

Combination of probability random sampling method with non probability random sampling method (sampling versus sampling methods)

Abstract

This article realizes a well define combination of probability random sampling and non-probability sampling, determination of differences and similarities was observed with the methods that is more consuming of time, cost effective and energy requiring or needed during the sampling is observed. The two shows similarities between them, the design is to provide sample that will go alone to answer research questions under investigation and generalizability of issues to an external situation or population that is for external validity. In case of the difference, the probability sampling lead in to greater breadth in positions of information from larger population of units selected that will represent the group. Then the non-probability sampling lead with greater depth of information with careful selecting of cases from a small number of units.

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Introduction

The probability random sampling techniques may result in complex random sampling Methods. The design is also called mixed sampling design. Such methods will either represent a combination of probability random sampling and non-probability sampling procedure for the selection of a sample. The probability random sampling methods deals with quantitative adapted study that involve selection of moderately great number of units from a population, in such a system way that there will determinable of every element of the population while the non-probability sampling is type of sampling with deviant or extreme location of cases where by selection is done best on specific purpose of interest instead of deliberate selection. Non probability sampling is sometimes known as outlier sampling in nature.

Probability random sampling

The history of probability random sampling was developed since from 60 to 70 years. Kiar from Norway was the advocate of sampling by the purposive method (non-probability random sampling) predominated Probability random sampling. It is a method that uses experimental design which is used in physical sciences survey, mostly social sciences for instance a survey for choosing a patient to be included in medical research or interviewing respond survey. This scientific sampling is quantitative in nature, it involve in selecting a fairly great total of units from a given population or from strata (subgroup). The sample is generated to address quantitative research with sampling question. Probability random sampling is used for the principle of randomization distribution in deriving a result from a sample and to obtain the problem in sampling. It also uses some form of modelling, validity of the model help in producing what is called valuation of accuracy. The finding for the probability random sampling is based on the target population such as totally salary of a worker. It focused on external validity in working with issues for transferring of assessment to others. The range of controlling sample for probability random sampling in social research sample is from five

hundred and above, in psychology, medical and educational research, the minimum sample size will often be from fifty and higher cases . The probability sampling in the same practice is having multiple samples size that can be determined by quantitative component.

The methods used for the probability random sampling include simple, stratified, systematic, cluster etc. The probability random sampling it has logic in selecting cases on representative of the total population. The techniques are used to represent some gravity component and rich for others. The Probability sampling means picking from numbers or choosing only people of a certain classes. The purpose of a qualitative sampling is to increase exterior validity. Probability sampling creates breath of statistics from a larger total of selected units to represent the entire population. The frame in probability random sampling are arranged to represent a distribution with a greater number of observations.

The non-probability sampling

Neyman in 1934 published a paper that laid the basis of sampling theory which explained the advantages of random sampling against purposive sampling in his papers example of an unsuccessful purposive sub sample drawn from the 1921 Italian head count by Italian census bureau. The non-probability sampling is purposive in nature that has to do with sample in addressing the questions for research. The research sample question is a qualitative type. The non-probability random sampling is limited on transferring of judgement considerations, generalization of frame of research finding, based on qualities evaluators' question. Non-probability sampling is focused on external value for transferring of issues. The series and control of sample in non-probability random sampling is typically smaller than 30 cases. The non-probability sampling have numerous sample of size which is determined by the purpose of a particular excellent component, by using more rigid size estimation procedures, for selecting quota sample case studies participant in focus group etc. The methods for non-probability random sampling uses wide range of sampling techniques that are common with purposive and probability. Each case will relate to address a setting set of questions in other to

have height information of satisfied value. Its common technique of represent specific portions and depth with richness for others. It is important to used purposive random sampling in judging of a city.

Selection in qualitative research sample has effect on the ultimate quality of the studying research. It does not in detailed described a sampling strategy which result to difficult interpretation of findings and therefore affect replication of the study. Qualitative sampling allows elasticity during the process of research, the researcher holds all the best to exchange the plan and situation stated earlier for the research so the data collected will reflect what is going to transpire in the field rather than speculating on what cannot be noticed. Qualitative

sampling is a sampling that has test, elaborates and upgrades groups so that further sampling will be done to develop their categories with the relationship and interrelationship, as the interview is continue the question result will be subject to changed.

