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Data Collection Methods

Data collection is a process of collecting information from all the relevant sources to find answers to the research problem, test the hypothesis and evaluate the outcomes. Data collection methods can be divided into two categories: secondary methods of data collection and primary methods of data collection.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.

**Types of data collection**

1. Quantitative data collection

2. Qualitative data collection

**Qualitative Data Collection**

Quantitative data collection is descriptive in nature rather than numerical. Different methods are used in qualitative research. The most common are interviews, focus group discussions, observational methods and document analysis. Combining two or more data collections methods, for instance interviews as well as focus groups. Qualitative data can be observed and recorded. This data type is non-numerical in nature. This type of data is collected through methods of observations, one-to-one interview, conducting focus groups and similar methods. Qualitative data in statistics is also known as categorical data. Data that can be arranged categorically based on the attributes and properties of a thing or a phenomenon.Also known as categorical data

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**INTERVIEWS**

Interviews are useful to explore experiences, views, opinions, or belief on specific matters. There are different grades of structuring the interview: structured, semi- structured or open/ in-depth, dependent on the characteristics of structuring the interview by the researcher.As the interview is a product of interaction between the researcher and the interviewee, the setting and skills of the researcher are of importance (e.g. the ability to build a sense of trust (developing rapport), the way of phrasing questions, give the interviewee room to tell a story, body language).

**FOCUS GROUP DISCUSSIONS**

These are useful to examine how social knowledge is produced. The researcher stimulates discussion in order to examine how knowledge and ideas develop and operate in a given group. Most of the times, a facilitator guides a discussion about a particular topic in a group of usually 6-12 people.The role of the facilitator is to create an open atmosphere, involve participants in the discussion and manage this discussion. The organization of a focus group requires careful attention. This includes the sampling and recruitment of participants, the composition of the topic list and how the data will be collected.

**OBSERVATIONAL METHODS**

These are used to understand phenomenon by studying people’saccounts and actions in an everyday context. There are different types of observations, with various degrees of research participation, like non participating observation (e.g. by using video recordings), and participants observation.

**Document Analysis**

Document analysis is based on existing sources, like government reports, personal documents, articles in newspapers, books or medical records.

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.

2. Rich data: Collected data can be used to conduct research in the future as well. Since the questions asked to collect qualitative data are open-ended questions, respondents are free to express their opinions which leads to collecting more information.

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. Is dependent on researcher’s skills: This type of data is collected through one-to-one interviews, observations, focus groups etc. it relies on the researcher’s skills and experience to collect information from the sample.

Quantitative data collection

These are data that deal with quantities, values or numbers, making them measurable. Thus, they are usually expressed in numerical form, such as length, size, amount, price, and even duration. The use of statistics to generate and subsequently analyze this type of data add credence or credibility to it, so that quantitative data is overall seen as more reliable and objective.

Data can be readily quantified and generated into numerical form, which will then be converted and processed into useful information mathematicallyIn other words, quantitative studies mainly examine relationships between numerically measured variables with the application of statistical techniques. Quantitative data collection methods include;

**Probability sampling**​

A definitive method of sampling carried out by utilizing some form of *random selection* and enabling researchers to make a probability statement based on data collected at random from the targeted demographic. One of the best things about probability sampling is it allows researchers to collect the data from representatives of the population they are interested in studying.

There are three significant types of probability sampling

• **Simple random sampling:** More often, the targeted demographic is chosen for inclusion in the sample.

• **Systematic random sampling:**Any of the targeted demographic would be included in the sample, but only the first unit for inclusion in the sample is selected randomly, rest are selected in the ordered fashion as if one out of every ten people on the list.

• **Stratified random sampling:**It allows selecting each unit from a particular group of the targeted audience while creating a sample. It is useful when the researchers are selective about including a specific set of people in the sample, i.e., only males or females, managers or executives, people working within a particular industry.

**Surveys/questionnaires**

Surveys or questionnaires created using online survey software are playing a pivotal role in online data collection be it quantitative or qualitative research. The surveys are designed in a manner to legitimize the behavior and trust of the respondents.

There are two significant types of survey questionnaires used to collect online data for quantitative market research.

1. Web based questionnaire: this is one of the ruling and most trusted methods for internet based research or online research. In a web based questionnaire, they receive an email containing the survey link, clicking on which takes the respondents to a secure online survey tool from where he /she can take the survey or fill in the survey questionnaire. The primary benefit of a web based questionnaire is flexibility; respondents are free to take the survey in their free time using adesktop, laptop, tablet, or mobile.

2. Mail questionnaire: in a mail questionnaire, the survey is mailed out to a host of the sample population, enabling the researcher to connect with a wide range of audiences. The mail questionnaire typically consist of a packet containing a cover set that introduces the audience about the type of research and reason why itis being conducted along with a prepaid return to collect data online.

**Document Review**

Document review is a process used to collect data after reviewing the existing documents. It is an efficient and effective way of gathering data as documents are manageable and are the practical resource to get qualified data from the past. Apart from strengthening and supporting the research by providing supplementary research data document review has emerged as one of the beneficial methods to gather quantitative research data.

Three primary document types are being analyzed for collecting supporting quantitative research data

• **Public Records**

• **Personal Documents**

• **Physical Evidence**

**INTERVIEWS**

Interviewing people is a standard method used for collection of data. However, the interviews conducted to collect quantitative data are more structured, wherein the researchers ask only a standard set of questionnaires and nothing more than that. There are three major types of interviews conducted for data collection

1. Telephone interviews: for years, telephone interviews ruled the charts of data collection methods. However, nowadays, there is a significant rise in conducting video interviews using the internet, Skype, or similar online video calling platforms.

2. Face- to- face interviews: it is a proven technique to collect data directly from the participants. It helps in acquiring quality data as it provides a scope to ask detailed questions and probing further to collect rich and informative data.  Literacy requirements of the participants are irrelevant as face-to- face interviews offer ample opportunities to collect non verbal data through observation or to explore complex and unknown issues. Although it can be an expensive and time consuming method, the response rates of this interview are often higher.

3. Computer assisted personal interviewing:  it is nothing but a similar setup of the face to face interview where the interviewer carries a desktop or laptop along with him at the time of interview to upload the data obtained from the interview directly into the database. This saves a lot of time in updating and processing the data and also makes the entire process paperless as the interviewer does not carry a bunch of papers and questionnaires.

**OBSERVATION**

In this method researchers collect quantitative data through systematic observations by using techniques like counting the number of people present at the specific event at a particular time and a particular venue or number of people attending the event in a designated place. Naturalistic observation is used to collect both quantitative and qualitative. However, structured observation is more used to collect quantitative rather than qualitative data.