



DATA COLLECTING INSTRUMENTS AND TOOLS IN RESEARCH

Dr. Anupama Goyal

Associate Professor In Botany

Maharani Girls College , Ajmer Road , Jaipur

Abstract

Data collection is the process of collecting and measuring information about variables of interest, in a systematic way that enables one to answer stated research questions, test ideas, and evaluate results. The research component of data collection is common in all fields of study including environmental and social sciences, humanities, business, etc. Although methods vary from instruction, emphasis is placed on ensuring accurate and reliable collection. The goal of all data collection is to capture quality evidence that also translates into rich data analysis and allows for the creation of a convincing and reliable answer to the questions asked. Regardless of the research field or preference in interpreting data (quantity, quality), accurate data collection is essential to maintaining research integrity. Both the selection of appropriate data collection tools (existing, modified, or newly developed) and explicit instructions for its use should reduce the likelihood of errors occurring. Depending on the type of data required the researcher should decide which tool will be suitable under circumstances. Other tools help to obtain descriptive / quality data and to obtain quantitative data.

Data collection is one of the most important stages of research. You can have the best research design in the world but if you can't collect the required data you will not be able to complete your project. Data collection is a very difficult task that requires careful planning, hard work, patience, perseverance and so on in order to complete the task successfully. Data collection begins with determining what type of data is required followed by sample selection for specific individuals. After that, you need to use a specific tool to collect data from the selected sample.

Introduction:

Types of data collection

Data collection alone falls under two broad categories; Basic data collection and secondary data collection.

- **Primary Data Collection**

Primary data collection is raw data collection collected from source. It is a process of collecting original data collected by a researcher for a specific research purpose. It can also be broken down into two parts; qualitative research and quantitative data collection methods.

- **Qualitative Research Method**

Advanced research methods for data collection do not involve data collection involving numbers or the need for statistical discovery, rather they are based on measurable factors such as the researcher's feelings or emotions. An example of such a method is an open-ended questionnaire.



- **Quantitative Research Method**

Quantitative methods are presented in numbers and require statistical calculations. An example would be the use of a questionnaire with close-ended questions to arrive at figures to be mathematically calculated. It also includes methods of correlation and regression, mean, mode and median.



Secondary Data Collection

Secondary data collection, is the gathering of second-hand data collected by an individual who is not the original user.. It is a process of collecting existing data, be it already published books, journals, and / or Internet sites. In terms of simplicity, it is much less expensive and easier to assemble.

Your choice between Basic data collection and secondary data collection depends on the type, scope, and location of your research and its objectives and objectives.

IMPORTANCE OF DATA COLLECTION

There are a number of basic reasons for data collection, especially for the researcher. Going with you to them, here are a few reasons;

- Research Integrity

The main reason for collecting data, either in quantity or quality, is to ensure that the integrity of the research question is maintained.

- Reduce the risk of errors

Proper use of appropriate method data collection reduces the errors consistent with the results.

- Decision making

To reduce the risk of errors in decision-making, it is important that accurate data is collected so that the researcher does not make uninformed decisions.

- Save Cost and Time

Data collection saves the researcher's time and resources that could have been misused without a deep understanding of the topic or topic.

- Support the need for new ideas, innovations, and / or innovations

To prove the need for 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.

What Is a Data Collection Tool?

Data collection tools are the devices or instruments used to collect data, such as paper questionnaires or computer-assisted interviews. Examples, Checklists, Interviews, Occasional Checks, and Surveys or Questionnaires are all tools used to collect data.

It is important to determine the data collection tools because the research is done in different ways and for different purposes. The purpose of data collection is to capture quality evidence that allows analysis to lead to the creation of convincing and reliable answers to the questions asked.

INTERVIEW

An interview is a face-to-face conversation between two people for the sole purpose of gathering information that is relevant to the purpose of the research. Interviews are of various types namely; Structured, Slightly formed, and irregular and each slightly different from the other.

- Structured Interviews-. It is a verbally administered questionnaire, For speed and efficiency, it is highly recommended, but it has no depth.

- Semi-Structured Interviews:

In this method, there subsist several key questions which cover the scope of the areas to be explored. It allows a little more leeway for the researcher to explore the subject matter.