Purposive sampling techniques are used in qualitative research by selection of units from individuals, institutions base on a particular purpose that is associated with answering research analysis questions. The purpose of qualitative sampling is to add transferability. Probability random sampling can be seen as deviant or extreme case sampling which is known as sampling outlier, This consist of selecting cases at the near end of a distribution of cases of interest (Tables 1-4).

Table 1 Combination of probability random sampling and purposive random sampling

Measurement of contrast	Purpose of the study	Probability sampling
Names	Purposeful sampling Nonprobability sampling Qualitative sampling	Scientific sampling Random sampling Quantitative sampling
Overall purpose of sampling	To generate a sample that will address research questions	To generate a sample that will address research questions
Generalizability of issues	Transferability or external validity of issues	form of external validity of issues
Rationale for the selection of case or units	Addressing of a specific purposes relating to research questions. The researcher will selects cases that he/she will learn most from it	Representativeness. The researcher selects cases that will be collectively represent the whole population
Sample size	Small sample size usually 30 cases or less	large sample size enough to establish representativeness usually atleast 50 units
Depth/breadth of information per case/unit	Focus on depth of information generated by the cases	Focus on breadth of information generated by the sampling units
When a sample is to be selected	Before the study will begins, during the study or both	Before the study begins
How the selection is made	Seeking for expert judgement	Base on application of mathematical formulas
Sampling frame	Characteristics of informal samling frame with smaller number of observation	Formal sampling frame with a larger number of observation
Generating form of data	Generate numerical data focusion on narrative data	Focusing on numerical datd, narrative data can also be generated

Table 2 The below alphabet in the table A, B, C, D and E consist sets where;

Set A contain the qualitative research totality with purposive random sampling, set E contain the quantitative research totality with probability random sampling. Set B symbolize predominantly qualitative research with some element of quantitative research. Set D symbolize predominantly quantitative research with some predominantly qualitative research. Set C symbolize totality combined joined methods research and sampling. The arrow represents the non-probability join sampling variety. Movement in the direction of the middle of the field indicating a greater combination of research methods sampling, moving away from the centre and near the end which show that the research methods and sampling (quantitative and Qualitative) are further different or separated

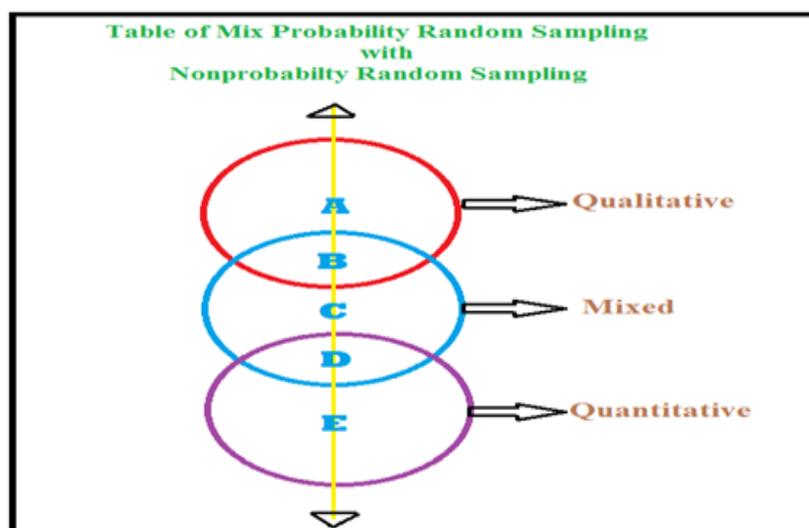


Table 3 Probability random sampling methods

TABLE OF PROBABILITY RANDOM SAMPLING METHODS			
Types of sampling techniques	Producing only Quantitative data	Poroducing only Qualitative data	Producing both Qualitative and Quantitative data
Probability sampling techniques	Often in occurrence	Rarely in occurrence	Occasionally in occurrence
Nonprobability Sampling	Rarely in occurrence	Often in occurrence	Occasionally in occurrence
Combined methods of sampling approach	Occasionally in occurrence	Occasionally in occurrence	Often in occurrence

