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Research Methods Analysis

Research is the basic process we all use when we need to find information. Taking part in research can vary from completing experiments in a lab to searching for the background info and deeper context of a classic rock song. While the research process may seem complicated and daunting, the reality is that there are simple steps to take when using the process to find accurate, reliable, and credible information. By using search strategies and finding credible sources people researching information can avoid misinformation and avoid spreading it as well. There are a vast number of research methods that can be used and it is up to the researcher to interpret the situation and choose the correct method to apply.

There are two main categories of research, qualitative and quantitative. Qualitative research is a process in which its main focus is "to yield nonquantitative or nonnumerical data" (Berger, 2020, p. 436). In other words, this type of research aims to find out information that cannot be defined by numbers or statistics. Quantitative data is the research process that is "designed to yield numerical data" (Berger, 2020, p. 436). This process uses numerical values such as statistics and percentages to decipher information and deduce conclusions. It is critical that researchers have a clear understanding of both qualitative and quantitative research methods and how best to apply them to their work.

Surveys

Surveys are one of the most widely used quantitative research methods used in the modern age. Survey research is a "method for collecting and analyzing social data via highly structured and often very detailed interviews or questionnaires in order to obtain information"

(Berger, 2020, p. 322). Surveys involve choosing a representative sample of the population being studied, and making sure that the information being obtained from the survey is relevant and geared toward the targeted population.

There are two types of surveys, descriptive and analytic. Descriptive surveys "seek to obtain information about demographic factors such as age, gender, marital status, occupation, race, or ethnicity" (Berger, 2020, p. 323). Descriptive surveys are simpler and easier to analyze than analytic. Analytic surveys aim to "find out why people behave the way they do" (Berger, 2020, p. 323). These surveys have many more factors to consider when analyzing survey information and that makes it much more difficult for researchers to quantify the information.

Methods of Survey Research

Surveys are distributed through a number of mediums in our technology driven era. Ways surveys are distributed today include the internet, social media, e-mail, mail, as well as in person. With so many options available it is imperative that the researcher analyzes the target population and chooses the best survey medium based on the situation and goals of the survey.

Choosing a sample size is also a vital part of conducting a successful survey. There are three types of random sampling used in survey research. First, simple random sampling is a sample type "in which each member of a population being studied has an equal chance of being selected" (Berger, 2020, p.343). Second, stratified random sampling is a form of sampling in which the random sample is selected based upon a characteristic or trait that has some relation to your study. Third, cluster sampling is a type of sample that researchers use to save a substantial amount of time and money. It involves sampling members of societal groups and categories and drawing information from each individual group. The accuracy of a survey measurement strongly depends on sample size.

Pros and Cons

Surveys are a very efficient way for researchers to obtain quantitative information. They are easily distributable, inexpensive, and due to their versatility can reach a large variation of demographic groups. Surveys can also sometimes provide participants more privacy by allowing them to answer with no one else around or even anonymity. While surveys are efficient tools for research, they also have several disadvantages. It is easier for people to lie on surveys, and writing good survey questions that obtain information from participants is difficult. People are also apprehensive of surveys and often refuse to participate, and obtaining samples representative of the target population is much easier said than done.

Practical Application

A good research question that could be answered through survey research is, “Is there discrimination in your workplace?” This question could help people who deal with discrimination and bias in a work setting, and it is relevant to a large number of people. Questions for this demographic would have to be well researched and unbiased. The survey sample includes everyone in the workforce, and a stratified sample should be used from there.

Interviews

Interviews also happen to be “one of the most widely used and most fundamental research techniques (Berger, 2020, p. 213). This qualitative research process is popular for a reason, as it allows researchers to talk to subjects personally and find information that is not obtainable through simple observation. An interview in its simplest form is just a conversation between someone seeking information known as the researcher, or someone supplying information known as the informant (Berger, 2020, p. 213). The first type of interview is the informal interview. This is the most unorganized type of interview as they can be impromptu and

leave the researcher with little time to prepare. In most cases, informal interviews are an introduction between the researcher and informant and allow them to form a relationship for future interviews. Next up, the unstructured interview is a type of interview in which the researcher is focused on a topic and trying to obtain information but has little to no control over the direction of the interview. Third, semistructured interviews are an interview form in which the researcher has a prepared list of questions but tries to a reasonable extent to keep the interview personable and light. Lastly, structured interviews involve the researcher using a strict schedule of questions that allow the researcher to exercise more control over the direction and flow of the interview.

Sample Size and Data Collection

Choosing the sample size and population is an integral part of conducting interview research. Research by Cobern & Adams (2020) supports the idea that when conducting qualitative interview research, the researcher should interview a group of informants with similar characteristics until he has learned most or all of their possible opinions, or the point known as saturation. Judgment on the part of the researcher is important here as the sample size and participants chosen should reflect the needs of the research (Cobern & Adams 2020).

