

Chapter 10

Cases on Sampling in the Business Setting

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1. Case Study 1: Sampling in Marketing for a Telecommunication Company

Statistics from the Malaysian Communication and Multimedia Commission stated that out of every 100 household, 77.9 of those people are using broadband and 141.6 out of 100 people are using mobile phones. This shows that there is a huge market for the telecommunication industries, therefore, the telecommunication companies would have to be on their toes!

As a director of marketing for a telecommunication company, it is extremely important for you to understand your target audience, and how promotion could be done better to get more product sales. Before actually promoting new products, you are required to first conduct a market research on the four main telecommunications company in Malaysia to see why customers preferred one company over their other, or which service offered were preferred, how would you sample the participants for your study and why? This is an important first step because once, you reach people who are irrelevant, the study might not be as strong.

Case Study 2: Sampling for Human Resource

Human resource is the division that handles the wellbeing of employees, including sending employees for training, apart from recruiting and hiring the employees. Sometimes, there are multiple things that a human resource department needs to do and this would require them to know who those targeted people that require their attention.

If you were working in the human resource department for a big company with 5000 employees, and was asked to conduct a study on the reformulating of working hours from 8 a.m. to 5 p.m. to a flexi time schedule, how would you sample the employees and why?

Teaching Note

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Population and Samples

Probably most of you have heard of population and samples, but what exactly is a population and what exactly is a sample? What are the differences between the two and why is it important to know the differences? Here, I will lay out the differences between the two and the important contributions it has to research.

Population

Population is the entire group of people that a researcher would like to investigate. This is usually the group of people, events, or anything that the researcher wishes to understand more about.

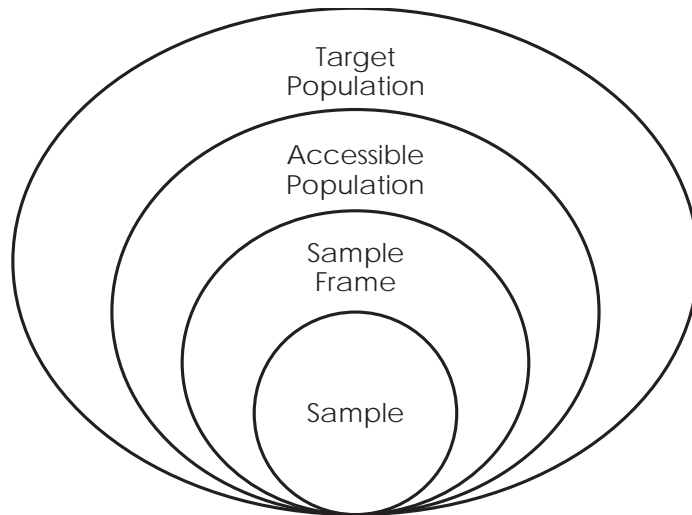
Samples

Samples are the subset from the population. The sample, or the sample unit is where the researcher collects data from to infer meaning on the whole population.

Now we know about population and samples, but there is actually two more steps in between population and samples, which is the accessible population and the sample frame. Why do we need these two steps? We need them because sometimes it would be impossible to have access to everyone who works in an SME company. So sometimes researchers would go to a more realistic population which is the population that they have access to, such as SME's in one state. The researcher then would compile a list of names of people who work in an SME company in that particular state, and this would be the sampling frame. From the

sampling frame, the researcher would draw out a number of people according to their research needs and the names they draw out would be the sample, or sample unit for the study.

Figure 1: Layers of Population



When sampling, there are two main types of sampling which is 1) probability sampling and 2) non-probability sampling. In quantitative research, the main purpose of conducting a research is to infer meaning to the whole population, therefore the research conducted must be generalizable. For a research to have generalizability, researchers should use probability sampling.

Probability sampling is when everyone in the population has an equal chance of being selected. There are four types of probability sampling which are:

1. Simple Random Sample
2. Systematic Random Sample
3. Stratified Random Sample
4. Cluster Random Sample

Simple Random Sample

Simple random sample is where everyone in the list has an equal chance of being selected. Simple random sample could be as simple as getting a list of names, cutting up those

names, and putting them in a hat. Then the researcher can randomly pick names out from the hat.

Systematic Random Sample

Systematic random sample is where there is a name list (or the sample frame), and the researcher would pick every n^{th} name from the list. For example, I want to pick out every 5th person from the list, so person 5, person 10, person 15 and so on would be chosen for the study. It does not necessary start at 1. The researcher could set the number to start from person 8 and pick every 5th person.

Stratified Random Sample

Stratified random sample is when the researcher would like groups in their sampling, to represent each category in their study. For example, the researcher would like to sample some workers from small companies, and some workers from medium companies. So two groups would be made. If the researcher would like to have four groups, representing students from four countries, then a group for Malaysia, a group for China, a group for German and a group for Iran could be made. The researcher would then randomly sample students into each group until they get the number of people they want for each group. Stratified sampling is used sometimes because there might not be as many people in one category compared to the other, and these people might not be drawn if it was just a simple random sample.

