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**DATA COLLECTION** is defined 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.”

**QUANTITATIVE DATA COLLECTION METHODS AND EXAMPLES**

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.

**TYPES OF QUANTITATIVE DATA COLLECTION METHODS**

**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

1. **Simple random sampling:** More often, the targeted demographic is chosen for inclusion in the sample.
2. **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.
3. **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.

**INTERVIEW**

Interviewing people is a standard method used for data collection. 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 participant 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 for Face to face interviews are often higher.
3. **Computer-Assisted Personal Interviewing (CAPI):** 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. CAPI Computer-Assisted Personal Interviewing **s**aves 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.

**Surveys/questionnaires**

Surveys or questionnaires created using online survey software are playing a pivotal role in online data collection be is quantitative or qualitative research. The surveys are designed in a manner to legitimize the behavior and trust of the respondents. More often, checklists and rating scale type of questions make the bulk of quantitative surveys as it helps in simplifying and quantifying the attitude or behavior 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, the receive an email containing the survey link, clicking on which takes the respondent to a secure online survey tool from where he/she can take the survey or fill in the survey questionnaire. Being a cost-efficient, quicker, and having a wider reach, web-based surveys are more preferred by the researchers. The primary benefit of a web-based questionnaire is flexibility; respondents are free to take the survey in their free time using either a desktop, 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 consists of a packet containing a cover sheet that introduces the audience about the type of research and reason why it is being conducted along with a prepaid return to collect data online. Although the mail questionnaire has a higher churn rate compared to other quantitative data collection methods, adding certain perks such as reminders and incentives to complete the survey help in drastically improving the churn rate. One of the major benefits of the mail questionnaire is all the responses are anonymous, and respondents are allowed to take as much time as they want to complete the survey and be completely honest about the answer without the fear of prejudice.

**Observation**

As the name suggests, it is a pretty simple and straightforward method of collecting quantitative data. 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. More often, for quantitative data collection, the researchers have a naturalistic observation approach that needs keen observation skills and senses for getting the numerical data about the “what” and not about “why” and ”how.”

1. **Naturalistic observation:** is used to collect both types of data; qualitative and quantitative. However, structured observation is more used to collect quantitative rather than qualitative data.
2. **Structured observation:** In this type of observation method, the researcher has to make careful observations of one or more specific behaviors in a more comprehensive or structured setting compared to naturalistic or participant observation. In a structured observation, the researchers, rather than observing everything, focus only on very specific behaviors of interest. It allows them to quantify the behaviors they are observing. When the observations require a judgment on the part of the observers – it is often described as coding, which requires a clearly defining a set of target behaviors.

**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

1. **Public Records:** Under this document review, official, ongoing records of an organization are analyzed for further research. For example, annual reports policy manuals, student activities, game activities in the university, etc.
2. **Personal Documents:** In contrast to public documents, this type of document review deals with individual personal accounts of individuals’ actions, behavior, health, physique, etc. For example, the height and weight of the students, distance students are traveling to attend the school, etc.
3. **Physical Evidence:** Physical evidence or physical documents deal with previous achievements of an individual or of an organization in terms of monetary and scalable growth.

**QUALITATIVE DATA SAMPLING METHODS**

Qualitative research is a type of study carried out with a qualitative approach to understand the exploratory reasons and to assay how and why a specific program or phenomenon operates in the way it is operating. A researcher has the liberty to access numerous qualitative data collection methods that he/she feels are relevant.

Methods used for qualitative data collection

**Individual interview:**

It is one of the most trusted, widely used, and most familiar qualitative data collection methods primarily because of its approach. An individual or a face-to-face interview is a direct conversation between two people that has a specific structure and purpose. The interview questionnaire is designed in the manner to elicit interviewee’s knowledge or perspective related to a topic, program, or issue.

**Qualitative surveys:**

To develop an informed hypothesis, many researchers use qualitative surveys for qualitative data collection or to collect a piece of detailed information about a product or an issue.

1. **Paper surveys**

The paper questionnaires are frequently used for qualitative data collection from the

participants. The questionnaire consists of short text questions, which are often open-ended.

The motive of these questions is to collect as much detailed information

as possible in respondents own words.

1. **Online surveys**

An online survey or a web survey is prepared using a prominent online survey software and either uploaded in a website or emailed to the selected sample size with a motive to collect reliable online data.

**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.

**Observations:**

Observation is one of the traditional qualitative data collection method used by researchers to gather descriptive text data by watching or observing the people and their behavior at events or in their natural settings. In this method, the researcher is completely immersed in watching or observing people by taking a participatory stance to take down notes. Aside from taking notes, these days, different methods such as videos, photographs, audio recordings, tangible items like artifacts, mementos are also be used.

There are two main types of observation,

1. **Covert:** In this method, the observer is concealed without letting anyone know that they are being observed. For example, a researcher studying the rituals of a wedding in nomadic tribes must join them as a guest and quietly observe everything that goes around him.
2. **Overt:** In this method, everyone is aware that they are being observed. For example, A researcher or an observer wants to study wedding rituals of a nomadic tribe. To proceed with the research, the observer or researcher can reveal why he is attending the marriage and even use a video camera to shoot everything that goes on around him.