**Population vs. Sample**

While researching, one has to identify the population and the sample separately to properly analyze and interpret the data. Consider the case when a researcher examines the mean family income of residents in a city.

**Scenario:**

A researcher is interested in finding out the average salary of households residing in a city. Because it is not feasible to survey all families within the city, they plan to get data from 100 families.

**Definitions:**

**Population**: The whole group for whom the researcher is interested in collecting data.

**Sample**: A portion of the population is being sampled for the study to represent the entire group.

**Application to the Scenario:**

**Population**: All families within the city. This is the entire group whose average income the researcher would like to investigate.

**Sample**: The 100 surveyed households. These households are selected to be representative of the overall population and yield information about the city's average family income.

**Conclusion:**

By examining data in the sample, it is possible for the researcher to estimate income patterns for the overall population. It is, however, important that the sample is randomly chosen to prevent bias and achieve accurate findings.