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QUALITATIVE AND QUANTITATIVE RESEARCH INSTRUMENTS

Research tools

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QUALITATIVE RESEARCH TOOLS

There are many types of qualitative research tools; however, the one you choose must go according to our research objectives. To choose the proper one or ones you must answer the following questions: What are you really planning to find out? How are you going to observe the target population? What's the best tool to observe certain variables or indicators? Among the most used instruments in research are the observation, the survey and the interview (Eladio, 2006). However, from these ones the observation, and the interview are the ones that are used in a qualitative investigation. There are others like: history or life stories, discussion groups, in-depth interviews, case study, and focus group that are used in a qualitative research investigation.

THE OBSERVATION

Direct observation

When the topic and the objectives are not well define we can always carry out a direct observation. It is called direct observation because you write down information of a phenomenon or event that is taking place at that very moment. After a while of observing you might have a better idea of the research problem and start writing the topic, research objectives, questions, or hypothesis of actin or change if you need them. The direct observation begins with the first interaction the researcher has with the phenomenon to be studied. It is divided in structured and unstructured observation. The difference between them is that structured observation is carried out with an observation guide and it is nonparticipant. However, an unstructured observation does not need an observation guide and can be participant or nonparticipant.

Structured observation

To carry out a structured observation you must first select the variables or indicators you are about to observe. Take into account the participants, behavior, and environment where it will take place as well as any physical movements or symbols that are important to be taken into account. The observation notes must be compared periodically to check their reliability (Scribano & Zacarias, 2013). Keep in mind that you might need a close or open observation notes. The following chart gives you a better idea of open observation notes you might consider using.

OBSERVATION NOTES		
Objective:		
Variable (if needed)	Indicator	Observation notes (Consider taking into account: the participants, behavior, environment, and physical movements or symbols related with the indicator)

Participant observation vrs. Observer participant

The role of the observer can be divided in participant observer and observer participant (Scribano & Zacarias, 2013). To be a participant observer is to be part of the community and feel and live what the target population goes through. In other words the observer becomes part of the community members and enjoys all the rights the community members have. On the other hand, an observer participant is the one that carries the role of a visitor with the only right to observe their behavior and environment without participating in their activities. As previously said the observer participant can only take notes of the activities he observes.

INTERVIEW

As establish here, an “interviewing involves asking questions and getting answers from participants in a study. Interviewing has a variety of forms including: individual, face-to-face interviews and face-to-face group interviewing. The asking and answering of questions can be mediated by the telephone or other electronic devices (e.g. computers) (Robert Wood Johnson Foundation, 2006) . Interviews can also be structured, semi-structure or unstructured”. There are also other interviews as in-depth interviews, clinical interviews, history stories and life stories.

In-depth interview

An In-depth interview is the one that takes place when you interview the studied population (individually or in groups) so that it freely expresses any idea, feelings and motivations about the topic being studied (Oxman C.1998:9). Bear in mind that this interview establishes a relationship among persons and that you must have an opening question. Keep the persons talking all the time. Ask them to

clarify any ambiguous topics. Finally invite the interviewees to conclude the topic (Scribano & Zacarías, 2007).

Face to face interview

A face to face interview is a version of an in-depth interview. It is used in an English oral exam, in a market, custom research or in a qualitative research. It is useful for targeting detailed perceptions, opinions, and attitudes. This face to face interview can be done in person or by mass media (phone, video call or webinar). When carrying out this type of interview have ready a discussion guide or questionnaire. It is time consuming; however if it is a personal face to face interview or a video call it allows to probe for explanation of responses. It also gives you the opportunity to interpret body language and facial expressions (Marshall, 2016).

Clinical interview

Therapeutic or clinical interviews are another special kind of professional interview, in which the purpose is to increase understanding and produce change in the person being interviewed. (Sewell, 2016)

Semi-structured interview

The semi-structured interview is more commonly used in health care-related qualitative research. Such an interview is characteristically based on a flexible topic guide that provides a loose structure of open-ended questions to explore experiences and attitudes. It has the advantage of great flexibility, enabling the researcher to enter new areas and produce richer data. In addition, it helps the researcher to develop a rapport with the informants. Semi-structured interviews elicit people's own views and descriptions and have the benefit of uncovering issues or concerns that have not been anticipated by the researcher. They are commonly used when the aim is to gain information on the perspectives, understandings and meanings constructed by people regarding the events and experiences of their lives. However, this type of interviewing is claimed to reduce the researcher's control over the interview situation and take a longer time to conduct and analysis, in addition to the difficulties of the analysis process. (Zakiya Q., 2016) d) Semi-structured interview: This type of interview consists in having a series of variables that guide your interview to facilitate the analysis and interpretation of data. The difference among the survie and the semistructured interview is that the last one totally keeps the characteristics of a focus interview (Scribano & Zacarías, 2007).

