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**RESEARCH METHODOLOGY**

Data collection is the process of collecting and measuring information on specific variables. It’s done with the purpose of answering questions or testing hypotheses. There are a variety of different data collection methods that researchers can use to gather data. While every method has its advantages and drawbacks, some methods are better suited for certain situations than others. It is a very important aspect of research.

**DATA COLLECTION METHODS**

There are 2 methods of data collection

1. Quantitative data collection method
2. Qualitative data collection method

**QUANTITATIVE DATA COLLECTION METHOD**

Quantitative research methods describe and measure the level of occurrences on the basis of numbers and calculations. Moreover, the questions of “how many?” and “how often?” are often asked in quantitative studies. Quantitative research can be described as ‘entailing the collection of numerical data and exhibiting the view of relationship between theory and research as deductive, a predilection for natural science approach, and as having an objectivist conception of social reality In other words, quantitative studies mainly examine relationships between numerically measured variables with the application of statistical techniques.

Quantitative data collection methods are based on random sampling and structured data collection instruments. Findings of quantitative studies are usually easy to present, summarize, compare and generalize. This methods include:

1. **Quantitative surveys**

Quantitative surveys consist of a list of queries which respondents can answer by choosing the appropriate answer from a list of responses.

Questions used in quantitative surveys are necessarily close-ended to ensure measurability. They 10). Quantitative [survey questions](https://www.opinionstage.com/blog/use-training-survey-questions-to-measure-training-effectiveness/) need to be straightforward and easy to understand. There should be no hint of ambiguity in these types of questions. Quantitative surveys are standardized, and their results can be used to make reliable generalizations. Their findings can be presented in the form of charts and graphs, which makes them easier to understand. These surveys can be conducted online, in-person, or over the phone. Out of these three methods, online surveys are certainly the easiest to conduct.

1. **Interviews**

Interviews are another way to collect quantitative data. Researchers can conduct interviews in-person, online, or over the phone. The benefit of conducting in-person interviews is that the researcher can easily clarify answers given by interviewees. However, these types of interviews can be very time-consuming if working with a large sample size. Interviews conducted online or over the phone are very cost-effective. They allow researchers to interview a large number of respondents in a short period.

There are several types of interviews common among researchers

1. Face to face interview
2. Phone interview
3. Email interview
4. Chat/messaging interview
5. **Quantitative observation**

Quantitative data can also be collected through systematic observation. Observation is a very simple and affordable way of collecting data. However, since it relies on researchers’ senses, it can be unreliable. The data gathered through observation can be biased due to researchers’ perception of people or situations involved with data collection.

The three main types of experiments include:

* **Laboratory experiments** – These types of experiments take place in a controlled environment, with researchers having strict control over all the variables involved.
* **Field experiments** – Take place in a natural environment where full control of variables might not be available.
* **Natural experiments** – In these types of experiments, researchers have no control over variables, and data is collected by letting variables occur naturally.

**QUALITATIVE DATA COLLECTION METHODS**

The qualitative data methods play an important role in impact evaluation by providing information useful to understand the process behind observed results and assess changes in people’s perception of their wellbeing. Regardless of the kinds of data involved, data collection in a qualitative study takes a great deal of time. The researcher needs to record any potentially useful data thoroughly, accurately, systematically using field notes, sketches, audiotapes, photographs and other suitable means. The data collection method must observe the ethical principles of research.

The methods include:

1. **Face to face interview**

This type of approach is useful for getting a detailed understanding of the subject matter. However, it makes processing the collected data time-consuming and somewhat difficult. The interview itself is usually unstructured and informal. Most questions used in the interview are spontaneous and unplanned. They’re focused on getting an understanding of an individual’s perspectives and experiences. They can reveal respondents’ feelings, values, and beliefs.

1. **Observation**

Observation allows researchers to collect qualitative data by observing respondents in their natural setting.

In qualitative observation, researchers participate in the process. They immerse themselves in the setting along with respondents, all while taking notes

The two main types of observation include:

* **Covert observation** – This type of observation involves the researcher being concealed during the observation process.
* **Overt observation** – Respondents that participate in overt observation are aware that they’re being observed.

Data collected through qualitative observation is more reliable since researchers are participating in the process themselves. However, the attitude of researchers towards the data may be subjective.

There’s also the issue of researchers’ participation interfering with the natural state of the setting. Respondents might act differently because they are being observed, which leads to impaired results.

1. **Longitudinal studies**

A longitudinal study is a type of data collection that’s performed repeatedly over an extended period on the same data sources. It can last for years or even decades.

Longitudinal studies are ideal for gathering data that’s supposed to establish a pattern for a specific variable over a defined period. They’re very effective in finding relationships of cause and effect.

The main disadvantage of longitudinal studies is the long period that’s necessary to carry them out. There’s also the issue of data being diluted due to subjects changing their opinions and attitudes over the duration of a study.

1. **Case studies**

Case studies involve taking a close look at a particular case – an individual, a group of individuals, or an organization.

This type of data collection is very versatile and can be used to analyze simple and complex subjects. Case studies tend to provide detailed, in-depth information.

Researchers analyzing a case study might use other methods to collect data. They might take advantage of questionnaires, interviews, or group discussions.

1. **Focus group discussions**

Focus group discussions can also be considered as a type of interview but it is conducted in a group discussion setting. Usually, the focus group consists of 8 – 10 people (the size may vary depending on the researcher’s requirement). The researchers ensure appropriate space is given to the participants to discuss a topic or issue in a context. The participants are allowed to either agree or disagree with each other’s comments. With a focused group discussion, researchers get to know how a particular group of participants perceives the topic. Researchers analyze what participants think of an issue, the range of opinions expressed, and ideas discussed. The data is collected by noting down the variations or inconsistencies (if any exists) in the participants, especially in terms of belief, experiences, and practice.

**DIFFERENCES BETWEEN QUANTITATIVE AND QUALITATIVE DATA COLLECTION**

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| QUANTITATIVE METHODS | QUALITATIVE METHODS |
| Number based to collect information | Text based to collect information |
| Fixed and more structured techniques | Semi-structured techniques |
| Usually measurable | Not usually measurable |
| Usually large sample size | Usually small sample size |
| Data is usually rational or interval | Data is usually ordinal or nominal |