***Research methodology***

***1. Sampling***

When you conduct research about a group of people, it is rarely possible to collect data from every person in that group. Instead, you select a sample. The sample is the group of individuals who will actually participate in the research. To draw valid conclusions from your results, you have to carefully decide how you will select a sample that is representative of the whole population.

* The population is the entire group that you want to draw conclusions about.
* The sample is the specific group of individuals that you will collect data from.
* Sampling frame is the actual list of individuals that the sample will be drawn from. Ideally, it should include the entire target population.

***2. Sampling techniques***

***2.1 probability sampling***: involves random selection, allowing you to make strong inferences about the whole population.

***2.2 non-probability sampling***: involves non-random selection based on convenience or other criteria, allowing you to easily collect data.

***Probability sampling methods***

Every member of the population has an equal chance of being selected. It is mainly used in quantitative research. If you want to produce results that are representative of the whole population, probability sampling techniques are the most valid choice.

There are three main types of a probability sample.

***1.simple random sampling***

Every member of the population has an equal chance of being selected. The sampling frame should include the whole population. To conduct this type of sampling, you can use tools like random number generators or other techniques that are based entirely on chance.

To create a simple random sample, there are six steps.

*Step one: define the population*

Suppose that a researcher wants to understand more about university students problems with writing. Let s say that a university has roughly 10000 students. These 10000 students are our population n. since we are interested in all of these university students, we can say that our sampling frame is all 10000 students. If we were only interested in female university students, we would exclude all males in creating our sampling frame, which would be much less than 10000 students.

*Step two: choose your sample size*

 Let s imagine that we choose a sample size of 200 students. The sample is expressed as n. this number reflects the limit of our budget and the time we have.

*Step three: list the population*

To select a sample of 200 students, we need to identify all 10000 students at the university. You would most likely have had to receive permission from student records to view a list of all students studying at the university.

*Step 4: assign numbers to the units*

We need to assign a consecutive number from 1 to n, next to each of the students.

*Step 5: find random numbers*

Next, we need a list of random numbers before we can select the sample of 200 students from the total list of 10000 students. These random numbers can either be found using random number tables or a computer program that generates these numbers for you.

*Step 6: select your sample*

Imagine the first three numbers from the random number table were

0011(the 11th student)

9292 (the 9292nd student)

2001 (the 2001st student from the list)

We keep doing this until we have all 200 students we want in our sample.

***2. Systematic sampling***

Every member of the population is listed with a number, but instead of randomly generating numbers, individuals are chosen at regular intervals. For example, all employees of a company are listed in alphabetical order. from the first ten numbers, you randomly select a starting point. Number 6 . from number 6 onwards, every 10th person on the list is chosen (6,16,26,36 and so on).

***3. Stratified sampling***: involves dividing the population into sub-populations that may differ in important ways. It allows you to draw more precise conclusions by ensuring that every subgroup is properly represented in the sample. You divide the population into sub-groups based on relevant characteristics (gender, age, job role…etc).

***Non-probability sampling methods***

***Convenience sampling:*** the sample includes the individuals who happen to be available or accessible to the researcher. A disadvantage of this method is that the elements who take part in the study may be different from those who choose not to. the sample may not be representative. the method can t produce generalizable results.