COMPARISON OF QUOTA SAMPLING AND SNOWBALL SAMPLING

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Abstract
This article compared two nonprobability sampling techniques, Quota sampling and Snowball sampling. Even though nonprobability sampling is subjective in nature thus not being a good representative of the population, it is very useful in sample survey when the population is very large and also when randomization cannot be done. It can also be used to obtain estimates which will not be suitable for generalization pertaining to the population. While quota sampling is used in investigating traits of a certain subgroup and also relationships between the subgroups, snowball sampling on the other hand is used in study of deviant behavior and in situation where the population is hard to reach. Hence, the choice of any of these techniques depends on the nature of the research.
Key words: Quota Sampling, Snowball Sampling, Sampling Technique.

1.   Introduction
Sampling is the process of taking a part of the population for the purpose of making inference. In this process a sample will be taken basically because of the fact that resources are not enough to go through the entire units of the population or the researcher may not have enough time to cover the whole population. We have two broad types of sampling i.e. the probability sampling and the nonprobability sampling. In probability sampling, each element in the population has a known nonzero chance of being selected through the use of a random selection procedure [1], while in nonprobability sampling the selection of the sample from the population is done subjectively, hence, nonprobability sampling is a sampling technique where the samples are gathered in a process that does not give all the participants or units in the population equal chances of being selected [7]. Nonprobability sampling does not involve random selection and probability sampling does. Does that mean that nonprobability samples aren't representative of the population? Not necessarily. But it does mean that nonprobability samples cannot depend upon the rationale of probability theory. With nonprobability samples, we may or may not represent the population well, and it will often be hard for us to know how well we've done so. However, in applied social research there may be circumstances where it is not feasible, practical or

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theoretically sensible to do random sampling. Probably the most common reason for using nonprobability sampling is that it is less expensive than probability sampling and can often be implemented more quickly [1], hence the need to compare quota sampling and snowball sampling.

2. Quota sampling

Quota sampling is a type of nonprobability sampling in which the researcher selects sample according to some fixed quota. He uses his judgment to select from the population of the study after stratifying the population into groups on the basis of pre-specified characteristics. It is useful when time is limited, sampling frame is not available, the research budget is very tight or when detailed accuracy is not important. Subsets are chosen and then either convenience or judgment sampling is used to choose people from each subset. The researcher decides how many of each category is selected. This kind of sampling refers to selection with controls, ensuring that specified numbers quotas) are obtained from each specified population subgroup (e.g. households or persons classified by relevant characteristics), but with essentially no randomization of unit selection within the subgroups. No population list is used, but a quota, usually based on census data, is drawn up. For example, suppose that in the youth population aged 15-29 years, 50 per cent are known to be males and half of each sex in this target group is in the age group 22-29. If each interviewer had to obtain 20 interviews, this interviewer would be assigned to interview ten males and ten females, five of each aged 15-21, and five of each aged 22-29. It is usually the interviewers who decide how and where they find the respondents. In this case, age and sex are referred to as control variables. This method is usually justified in terms of its convenience, speed and economy. It assumes that the main variability lies across, rather than within the chosen subgroups, so that, once sufficiently small and homogeneous groups have been defined and properly represented, it is not important which particular individual units within any groups is interviewed.

One of the problems with quota samples is the difficulty to include some respondents rather than others. For instance, in the previous example, the interviewer may quickly find ten females, and five males in the age group 15-21, but it may take a lot of time finding males in the age group 22-29. Another problem is, if too many control variables are used, interviewers will waste a lot of time trying to find respondents to fit particular categories. For example, the interviews may be specified not only based on sex and age, but also based on occupation and household size. Thus, it is very important with quota sampling to use appropriate control variables.

3. Snowball Sampling

Snowball sampling is a special nonprobability method for developing a research sample where existing study subjects recruit future subjects from among their acquaintances. One of the most well-known forms of non-probability sampling is the snowball sampling method, which is particularly suitable when the population of interest is hard to reach and compiling a list of the population poses difficulties for the researcher. This sampling technique is often used in hidden populations which are difficult for researchers to access, or in cases where a sampling frame is hard to establish and it is assumed that cases are affiliated through links that can be exploited to locate other respondents based on existing ones. Because sample members are not selected from

a sampling frame, snowball samples are subject to numerous biases. For example, respondents who have many links are more likely to be recruited into the sample.

It was widely believed that it was impossible to make unbiased estimates from snowball samples, but a variation of snowball sampling called respondent-driven sampling has been shown to allow researchers to make asymptotically unbiased estimates from snowball samples under certain conditions [2]. Hence Snowball sampling and respondent-driven sampling allow participants to make estimates about the social network connecting the hidden population. Common examples of the use of snowball sampling involve sociological studies into hidden populations that may be involved in sensitive issues or illegal activities, such as drug use and prostitution [3]. As with random sampling, the snowballing method is not as uncontrolled as its name implied. The researcher is deeply involved in developing and managing the origination and progress of the sample, and seeks to ensure at all times that the chain of referrals remains within limitations that are relevant to the study. One of the dangers with snowball sampling is that respondents often suggest others who share similar characteristics, or the same outlook, and it is also compulsory on the researcher to ensure that the initial set of respondents is sufficiently varied so that the sample is not skewed excessively in any one particular direction.

Types of Snowball Sampling
Linear snowball sampling
This is a snowball sampling in which the researcher recruits a single participant, while the second nominee recruits the third participant. The chain continues to refer linearly up to the end of the sampling.

Exponential Discriminative And Exponential Non-Descriptive Snowball Sampling.
Exponential Non-Discriminative Snowball Sampling is a kind where every recruited participant in the research work recruits another participant while in the exponential discriminative snowball sampling not every recruited participant is going to recruit another participant; the chain is discriminating [4]. One of the most important uses of this technique is the possibility for the researchers to comprise people in the survey that they would not have known locating members of a specific population. Robert [6] used snowball sampling to study homeless persons living in Santa Barbara, California: He began this process by attending a meeting of homeless people he had heard about through his housing advocate contacts. One homeless woman invited him to where she promised to introduce him around. Thus a process of snowballing began. He gained entree to a group through people he knew, and through them gained entree to new circles [6]. Snowball sampling method doesn't require a multifarious planning and the staff used is considerably smaller in comparison to other sampling methods. One problem with this technique is that the initial contacts may form the entire sample and exclude access to some members of the population of interest. However, the main challenge of sampling a hidden population is those are mark out usually, and practicing illegal behaviors

4. Conclusion

Both quota sampling and snowball sampling are subject to limitations and biases mainly because not every element in the population has equal probability of being selected in the sample hence drawing inference about the population is hindered. Quota sampling may be used when a researcher is interested in investigating certain trait or characteristics of a certain subgroup. It also allows one to observe relationships between subgroups. Snowball sampling on the other hand is used where potential participants are hard to locate. The method is well suited for a number of research purposes and is particularly applicable when the focus of study is on a subtle issue, possibly concerning a relatively secretive matter, and thus requires the knowledge of insiders to locate people for the study and it is impossible to determine the sampling error or make inference about the population on the sample obtained [6].

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