There are two types of stratified random sampling which are proportional stratified sampling and non proportional stratified sampling. In proportional stratified sampling, it mirrors the “real life” setting of the population. For example, in a country, there are 70% of small enterprises and 30% of medium enterprises. Therefore, in the study, if the researcher needed 100 workers, they would sample 70 workers from small enterprises and 30 workers from medium enterprises. In a non proportional stratified sampling, the researcher would allocate an equal number for each group. If they needed 100 workers from enterprises for the research, 50 would be allocated for the workers from small enterprises and 50 would be allocated for the workers from medium enterprises.

Cluster Sampling.

Cluster sampling is when the population is has homogeneity. This is where the population has similar characteristics with each other, such as people in an office, or teachers in one school. Cluster sampling is when the researcher samples everyone from the same office, or the same classroom. For example, there are 100 companies in one state. Rather than

sampling 300 workers from the 100 companies, the researcher sampled 30 companies from the 100 companies available.

Non Probability Sampling

In non probability sampling, there is an unequal chance of being selected into the study. This is when there might be bias in the sampling procedure. There are many types of non probability sampling, but the five top non probability sampling are:

1. Convenience sampling
2. Purposive sampling
3. Snowball sampling
4. Quota sampling

Non probability sampling is mostly used in qualitative research, as it might be difficult for them to sample the people with the exact information they want if they were to use a probability type sampling. This is because in qualitative research, the number of sample is not as big as to those in quantitative researches.

Convenience Sampling

Convenience sampling, as the name implies, is when the researcher samples from those who they have access to, where it is convenient for them to sample to population. Such as a researcher sampling people from his/her work place. A teacher sampling her students because it is convenient for them. A university professor choosing the university they work at as their population to sample from. These are all forms of convenience sampling. Usually, convenience sample is used in the exploratory stage where it is quicker and easier for researchers to get basic information effectively.

Purposive Sampling

Purposive sampling is when the researcher samples certain people because they yield some information that the researcher wants. It is sometimes necessary to target specific group of people who have those information that we need.

Snowball Sampling

Snowball sampling is when participants from a research refers other members of their population into the research. This might be good for some closed group of populations that the researcher might not have access to. For example, the researcher knows one person from a company that they would like to conduct a research on, and that participant could recommend his/her friends into joining the research.

Quota Sampling

Quota sampling is the qualitative version of stratified sampling. Here the purpose is still to have adequate groups represented in the study, but the way of selecting participants are up to the researcher's own judgments..

Case Studies

These case studies are suitable for marketing, business and research methodology. These cases are designed for undergraduate as well as masters students, with a level of 2, 4 and 5 (understand, analyse and evaluate) in Bloom's Taxonomy.

Lecturers may ask students to get into groups of 5 or less and discuss the given scenario. Students may have up until 30 minutes to talk among themselves and evaluate which would be best for each of the scenario. The lecturer then may ask the group to present their findings as well as the reason why certain things were chosen over another. After each group has presented their materials, the lecturer may conclude the class with the answer key, which could be found below.

Problem Solution

Case Study 1: Sampling in Marketing for a Telecommunication Company

First, students would need to use the sampling process from populations, to accessible populations to sampling frame and sample. The target population here would be people who use mobile phones. The accessible population might be people who use mobile phones in Kuala Lumpur, and the sampling frame could be the list of names they are able to obtain of those who use mobile phones in Kuala Lumpur. Then, students could answer this from different angles. Here, students could use stratified sampling, either proportional or non-proportional, depending on what their reasons are. They might want to use proportional

sampling because they might want it to portray it as ‘real life setting’ as possible, therefore they can look at how many people really use the first company, second, third and fourth company. If there were 40% of people using the first company, 20% of people using the second company, 15% of people using the third and 15% of people using the fourth, they might want to sample 40% of people who use company 1 into their first group, 20% of people who use company 2 into the second group, 15% of people who use company 3 into the third group and 15% of people who use company 4 into the fourth group. If students wanted to give equal voice to all the participants, they might want to use non proportional sampling, where the groups have equal number of people represented. After establishing the usage of proportional or non-proportional stratified sampling, they can then pick which of the other sampling methods to use in order to get samples into their groups. Such as using systematic random sample where every 8th person from the list goes into group 1, after that is complete, every 4th person goes into group 2, and so forth. They could also use simple random sample to randomly pick names from a list obtained from the list of names.

Case Study 2: Sampling for Human Resource

First, students would need to use the sampling process from populations, to accessible populations to sampling frame and sample. The population and accessible population here would be the same as there is only one company which is employees from Company X. The sample frame would be the list the HR department would like to sample from. Then students could answer this from different angles. One, they could use simple random sample to randomly pick names. Two, they could use stratified sampling to pick every nth person from their sampling frame. Third, they can use stratified sampling based on how many departments there are in the company. They can also use stratified sampling if they think there are companies in different states. Within stratified sampling itself, students could pick the proportional or non proportional stratified sampling.

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