in a logical command. Start with general questions before moving to more only ones.
4. **Pilot test the questionnaire:** Test an

examination on a small sample of the population to recognize any problems or issues with the questions, the wording, or the order. This will help refine the questionnaire and improve the quality of the data collected.

5. **Revise the questionnaire:** Based on the feedback received from the pilot test, revise and refine the questionnaire to ensure that it is clear, concise, and easy to understand.
6. **Format the questionnaire:** Format the questionnaire to make it visually appealing and easy to read. Use appropriate fonts, colors, and spacing.
7. **Include instructions and demographic questions:** Include clear instructions on how to complete the questionnaire and demographic questions to help characterize the sample population.
8. **Review and finalize:** Review the questionnaire carefully to ensure that it is free from errors, inconsistencies, and bias. Once finalized, the questionnaire can be distributed to the target population for data collection.

By following these steps, a well-designed and effective questionnaire can be created for collecting primary data.

ADVANTAGES OF QUESTIONNAIRES:

- One benefit of questionnaires is that they make it possible to quickly and reasonably cheaply gather huge volumes of data from a large number of responders.
- o the researcher can examine its validity and dependability. alone or with little effect by a large number of people.
- o the questionnaire's results can often either be measured by a scholar or a piece using programs. with speed and ease.



- o Is able to be assessed with greater objectivity and scientific rigor than other sorts of research.
- o Quantified data useful for comparing and contrasting it with others academics well as to measure change.
- The following are problems with the questionnaire:
- The following are questionnaire's drawbacks:
 - Lacking the ability to understand some informational nuances, such emotional shifts, behavior, sentiments, etc.
 - According Because quantitative research just needs a little amount of information without rationale, it is only an artificial creation of the researcher in the eyes of phenomenologists.
 - It impossible to assess the sincerity of a respondent.
 - This is impossible to gauge the respondent's level of thought.
 - The speaker could be forgetful or not be taking anything into account. Due to the possibility that different people would interpret each question differently and give different answers, there is a certain amount of subjectivity that is not acknowledged. For example, what is "great" to one person may be "awful" to another.

1. Structured interviews: In interview schedule, questions are asked in a predetermined sequence. The questions usually closed- ended or multiple- choice questions. Structured interviews are useful for collecting quantitative data that can be easily analyzed and compared across respondents.
2. Unstructured interviews: Unstructured interviews involve having a more open-ended conversation with the respondent, allowing them to guide the conversation and express their opinions and experiences in their own words. Unstructured interviews are useful for collecting qualitative data that can provide more in-depth insights into the respondent's experiences and perspectives.

The steps involved in conducting an interview include:

1. Preparation: Before conducting an interview, the interviewer should Make a list. of questions or subjects to cover, along with any necessary equipment, such as a recorder or notepad.
2. Introduction: The interviewer should introduce themselves and explain the purpose of the interview to the respondent. They should also explain how the information will be used and assure the respondent of confidentiality.
3. Questions: The interviewer should ask the questions in a clear and concise manner, allowing the respondent to answer in their own words. They should also be prepared to follow up on any answers with further questions to clarify or expand on the respondent's answer. Closing: The interviewer should thank the respondent for their time and participation, and provide them with any necessary follow-up information or contact information.

INTERVIEWS METHOD

Interviews are a method of primary data collection that involve having a conversation with someone to gather information Examinations can be carried out in-person, via phone, or through a video conference. Two main types of interviews are as follows:



Interviews can be a valuable method of data collection, providing insights into the experiences and perspectives of respondents. However, they can also be time-consuming and require skilled interviewers to ensure the veracity and dependability of the information gathered.

OBSERVATIONAL WAYS

Observational ways a type of collect information methodology that entails watching the behavior and documenting it., activities, or phenomena of people or teams in a natural environment, without manipulating or controlling the variables being studied. Observational method is commonly used in social sciences, psychology, and anthropology, and can be conducted in different settings such as homes, classrooms, public spaces, workplaces, and natural environments.

Three main types of observational methods:

1. Participant observation: Being a member of the group or community being observed and taking part in their activities is known as participant observation. while taking notes or recording observations. This type of observation allows for a deeper understanding of the culture and norms of the group being observed, but can raise ethical concerns about the researcher's role and potential impact on the group being studied.

Non-participant observation: When a researcher observes a group or individual without actively take part in their actions, non-participant observation is what it is called. Observation of this nature. This type

of observation allows for a many objective and unbiased view of the behavior being studied, but may limit the Scholar's comprehension of its context and meaning of its observed behavior.

1. Organizing your observation: Structured observation utilizes for the researcher a pre-determined a group of categories or behaviors to record observations of the individuals or groups being studied. This type of observation allows for systematic and quantitative data collection, but may limit the capacity of researcher to capture the complexity or nuances of the observed behavior.

