

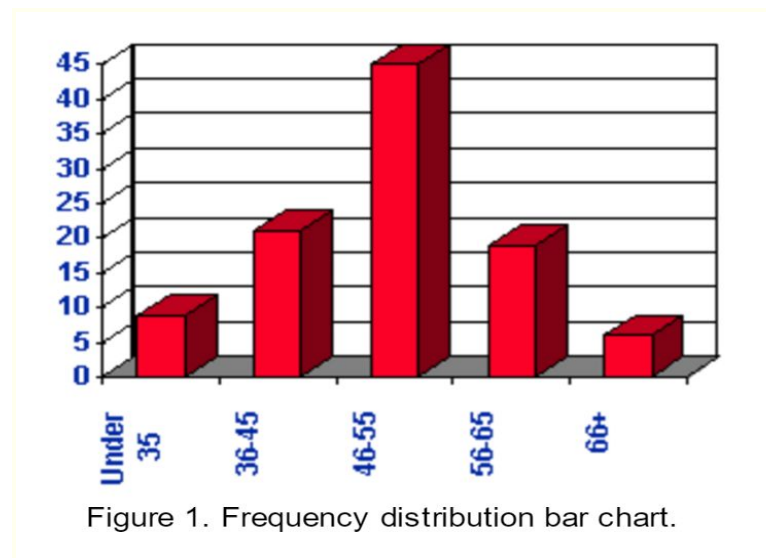
# Descriptive statistical analysis

## Background

In descriptive statistical analysis the aim is to summarise data. The basic features of the data are being described with descriptive statistics, such as mean, median, mode and standard deviation. Descriptive statistical analysis is done using numerical data.

The method could be used for many kind of topics in mathematical information technology, for example when comparing the efficiency of different algorithms with multiple executions. Or it can be used together with other quantitative methods to compare and summarize the results gotten from data. It can also be used to compare samples from another study with another.

In descriptive statistics tools like statistical graphs, statistical ratios and statistical models can be used. The data can be depicted in two ways, as a table or as a statistical graph. Figure 1 below is an example of the descriptive statistics. It describes a distribution of an age frequency with a range of five years.



The method is quantitative. It maybe fits best in 'mathematical approaches' in [Jarvinen's taxonomy of research methods](#).

Article: Clinical nursing supervision in the workplace--effects on moral stress and job satisfaction.

Doi: 10.1046/j.1365-2834.1999.00106.x

## **Data collection**

In general statistical analysis can be done for all kind of empirical data. Also descriptive statistical analysis can be used for both existing or self-produced materials and it can be done using methods like surveys, interviews, observations etc. Only important thing is that material yields to numerical format. The method is used for all the data covering the research topic, so usually it is used for a big amount of data.

Depending on the research topic it can use either big amount of data with few measures, but also a small sample with lots of measures. The actual meaning of the descriptive statistics is to reduce large amount of data to a simpler and easily understandable form and give numerical values of the research topic.

The resources needed for data collection depend on the research topic, but in order to get reliable and scientific results extensive data is needed and that demands huge resources. Technology could be used in a variety of ways for data collection. For example computers can be used for surveys or data storages for different kind of materials.

## **Implementation**

The aim in this study is to examine the battery life of mobile phones. The sample is hundred different mobile phones that were selected so that they would best represent the field of modern mobile phones. With descriptive statistical analysis we can calculate the mean battery life for mobile phones as well as standard deviation and other measures of interest.

In our opinion the method is not the best for our discipline, but it can be utilised in many different ways with other methods. Usually it is linked as a part of every quantitative research and it can be a basis of an another research. For example the results of classification could be analysed with these statistics as well as any results that need to be compared to previous results with a simple way.

The reliability of the method is good for the research data, because the statistics are always the same when repeated. The method is not intended for generating knowledge about anything other than the data within reach, so the good validity can be assessed with a big amount of data. If the same statistics would be calculated for another, but similar, dataset, the results might be completely different.

The ethical issues depend on the research topic, but with studying the mobile battery life, we see no ethical issues. Also in general statistics (e.g. mean) can not be linked back to individuals, although the data from which the statistics are being conducted can include some sensitive information, when ethics should be more considered.