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QUESTION.

Read and summarize what you have read on qualitative and quantitative method of data collection with relevant examples.

ANSWER.

Data collection is described as the “process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer queries, stated research questions, test hypotheses, and evaluate outcomes.”

Depending on the discipline or field, the nature of the information being sought, and the objective or goal of users, the methods of data collection will vary. The approach to applying the methods may also vary, customized to suit the purpose and prevailing circumstances, without compromising the integrity, accuracy and reliability of the data.

### I. Qualitative Data Collection Methods

Exploratory in nature, these methods are mainly concerned at gaining insights and understanding on underlying reasons and motivations, so they tend to dig deeper. Since they cannot be quantified, measurability becomes an issue. This lack of measurability leads to the preference for methods or tools that are largely unstructured or, in some cases, maybe structured but only to a very small, limited extent.

Generally, qualitative methods are time-consuming and expensive to conduct, and so researchers try to lower the costs incurred by decreasing the sample size or number of respondents.

#### Face-to-Face Personal Interviews

This is considered to be the most common data collection instrument for qualitative research, primarily because of its personal approach. The interviewer will collect data directly from the subject (the interviewee), on a one-on-one and face-to-face interaction. This is ideal for when data to be obtained must be highly personalized.

The interview may be informal and unstructured – conversational, even – as if taking place between two casual to close friends.

#### Qualitative Surveys

* **Paper surveys or questionnaires.** Questionnaires often utilize a structure comprised of short questions and, in the case of qualitative questionnaires, they are usually open-ended, with the respondents asked to provide detailed answers, in their own words. It’s almost like answering essay questions.
* **Web-based questionnaires.**This is basically a web-based or internet-based survey, involving a questionnaire uploaded to a site, where the respondents will log into and accomplish electronically. Instead of a paper and a pen, they will be using a computer screen and the mouse.

#### Focus Groups

#### Focus group method is basically an interview method, but done in a group discussion setting.When the object of the data is behaviors and attitudes, particularly in social situations, and resources for one-on-one interviews are limited, using the focus group approach is highly recommended. Ideally, the focus group should have at least 3 people and a moderator to around 10 to 13 people maximum, plus a moderator.

Depending on the data being sought, the members of the group should have something in common. For example, a researcher conducting a study on the recovery of married mothers from alcoholism will choose women who are (1) married, (2) have kids, and (3) recovering alcoholics. Other parameters such as the age, employment status, and income bracketdo not have to be similar across the members of the focus group.

#### Documental Revision

This method involves the use of previously existing and reliable documents and other sources of information as a source of data to be used in a new research or investigation. This is likened to how the data collector will go to a library and go over the books and other references for information relevant to what he is currently researching on.

#### Observation

In this method, the researcher takes a participatory stance, immersing himself in the setting where his respondents are, and generally taking a look at everything, while taking down notes.

Aside from note-taking, other documentation methods may be used, such as video and audio recording, photography, and the use of tangible items such as artifacts, mementoes, and other tools.

#### Longitudinal studies

This is a research or data collection method that is performed repeatedly, on the same data sources, over an extended period of time. It is an observational research method that could even cover a span of years and, in some cases, even decades. The goal is to find correlations through an empirical or observational study of subjects with a common trait or characteristic.

An example of this is the [Terman Study of the Gifted](http://lifecourse.web.unc.edu/research_projects/terman/%22%20%5Ct%20%22_blank) conducted by Lewis Terman at Stanford University. The study aimed to gather data on the characteristics of gifted children – and how they grow and develop – over their lifetime.Terman started in 1921, and it extended over the lifespan of the subjects, more than 1,500 boys and girls aged 3 to 19 years old, and with IQs higher than 135.

To this day, this study is the world’s “oldest and longest-running” longitudinal study.

#### Case Studies

In this qualitative method, data is gathered by taking a close look and an in-depth analysis of a “case study” or “case studies” – the unit or units of research that may be an individual, a group of individuals, or an entire organization. This methodology’s versatility is demonstrated in how it can be used to analyze both simple and complex subjects.

However, the strength of a case study as a data collection method is attributed to how it utilizes other data collection methods, and captures more variables than when a single methodology is used. In analyzing the case study, the researcher may employ other methods such as interviewing, floating questionnaires, or conducting group discussions in order to gather data..

**Two Main Approaches to Qualitative Data Analysis**

1. **Deductive Approach**

The deductive approach involves analyzing qualitative data based on a structure that is predetermined by the researcher. In this case, a researcher can use the questions as a guide for analyzing the data. This approach is quick and easy and can be used when a researcher has a fair idea about the likely responses that he/she is going to receive from the sample population.

