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EDITORIAL

Determining Sample Size

Last month I attended a conference presentation given by a senior qualitative researcher. His project used a longitudinal design with multiple interviews conducted over a period of months. In response to a question regarding sample size, he explained that he obtained the number of participants necessary for his study by looking at a table that Morse had published (see Morse, 1994, p. 225). He had used this number in his proposal for estimating the number of participants without considering the number of interviews. Because his design used many more interviews than the studies in Morse's table, he was clearly going to drown in data in a very short time. Evidently, it is time to clarify the issues in sample size once and for all. By clarifying the assumptions underlying sample size recommendations, I will not feel quite so responsible when someone takes my work at face value.

Estimating the number of participants in a study required to reach saturation depends on a number of factors, including the quality of data, the scope of the study, the nature of the topic, the amount of useful information obtained from each participant, the number of interviews per participant, the use of shadowed data, and the qualitative method and study design used. Once all of these factors are considered, you may not be much further ahead in predicting the exact number, but you will be able to defend the estimated range presented in your proposal. Because the actual number of participants is still an unknown, should data collection not proceed smoothly when writing the proposal, it is wise to overestimate the sample size rather than to underestimate so that funds are available to collect all the necessary data.

What Factors Should Be Considered?

The scope of the study. The principle is that the broader the scope of the research question, the longer it will take to reach saturation. Although there are distinct risks in narrowing one's topic too quickly, there are also risks in hesitating to narrow the topic once data analysis has started. One of the problems in refusing to focus is that when the topic remains broad in scope much more data are needed to reach saturation than if the study focused as data collection progressed. More data mean more participants, more interviews, perhaps even more data sources, and much more work without developing a better study. The study is larger but not necessarily richer. In addition, if the level of explanation is superficial and shallow, the study may even be worthless.

The nature of the topic. If the topic being studied is obvious and clear, and the information is easily obtained in the interviews, then fewer participants are needed

than if the topic is below the surface and intriguing but difficult to grab. Topics that are less than obvious frequently make for more important contributions and require a more experienced analyst, more data (possible from more sources), and certainly more participants. Therefore, if the topic is difficult to grab or if participants feel awkward talking about the topic, increase the number of participants.

Quality of data. Closely related to the difficulty of the topic is the quality of the information obtained in the interview. We know that some participants are able to reflect on the topic and express themselves better than others. Some participants may have more time to give the researcher and be less distracted, whereas some may simply be more articulate, have more experience in the topic, or be more willing to share these experiences with the researcher. If data are on target, contain less dross, and are rich and experiential, then fewer participants will be required to reach saturation. Although every study has at least a few poor interviews, strategies of secondary selection ease this problem somewhat (Morse, 1991). Complete the interview, but do not erase the tapes. Put the tapes aside, and do not bother to get them transcribed. However, if in retrospect the information from that interview falls into place (perhaps becoming an example of a negative case), then it can be entered into the analysis at that time.

Study design. As mentioned earlier, some study designs produce more interviews per participant (and therefore more data) than others. Longitudinal, preintervention, and postintervention (or experience) studies, in which the family or group is the unit of analysis (rather than the individual), all produce more data than the single interview per participant design. Consider such factors when estimating participant size.

The use of shadowed data. In addition to talking about their own experience, participants may discuss the experience of others, how their own experience resembles or differs from others, and why. I call this reporting on others' experiences "shadowed data." The use of shadowed data is very important. It provides the investigator with some idea of the range of experiences and the domain of the phenomena beyond the single participant's personal experience, and it provides some explanation of the rationale for these differences. Although shadowed data need to be verified, using shadowed data provides direction for theoretical sampling, and the clues that it provides in turn enhances the analysis. It simply moves analysis along more quickly.

Now, let us consider a very important principle: The quality of the data and the number of interviews per participant determine the amount of useable data obtained. There is an inverse relationship between the amount of useable data obtained from each participant and the number of participants. The greater the amount of useable data obtained from each person (as number of interviews and so forth), the fewer the number of participants.

This principle links the number of participants with the research method used. If, when using semistructured interviews, one obtains a small amount of data per interview question (i.e., relatively shallow data), then to obtain the richness of data required for qualitative analysis, one needs a large number of participants (at least 30 to 60). If, on the other hand, one is doing a phenomenological study and interviewing each person many times, one has a large amount of data for each

participant and therefore needs fewer participants in the study (perhaps only 6 to 10). Grounded theory, with two to three unstructured interviews per person, may need 20 to 30 participants, adjusted according to the factors discussed above.

There has been much discussion in the literature recently about the possibility of developing rigid rules rather than guidelines for qualitative inquiry. The number of participants required in a study is one area in which it is clear that too many factors are involved and conditions of each study vary too greatly to produce tight recommendations. We must spend as much time considering why we make certain decisions about our methods as we do about our analysis per se. In addition, I apologize to others who have taken published numbers on sample sizes presented elsewhere at face value.

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