Once a sample population is chosen, the researcher can move on to forming interview schedules and questions. Most interviews have some "degree of structure, and this degree is determined by interview type, situation, purpose, length, and complexity (Stewart & Cash 2017 p. 49). It is vitally important that the interview structure and questions are relevant to the subject at hand as well as being clear and engaging so as to keep the interview on task.

Once the interviewing process is complete, the researcher can begin analyzing and coding the data. This process can depend on the sample size, but usually involves the researcher

transcribing the interviews so they can be coded. Coding is the long process of analyzing the transcriptions "by looking for patterns, classifications, themes, and categories in this material (Berger 2020, p. 226). The researcher should look over the interview material as a whole and get a feel for it, and then begin examining individual interviews and looking for more specific trends and opinions. After determining recurring topics and trends the information should be categorized.

Pros and Cons

Interviews are very beneficial to qualitative research because they provide insightful, unique data about people. The format of interviews allows for the interviewing skills of the interviewer to play a large role in the success of the interview, which is both a strength and a weakness. If the interviewer is personable and establishes trust with the interviewee the interview is much more likely to go well than if the interviewer is cold and impersonal. Interviews also force people to form their own thoughts and opinions of a topic rather than going along with the crowd in a group setting. Something else to consider, Interviews are very time consuming, and so is the process of analyzing the data (Alsaawi 2014).

Practical Application

A good example of a research question that could practically be used in interview research could be, "What are the main causes of depression in young adults aged 20-30?" A research study question like that could be a good insight into the mental health crisis that we are currently experiencing in America. The information found from this could positively help others who suffer from depression as well. The sample size should include young adults in the age range, who have overcome or battled with depression and feel comfortable talking about it.

Experiments

Experiments are another widely used form of quantitative research and “it begins with a hypothesis about a likely outcome following an event or set of events, or about a relationship or set of relationships between two or more quantifiable variables” (Berger, 2020). Experiments are types of research that include testing whether something is true, aiming to discover new information, or testing a hypothesis or theory. Experiments involve two groups, the experimental group, and the control group. Whatever is being tested in the experiment will be done to the experimental group but not the control group, and the selection for groups is completely random. Some experiments also have the control group participate in something separate from the experimental group. The sample sizes and participants must be carefully chosen by the researcher based on the experiment and subject being tested.

The Hawthorne effect is a phenomenon discovered during the late 1920s, and led researchers to conclude that whenever people know they are being watched by researchers, they act and behave differently. This phenomenon combined with many other factors that must be considered make the study of humans in experiments much more difficult (Berger, 2020).

Experiment Methods

Researchers conducting experiments follow a certain structure when doing so, which is commonly referred to as the scientific method. Researchers begin by posing a question, and then conducting background research on the subject. After this step is complete, the researcher can construct a realistically testable hypothesis that can be experimented on. When designing an experiment, researchers must consider the variables present and how they will be measured. They must also collect demographic information of participants, randomly assign the participants, and administer a pretest before the experiment begins. After the experiment is

complete, a post test should be administered and the researcher should analyze results as well as any threats that occurred to the integrity of the experiment (Creswell, 1994).

Pros and Cons

Experimental research is a widely used quantitative form of research that uses two groups and a variable to determine possible effects of the variable. Experiments that are performed correctly in a well controlled environment can provide very strong evidence of whether an independent variable being tested has the predicted effect or not. Experiments can also provide "strong evidence that the discovered effect was not the result of some unrecognized phenomenon" (Berger, 2020). This means that experiments can be replicated and due to that other researchers can conduct the same experiment to see the result. On the other hand, the fact that experiments are artificially conducted results in the Hawthorne effect, and therefore inaccurate results are much more likely due to this. Some experiments can also severely affect participants.

Practical Use

A good research question to conduct an experiment based on could be, "How much does vaping affect students and young adults?" This experiment could be truly eye-opening to the young population of America, and the sample group would be people aged 13-25 who have vaped e-cigarettes on a regular, daily basis. You could split them up randomly and have the control group vape for one month as they had been, and have the independent group stop cold turkey for a month. At the end of the month the two groups could be examined medically to see if the month made a significant difference in the results.

Conclusion

The three research methods discussed in this paper are all useful ways of obtaining qualitative or quantitative information depending on the method used. All three have strengths and weaknesses and require a bit of judgment on when to use which type of research and how to apply it. Most importantly, the researcher must be well educated on a vast array of research methods as well as being familiar with his target population so that they can be reached and involved in the research. Making sure the research method and content of the question at hand is relevant to the target population is crucial to getting an accurate representation of the focus group of the research.

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