Table 4 Combined sampling methods

TABLE FOR COMBINED SAMPLING METHODS	
Measurement of Difference	The combined sampling methods
Generalizability issues of over all purpose of sampling	Designed for generating sample that will address research questions . Some components of research design focuses on external validity of issues while other components focuses transferability of issues
Number of methods rationale for selecting cases or unit	All those employed by random sampling and nonrandom sampling for some component of research design, there is focus on representativeness while other component focuses on seeking out rich information cases
Size of the sample	There are multiple of sample size in the study, samples sizes vary in size depending on the research component and question from a smaller number of cases to a larger number of units of analysis
Breadth/ Depth information per case or unit	Focusing both on breadth and depth of information across the research component
When the sample is to be selected	Mostly sampling decisions are made before the study begins, but qualitative focused on questions that may lead to the development of other samples duringg the study
How to select the sampling	There is focusing on expert judgement sampling across the sampling decisions, especially because they interrelated with one another. some quantitative focuses on component of that may require the application of mathematical formulae for sampling
Generating of sampling frame form of data	Formal and Informal sampling frames are both used. Both numeric and narrative data are typically generated. Ocassionall combined sampling methods may crop only narrative or only numeric data

Probability random sampling

Sample size of probability random sampling: The sample sizes determination will be estimated in achieving a given level of statistical precision that will be define in terms of estimating the effect size and required power text. In common randomization size estimation procedures are used for quantitative size of the purposive, by combining normal qualitative criteria with samples larger enough to ensure general comparability with quantitative sample as required. Information per unit for the probability random sampling focused on breath information and the ability to provide estimation for the total population of interest, in common combining depth and breadth. Sample size selection for probability random sampling is done before

the beginning of the data collection. In common the overall strategy will normally be defined before data collection start, but sub samples may be identified as the analysis advances. Probability random sampling uses formula in selecting statistical method. It has a common overall strategy that must be developed with different sub samples being generated, for this it is essential ensure that procedures ensures the different sample are comparable. probability random sampling uses formal sampling frame to cover the whole population of interest for consideration of time and cost including existing sampling frame (such as a list of families registered with an agency may be used, in common uses master sampling frame from which different sub sample will be generated.

Non-probability random sampling: The size is of non-probability sampling is determine by judgment when the time and resources permit researchers continue to sample more cases until no new information is being obtained. Also in common randomization size estimation procedures are used for quantitative size, the purposive is by combining normal qualitative criteria with samples larger enough to ensure general comparability with quantitative sample when required. Non-probability random sampling focuses on depth and breadth information from smaller number of carefully selected circumstances. The selection of non-probability random sample size is also done before the study begins for data collection or after the initial round of data collection. Non-probability random sampling is based on judgment with a common practice of overall strategy which must be developed with different sub samples being generated, the procedure for different sample are essentially are comparable. The frame in purposive sampling is the characteristic of informal, which base on expert judgment of a researcher or any available sources that will be identified by the academia. Framing the sample is based on judgment advice from experts combined with researchers judgement and possibly checked through rapid exploratory studies for example when the samples units example the community. Both have in common a master sampling frame from which different sub sample will be generated.

Conclusion

In conclusion base on the comparison between the probability random sampling and non probability sampling. Both show a couple of similarities between them. These in common practice design to provide sample that will go alone to answer research questions under evaluation. The common practice involves generalizability of issues to an external situation or population that is for external validity. While their difference in probability sampling lead in to greater breadth in terms of information from larger population of units selected that will represent the group and word the non-probability sampling is leading to greater depth of information when careful selecting of problems from a small number of units is achieved.¹⁻²²

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Conflict of interest

None.

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