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- Unstructured Interviews: It is an in-depth discussion that allows the researcher to gather more information on purpose. The advantage of this approach is the freedom that gives the researcher the ability to integrate structure and flexibility, although it is time-consuming.

Benefits

- In-depth information
- Freedom of flexibility
- Accurate data.

Cons

- Time consuming
- It is expensive to collect.

What Are The Best Database Collection Tools?

To collect data about conversations, here are a few tools you can use to collect data easily.

- Sound recorder

Audio recorder is used to record sound on disk, tape, or film. Audio information can meet the needs of a wide range of people, and provide alternative printing tools for data collection tools.

- Digital camera

The advantage of a digital camera is that it can be used to transfer those images to the monitoring screen when the need arises.

- Camera

A camcorder is used for collecting data through interviews. It provides a combination of both an audio recorder and a video camera. The data provided is standard and allows respondents to answer fully asked questions. If you need to gather sensitive information during the interview, the camera lens may not work for you as you will need to maintain the privacy of your subject.

Questionnaires

This is a process of data collection with a tool that includes a series of questions and instructions for getting feedback from the target audience. The questionnaire is designed to collect data from the group.

To be clear, it is important to note that the questionnaire is not research, but rather part of it. A survey is a data collection process that involves a variety of data collection methods, including a list of questions.

In the questionnaire, there are three types of questions used. That's right; unique, scale, and open. For each question related to the nature and scope of the study.

Pros:

It can be controlled in large quantities and is economical.

- Can be used to compare and contrast previous research to measure change.
- It is easy to visualize and analyze.
- The questionnaire provides actionable data.
- The identity of the respondent is protected.
- The questionnaire can cover all areas of the topic.
- Inexpensive.

Cons:

- Responses may be unreliable or respondents lose interest in the middle.
- The questionnaire cannot generate quality data.
- Questions may be left unanswered.
- Respondents may have a hidden agenda.
- Not all questions can be easily analyzed.

What Are The Best Database Collection Tools?

- Formplus Online Questionnaire

Formplus allows you to create powerful forms to help you gather the information you need. Formplus helps you create your favorite online forms. Formplus online

questionnaire form template for possible trends and measurable answers. Do research, improve your product knowledge or already know the audience with this form template. The form template is fast, free and customizable.

Paper Questionnaire

A Paper questionnaire is a data collection tool that includes a series of questions or instructions for the purpose of collecting information from respondents. It is highly designed for statistical analysis of responses, and can be used as a data collection method.

REPORTING

By definition, data reporting is the process of collecting and transmitting data that will be further analyzed. An important aspect of data reporting is to report accurate data because inaccurate data reporting often leads to uninformed decision-making.

Pros:

- You make informed decisions.
- Easy to access.

Cons:

- The answers you have given may be exaggerated.
- Consequences may be affected by bias.
- Respondents may be too shy to provide all the details.
- Incorrect reports will lead to uninformed decisions.

What Are the Best Tools for Data Reporting?

Reporting tools allow you to extract and present data on charts, tables, and other visuals so users can find useful information. You can find reporting data on non-governmental organizations (NGOs) reports, newspapers, website articles, hospital records.

- NGO reports

The content of the NGO reports is an in-depth and comprehensive report on the activities of the NGO, covering areas such as business and human rights. The information contained in these reports is directly related to the research and forms an acceptable educational basis for data collection. NGOs tend to focus on development programs designed to promote specific causes.

- Newspapers

Newspaper data is easy to collect and is sometimes the only continuous source of event data. Although there is a problem with newspaper bias, it is still a valid tool for collecting Reporting data.

- Website Documents

Collecting and using the data contained in website articles is also another data collection tool. Collecting data on web topics is a fast and inexpensive data collection. The two biggest disadvantages of using this data reporting method are bias in the data collection process and potential concerns for security / confidentiality.

- Hospital Care Records

Healthcare includes a wide range of public and private data collection systems, including health surveys, administrative registration and payment records, and medical records, used by various organizations, including hospitals, CHCs, physicians, and health systems. The data provided is clear, impartial and accurate, but should be obtained under legal means as medical data is maintained with strict rules.