1. **Inductive Approach**

The inductive approach, on the contrary, is not based on a predetermined structure or set ground rules/framework. This is more time consuming and a thorough approach to qualitative data analysis. Inductive approach is often used when a researcher has very little or no idea of the research phenomenon.

### Advantages of Qualitative Data

**1. It helps in-depth analysis:** Qualitative data collected provide the researchers with in-depth analysis of subject matters. While collecting qualitative data, the researchers tend to probe the participants and can gather ample amount of information by asking the right kind of questions. From a series of question and answers, the data that is collected is used to draw conclusions.

**2. Understand what customers think:**Qualitative data helps the market researchers to understand the mindset of their customers. The use of qualitative data gives businesses an insight into why a customer purchased a product. Understanding customer language helps market research infer the data collected in a more systematic manner.

### Disadvantages of Qualitative Data

**1. Time-consuming**: As collecting qualitative data is more time consuming, fewer people are studies in comparison to collecting quantitative data and unless time and budget allow, a smaller sample size is included.

**2. Not easy to generalize:**Since fewer people are studied, it is difficult to generalize the results of that population.

Steps to Qualitative Data Analysis

**Step 1: Arrange your Data**

**Step 2: Organize all your Data**.

**Step 3: Set a Code to the Data Collected**

**Step 4: Validate your Data**

**Step 5: Concluding the Analysis Process**

### II. Quantitative Data Collection Methods

Data can be readily quantified and generated into numerical form, which will then be converted and processed into useful information mathematically. The result is often in the form of statistics that is meaningful and, therefore, useful. Unlike qualitative methods, these quantitative techniques usually make use of larger sample sizes because its measurable nature makes that possible and easier.

#### Quantitative Surveys

Unlike the open-ended questions asked in qualitative questionnaires, quantitative paper surveys pose closed questions, with the answer options provided. The respondents will only have to choose their answer among the choices provided on the questionnaire.

* (+) Similarly, these are ideal for use when surveying large numbers of respondents.

#### Interviews

Personal one-on-one interviews may also be used for gathering quantitative data. In collecting quantitative data, the interview is more structured than when gathering qualitative data, comprised of a prepared set of standard questions.

These interviews can take the following forms:

* **Face-to-face interviews:**Much like when conducting interviews to gather qualitative data, this can also yield quantitative data when standard questions are asked.
	+ (+) The face-to-face setup allows the researcher to make clarifications on any answer given by the interviewee.
	+ .
* **Telephone and/or online, web-based interviews.**Conducting interviews over the telephone is no longer a new concept.Rapidly rising to take the place of telephone interviews is the video interview via internet connection and web-based applications, such as Skype.
	+ (+) The net for data collection may be cast wider, since there is no need to travel through distances to get the data. All it takes is to pick up the phone and dial a number, or connect to the internet and log on to Skype for a video call or video conference.
	+ (-) Quality of the data may be questionable, especially in terms of impartiality. The net may be cast wide, but it will only be targeting a specific group of subjects: those with telephones and internet connections and are knowledgeable about using such technologies.

**Computer-assisted interviews.**This is called CAPI, or Computer-Assisted Personal Interviewing where, in a face-to-face interview, the data obtained from the interviewee will be entered directly into a database through the use of a computer.

#### Quantitative Observation

This is straightforward enough. Data may be collected through systematic observation by, say, counting the number of users present and currently accessing services in a specific area, or the number of services being used within a designated vicinity.

When quantitative data is being sought, the approach is naturalistic observation, which mostly involves using the senses and keen observation skills to get data about the “what”, and not really about the “why” and “how”.

#### Experiments

Have you ever wondered where clinical trials fall? They are considered to be a form of experiment, and are quantitative in nature.These methods involve manipulation of an independent variable, while maintaining varying degrees of control over other variables, most likely the dependent ones. Usually, this is employed to obtain data that will be used later on for analysis of relationships and correlations.

Quantitative researches often make use of experiments to gather data, and the types of experiments are:

* **Laboratory experiments.**This is your typical scientific experiment setup, taking place within a confined, closed and controlled environment (the laboratory), with the data collector being able to have strict control over all the variables.
* **Field experiments.**This takes place in a natural environment, “on field” where, although the data collector may not be in full control of the variables, he is still able to do so up to a certain extent. Manipulation is still possible, although not as deliberate as in a laboratory setting.
* **Natural experiments.**This time, the data collector has no control over the independent variable whatsoever, which means it cannot be manipulated. Therefore, what can only be done is to gather data by letting the independent variable occur naturally, and observe its effects.