History, stories and life tells

History, stories and life stories This is a social science technique where an individual lets us know directly or indirectly about his life, surrounding, environment, education, work, social status, religion, believes, history and personal social factors related to his life. To know a person you might want to go over all his/her personal belongings like diaries, PC, Cellphone, software, social media, facebook, what's up, twitter, instant gram, e-mails, any written material that exists related to this individual. You may also consider the autobiographies written by the subject in question or any letter related with the unit of observation.

Tells from life or life story are narrations done by the person talking about his own life or two individual talking about this very own person narrating what they know or remember, as well as a discussion about a topic where the unit of observation is involved. Finally, you might want to triangulate this versions to have a clear idea of the indicators you are trying to observe. Childhood, adolescence, and adulthood stories, background and references are extremely important when using this technique.

Discussion group

A Discussion group is the one where an interviewer asks a series of structured questions to the participants which have been selected according to the units of observation, indicators and objectives. The participants answer the questions individually without being interrupted by the others social pressure.

Focus group

On the other hand, a focus group is the one where once more interviewer answer questions in a group and where group member can easily interrupt them mean while they are answering the question. Discussion takes place like a debate.

QUANTITATIVE RESEARCH TOOLS

The most used quantitative research technique is the survey. In a quantitative survey you may use a short answer responses or dichotomous questions, multiple choice answers, paragraph, check boxes, drop down, linear scale, multiple choice grid and more. As you can see there are various question formats that can be adapted to your research needs. Here are some examples of dichotomous, multiple choice, ranch ordering scaling, rating scale, staple scale

The Dichotomous Question

This type of questions are generally answered “yes/no”. For example:

Have you traveled to Guatemala?

Yes

No

The Multiple Choice Questions

Where do you get the news from?

Television

Radio

Newspaper

Magazine

Word-of-mouth

Internet

Other: Please Specify _____

“For this type of question it is important to consider including an "other" category because there may be other avenues by which the person first heard about your site that you might have overlooked” (Question Pro Survey Software, 2017).

Rank Order Scaling

Rank order scaling questions allow a certain set of brands or products to be ranked based upon a specific attribute or characteristic. Perhaps we know that Toyota, Honda, Mazda, and Ford are most likely to be purchased. You may request that the options be ranked based upon a particular attribute. Ties may or may not be allowed. If you allow ties, several options will have the same scores.

Example:

Based upon what you have seen, heard, and experienced, please rank the following brands according to their reliability. Place a "1" next to the brand that is most reliable, a "2" next to the brand that is next most reliable, and so on. Remember, no two cars can have the same ranking.

Honda__

Toyota__

Mazda__

Ford__

The Rating Scale

A rating scale question requires a person to rate a product or brand along a well-defined, evenly spaced continuum. Rating scales are often used to measure the direction and intensity of attitudes. The following is an example of a comparative rating scale question:

Which of the following categories best describes your last experience purchasing a product or service on our website? Would you say that your experience was:

Very pleasant

Somewhat pleasant

Neither pleasant nor unpleasant

Somewhat unpleasant

Very unpleasant

The Semantic Differential Scale

The semantic differential scale asks a person to rate a product, brand, or company based upon a seven-point rating scale that has two bi-

polar adjectives at each end. The following is an example of a semantic differential scale question.

Example:

(7) Very Attractive

(6)

(5)

(4)

(3)

(2)

(1) Very Unattractive

Notice that unlike the rating scale, the semantic differential scale does not have a neutral or middle selection. A person must choose, to a certain extent, one or the other adjective.

The Staple Scale

The staple scale asks a person to rate a brand, product, or service according to a certain characteristic on a scale from +5 to -5, indicating how well the characteristic describes the product or service.