EXISTING DATA

This is an introduction to new research questions in addition to those previously used when data was initially collected. It involves adding dimensions to a study or study. An example would be retrieving data from an archive.

Benefits

- Accuracy is very high.
- Easily accessible information.

Evil

- Problems with testing.
- Difficulty understanding.

Which Data Collection Is Best

- Research Journals - Unlike newspapers and magazines, research journals are intended for academic or technical audiences, not ordinary students. A journal is a scholarly publication containing articles written by researchers, scholars, and other experts.
- Surveys - A survey is a data collection tool for collecting information from a sample of people, with the aim of making the results better for more people. Assessment has different purposes and can be done in many ways depending on the goals to be achieved.

OBSERVATION

This is a method of data collection where the information of an object is collected by observation. View mode can be achieved as a full viewer, viewer as participant, participant as viewer, or as full participant. This approach is the basic basis for hypothesis.

Benefits

- Easy to handle.
- There is great accuracy in the results.
- It is a universally accepted practice.
- Distributes respondents' reluctance to manage the report.
- Suitable for specific situations.

Evil

- Some events are not open to view.
- Reliable.
- Bias may arise.
- It is expensive to manage.
- Its validity cannot be accurately predicted.

What are the Best Viewing Data Collection Tools?

Viewing involves the active acquisition of information from a primary source. Viewing may also involve seeing and recording data using scientific tools. The best Viewing Tools are:

- Checklists - specific conditions, which allow users to gather information and make decisions about what they should know about the results. They provide systematic ways to collect data about specific behaviors, knowledge, and skills.
- Direct observation - This is a test method for collecting test information. The examiner views the subject in its normal location without changing that location.

FOCUS GROUPS

In contrast to quantitative research that includes numerical data, this method of data collection focuses on quality research. It falls under the main category of data based on

respondents' opinions and opinions. This study involves asking open-ended questions to a group of people typically ranging from 6-10 people, to provide feedback.

Benefits

- The information obtained is usually more detailed.
- Expensive compared to one-on-one interviews.
- Demonstrates speed and efficiency in delivering results.

Evil

- Lack of depth in compiling nitty-gritty theme.
- Impartiality may be evident.
- Requires questionnaire training
- The researcher has very little control over the outcome.
- A few loud words may make others unintelligible.
- Difficulty grouping together.

What Are The Best Focused Group Data Collection Tools?

The focus group is a simplified method of data collection and built around a questionnaire. The purpose of the meeting is to draw out the participants' detailed answers to these questions. The best tools for dealing with Focus teams are:

- The Two Ways - One party looks at the other party answering questions asked by the president. After listening to what the other group has to offer, the listening group is able to handle more discussion and can reach different conclusions.
- Dueling-Moderator - There are two presidents who play the devil's lawyer. The main advantage of a cohesive presidential focus group is to facilitate new ideas by introducing new ways of thinking and diverse ideas.

INTEGRATED RESEARCH

This method of data collection involves the use of new methods to improve participation in both individuals and groups. And under the main category, it is a combination of Discussions and Focus Groups while quality data is collected. This approach is important when it comes to sensitive topics.

Benefits

- Encourage participants to provide feedback.
- Stimulates deep communication between participants.
- Respondent-related anonymity increases participation.
- Improves the richness of collected data.

Evil

- Expensive for all 7 tops.
- They are the most time consuming.

What Are the Best Integrated Research Data Collection Tools?

The Integrated Research Method involves two or more data collection methods, for example, interviews and questions or a combination of informal telephone conversations and focus groups. The best tools for integrated research are:

- Internet Research - The two tools included here are online discussions and the use of questions. This is a list of questions a target audience can fill out online. It is timely, efficient and effective. Especially since the data to be collected is volume in nature.
- Dual-Moderator - Two tools are integrated into focus groups and a structured questionnaire. Organized interviewers provided direction on where the research was

headed while two presidents were in charge of the process. While one ensures that the focus group session continues smoothly, the other ensures that the topics discussed are all integrated. Dual presidential focus groups often lead to a more productive session and basically lead to complete data collection.

Conclusion:

They **provide highly detailed information about natural processes**. The data collection is laborious and time-consuming and may have to be repeated to ensure reliability. However, observation schedules based on a set of expectations can make data collection easier.

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