MARTIC NUMBER:17/MHSO2/107

RESEARCH METHODOLOGY

Data collection is the process of collecting and measuring information specific variables. it’s done with the purpose of answering question or testing hypotheses. There are a variety of different data collection method 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 calculation. Moreover, the question of “how many” and “how often” are often asked in quantitative studies. Quantitative research can be describe 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 of social reality. In other words, quantitative studies mainly examine relationship 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.

Question used in quantitative surveys are necessarily closed-ended to ensure measurability. They 10). Quantitative survey question need to be straight forward and easy to understand. There should be no hint of ambiguity in these types of questions. Quantitative survey are standardized, and 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 the 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 interviews. However, these types of interviews can be very time-consuming if working with a large sample size. Interview a large number of respondents in a short period.

There are several types of interviews common among researchers

 ¡. Face to face interview

 ¡¡. Phone interview

 ¡¡¡. Email interview

 ¡v. Chat/messaging interview

1. **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 based due to researcher perception of people or situations involved with data collection.

The three main types of experiments include:

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

**QUALITATIVE DATA COLLECTION METHOD**

The qualitative data methods play an important role in implant evaluation by providing information useful to understand the process behind observed results and changes I people’s perception of their wellbeing. Regardless of the kind 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, stretches, audiotapes, photographs and other suitable means. The method must observe the ethical principal of research.

The methods include:

1. **Face to face interview**

This type of approach is useful for getting a detailed understanding of the subject matters. 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**

The two main types of observation include:

• Convert observation – this types 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 researcher 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 setting. Respondents might act differently because they are being observed, which leads to impaired results.

1. **Longitudinal studies**

Longitudinal study is a type of data collection that’s 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 relationship of cause and effect the main disadvantage of Longitudinal studies is the long period that is 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 particular case – an individual, a group of individuals, or an organization.

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

Researcher analysing a case study might use other methods to collect data. They might take advantages of questionnaires, interviews, or group discussions.

1. **Focus group discussions**

Focus group discussions can be considered as a type of interview but it is conducted in a group discussion setting. Usually, the focus group consist 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 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 |