The following is an example of a staple scale question:

When thinking about Data Mining Technologies, Inc. (DMT), do you believe that the word "innovative" aptly describes or poorly describes the company? On a scale of +5 to -5 with +5 being "very good description of DMT" and -5 being "poor description of DMT," how do you rank DMT according to the word "innovative"?

(+5) Describes very well

(+4)

(+3)

(+2)

(+1)

Innovative

(-1)

(-2)

(-3)

(-4)

(-5) Poorly Describes

The Constant Sum Question

A constant sum question permits collection of "ratio" data, meaning that the data is able to express the relative value or importance of the options (option A is twice as important as option B)

Example:

The following question asks you to divide 100 points between a set of options to show the value or importance you place on each option. Distribute the 100 points giving the more important reasons a greater number of points. The computer will prompt you if your total does not equal exactly 100 points.

When thinking about the reasons you purchased our TargetFind data mining software, please rate the following reasons according to their relative importance.

Seamless integration with other software _____

User friendliness of software _____

Ability to manipulate algorithms _____

Level of pre- and post-purchase service _____

Level of value for the price _____

Convenience of purchase/quick delivery _____

Total 100 points

This type of question is used when you are relatively sure of the reasons for purchase, or you want input on a limited number of reasons you feel are important. Questions must sum to 100 points and point totals are checked by javascript.

The Open-Ended Question

The open-ended question seeks to explore the qualitative, in-depth aspects of a particular topic or issue. It gives a person the chance to respond in detail. Although open-ended questions are important, they are time-consuming and should not be over-used. An example of an open-ended question might be:

(If the respondent indicates they did not find what they were looking for...)

What products or services were you looking for that were not found on our website?

If you want to add an "Other" answer to a multiple choice question, you would use branching instructions to come to an open ended question to find out what Other....

The Demographic Question

Demographic questions are an integral part of any questionnaire. They are used to identify characteristics such as age, gender,

income, race, geographic place of residence, number of children, and so forth. For example demographic questions will help you to classify the difference between product users and non-users. Perhaps most of your customers come from the Northeast, are between the ages of 50 and 65, and have incomes between \$50,000 and \$75,000.

Demographic data helps you paint a more accurate picture of the group of persons you are trying to understand. And by better understanding the type of people who use or are likely to use your product, you can allocate promotional resources to reach these people, in a more cost effective manner.

Psycho-graphic or life style questions are also included in the template files. These questions provide an in-depth psychological profile and look at activities, interests and opinions of respondents (Question Pro Survey Software, 2017).

Questionnaire Method	Interview Method
1. Data is gathered indirectly.	1. Data is gathered directly.
2. No face to face contact between two.	2. There is face to face contact between interviewer and interviewee.
3. Interviewer should have the general knowledge of the topic.	3. Skillful interviewer is needed.
4. Interviewee will hesitate to write it.	4. Some confidential information can also be obtained.

5. We get written information only.	5. We get written and oral both type of information.
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Difference between Interview and Questionnaire

Source: (Dr. Pandey & Dr. Pandey, 2015)

Types of surveys

There are several types of surveys as telephone survey, online survey, in-person surveys, and mobile surveys. These surveys are administered by interviewers who have experience in research.

Production Tasks

Production tasks is usually used in research related with education purpose. It can be time consuming and you may use it for diagnostic purposes to see the beginning, developing and ending of a phenomenon. This tools is simply an exam to evaluate knowledge. It can be a written, oral, or a reading or listening comprehension test or any other type of exam you might consider appropriate for your research purposes.

Checklist

A checklist also known as ticklist or chart works as an inventory of behaviors or skills where the researcher checks indicators that are being observed (Hodder Education & Hachette UK Company, 2017). A checklist can be a quantitative or qualitative tool. If you look for specific criteria with a yes/no answer it becomes a quantitative tool. On the other hand, if you look for specific criteria or indicators and you want to deeply or briefly describe what you observe, it becomes a qualitative tool. A checklist is a list of aspects to observe as content, abilities, and behavior. It is a mechanism to verify if certain indicators or symptoms are present

in a phenomenon. A checklist provides more information if the researcher records additional comments on the context (Hodder Education & Hachette UK Company, 2017).

Research is a wide and changing topic. The paradigm and type of study as well as your research questions, objectives and hypothesis will guide you to what instruments to use in your research problem.

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