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**Quantitative Data Collection Methods**

Quantitative research methods describe and measure the level of occurrences on the basis of numbers and calculations. the questions of “how many?” and “how often?” are often asked in quantitative studies. Accordingly, quantitative data collection methods are based on numbers and mathematical calculations.

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.

**METHODS OF QUANTITATIVE DATA COLLECTION**

1. **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 the study. the data is collected randomly from the selected sample rules out the possibility of sampling bias.

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.
1. **Interviews**

Interviewing people is a standard method used for [data collection](https://www.questionpro.com/blog/data-collection/). However, the interviews conducted to collect quantitative data are more structured, where the researchers ask only a standard set of questions and nothing more than that.

There are three major types of interviews conducted for data collection

* **Telephone interviews:** in telephone interview the individual to be interviewed is called and asked some already structured questions  , there is a significant rise in conducting video interviews using the internet, Skype, or similar online video calling platforms.
* **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. Although it can be an expensive and time-consuming method, the response rates for F2F interviews are often higher.
* **Computer-Assisted Personal Interviewing (CAPI):** It is 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 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.
1. **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.

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

* **Web-based questionnaire**: This is when a link is created and sent through mail or whatsapp chat, that by clicking on the link one gets access to the survey or questionnaire, also anonymity is maintained and this also provides a medium for the respondent to be truthful about his answers .
* **Printed questionnaire:** in printed questionnaire the structured questions are printed on paper and shared to respondent to fill within a stipulated time and collected after the time, this method is not so reliable because some questionnaires may not be collected from the respondent.
1. **Observation**

 it is a 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.”

* **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. In a structured observation, the researchers, rather than observing everything, focus only on very specific behaviors of interest.
1. **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 from past events, which will bring up the question of how and also make the researcher curious to increase his knowledge.

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

* **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.
* **Personal Documents:** In contrast to public documents, this type of document review deals with individual personal accounts of individuals’ actions, behavior, health, physique. For example, the height and weight of the students, distance students are traveling to attend the school.
* **Physical Evidence:**Physical evidence or physical documents deal with previous achievements of an individual or of an organization in terms of monetary and scalable group.

**QUALITATIVE RESEARCH: DATA COLLECTION**

A qualitative research deals with the belief, behavior, motivation, desires, attitudes,choices and opinions of people. It encompasses largely variables that cannot be quantified.

The most common methods of qualitative data collection are indepth interviews, focus group discussions, observational methods and document analysis. Combining two or more data collections methods, for instance interviews as well as focus groups (‘data triangulation’) enhances the credibility of the study.

1. **Interviews**

Interviews are useful to explore experiences, views, opinions, or beliefs 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. Often the researcher develops a topic list before the start of the interview, which can be used in a flexible manner. 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.

1. **Focus group discussions**

Focus group discussions 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. Some sensitive issues might be more easy discussed within a group, although other personal information might be withheld 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.

1. **Observational methods**

Observational methods are used to understand phenomena by studying people’s accounts and actions in an everyday context, this can be done by the researcher trying to mixup with the people he is trying to study. There are different types of observations, with various degrees of research participation, like non-participating observation (e.g. by using video recordings), and participant observation or ethnography. Ethnography ‘usually involves the researcher participating, overtly or covertly, in people’s daily lives for an extended period of time, watching what happens, listening to what they say.