

# “What is the process of gathering and analyzing data to obtain statistical information?”

Authored by  
**stats writer**

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Gathering and analyzing data to obtain statistical information is a systematic process that involves collecting, organizing, and interpreting data in order to understand and draw meaningful insights from it. This process typically starts with identifying the research question or problem, followed by designing a data collection method and selecting a sample that is representative of the population. The data is then collected and organized in a structured format for analysis. Various statistical methods are then applied to the data to uncover patterns, trends, and relationships. The results are then interpreted and used to draw conclusions and make informed decisions. This process requires careful attention to detail, critical thinking, and knowledge of statistical techniques to ensure the accuracy and validity of the information obtained.

## Statistics - Gathering Data

### Gathering Data

Gathering data is the first step in statistical analysis.

Say for example that you want to know something about **all the people in France**.

The **population** is then all of the people in France.

It is too much effort to gather information about all of the members of a population (e.g. all 67+ million people living in France). It is often much easier to collect a smaller group of that population and analyze that. This is called a **sample**.

### A representative sample

The sample needs to be **similar** to the whole population of France. It should have the same characteristics as the population. If you only include people named Jacques living in Paris who are 48 years old, the sample will not be similar to the whole population.

So for a good sample, you will need people from all over France, with different ages, professions, and so on.

If the members of the sample have similar characteristics (like age, profession, etc.) to the whole population of France, we say that the sample is **representative** of the population.

A good **representative sample** is crucial for statistical methods.

**Note:** Data from a proper sample is often just as good data from the whole population, as long as it is **representative!**

A good sample allows you to make accurate conclusions about the whole population.

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