The steps involved in conducting an observational study include:

1. Planning and preparation: Before conducting the observation, the researcher should determine the research question or hypothesis, select the appropriate type of observational method, and develop a plan for data collection and analysis.
2. Data collection: The researcher should observe and record the behavior or activities of the individuals or groups being studied, either through written notes, audio or video recording, or other methods.
3. Primary data: The researcher needs to examine the information gathered., looking for patterns, trends, and themes in the behavior or activities observed.
4. Reporting: The researcher should report their findings, either in written or verbal form, and draw conclusions and recommendations based on the data collected.

Observational method can provide valuable



insights into human behavior and social phenomena, but it also has drawbacks, including the possibility of observer bias and the challenge of extrapolating results to different groups or circumstances. As a result, it is frequently used with other research approaches that can give a more thorough grasp of the phenomenon being examined.

SAMPLE SELECTION METHODS

To sample means to select certain individuals or groups from a wider population in order to conduct research or collect data. The nature of sampling refers to the characteristics of the sample and the methods used to choose it. There are two main categories of sampling:

Probability sampling: With probability sampling, each Anyone in the public has an equal and known probability of being chosen for the sample. Whenever sample of this kind is necessary, research requires a representative sample that can be generalized to the larger population. Simple random stratified sampling random as well as testing cluster samplings were typical varieties of probability measuring.

1. Non-probability sampling is a sampling technique where the results are not based on probability. selection of individuals or units is not according to a random method. This type of measuring is used when the research does not require a representative sample and the focus is on specific characteristics of the population. Common Convenience sampling, purposeful Examples of non-probability sampling methods include sample and snowballing. The nature of the sample size, or overall

quantity of individuals or units chosen for the sample, might also have an impact on sampling. Although a bigger sample size typically improves the sample's reliability and representativeness, it may also raise the cost and duration of the data gathering and analysis process. Another aspect of the nature of sampling is the frame for sampling, which is list or source where the specimen is chosen and by. The frames for samples should be an example of its larger inhabitants and should be accurate and up-to-date to ensure the validity of the sample. Overall, the nature of sampling is an important consideration in research and data collection as it can impact the validity, dependability and the findings' applicability in general. The choice of sampling method should be based based on the study objective, the population's characteristics, and the tools available for gathering and analyzing data.

TABULATION OF COLLECTED INFORMATION

Tabulation of collected data is the process of organizing and summarizing the data collected from a survey or research study into tables, charts, or graphs for easier analysis and interpretation. The tabulation process involves the following steps:

1. Prepare a codebook: A codebook is a document that contains a list of all the variables in the study, their codes, and each variable's categories or values. This helps to make sure the information is entered correctly and consistently.
2. Data entry: The collected data is entered into a computer using a spreadsheet or statistical software program. It is important to check for errors during the data entry process to ensure



accuracy.

3. Clean the data: Once the data is entered, to get rid of any mistakes or contradictions, it needs to be cleansed. For this, it's necessary to look for missing data, outliers, and data entry wrong. Any errors or inconsistencies need to be corrected or removed.
4. Organize the data: The data is organized by variable and category. This can be done using spreadsheet software or statistical software. Each variable is placed in a column, and each category is placed in a row.
Tabulate the data: The data is then tabulated by counting the number of respondents in each category for each variable. These details can be summarized the tables, charts, or charts to make it easier to understand and interpret.
5. Analyze the data: Once the data is tabulated, it can be analyzed using statistical methods to identify patterns, relationships, and trends in the data.

Overall, tabulation of collected data is indeed a crucial stage in the research procedure. that helps to organize, summarize, and analyze the data collected from a surveyor research study. It is important to ensure accuracy, consistency, and completeness during the tabulation process to obtain valid and reliable results.

CONCLUSION

In conclusion, gathering information to address research questions or test hypotheses is a critical step in the research process known as data collecting. Techniques for gathering data include surveys, interviews, investigations, and trials. The choice such as strategy relies on the study objective, the characteristics of the population, as well as the skills at hand for

data collecting. Every technique has advantages and limits.

The quality the data collected depends on the accuracy, completeness, and consistency of the data collection methods used. It is essential to design data collection instruments such as questionnaires and interview protocols carefully to make sure the inquiries are clear, precise, and pertinent to the research questions. Additionally, it is essential in order to make sure the data collection procedure is ethical, and data is collected with the informed consent of the participants and in a non-intrusive manner. After collecting information processing is necessary analyzed, and interpreted to draw meaningful conclusions. The data processing involves organizing, summarizing, and tabulating the data collected, while data Evaluating entails using statistical methods to determine patterns, relationships, and trends data, there. Finally, interpreting the data involves drawing meaningful conclusions and making recommendations based on the findings.

In summary, data collection is an essential aspect of research that requires careful planning, execution, and interpretation. By employing appropriate data collection methods and ensuring accuracy and consistency, researchers can obtain reliable and valid results that can inform decision-making and aid in the development of knowledge in various fields.

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