

## **Ratio numbers**

Ratio numbers can be distinguished into the following four number categories [Schröder 1985]:

### **Proportion numbers**

They give the portion of a partial value to a total value as a fraction ( $\frac{3}{8}$ , 0,375) as a percentage (%) or per mill (‰). The percentage is calculated by (partial value x 100) / total value. (For per mill calculation x 1000). Proportion numbers are the basis for pie charts, bar charts, band charts and triangle diagrams because they allow for an interior comparison, i.e. how the total value is composed of.

### **Measurement numbers**

Measurement numbers, not to be confused with measures, are ratio numbers that indicate the ratio between similar values, such as in respect to an average value (e.g. pH value of the soil).

### **Index numbers**

A special case of measurement numbers is the index numbers, which indicate relative differences of time values. In this case the base of 100 is defined by a suitable point in time, average or target value. This way it can be determined if all other values were increased or decreased in respect to 100. For example, the development of money for which a value = 100% is set for a base date. Other examples are inflation and the development of stock values.

### **Relation numbers**

Relation numbers indicate heterogeneous values that relate to each other. For example, the per capita income. Are these values related to areal values (e.g. inhabitants per km<sup>2</sup>), they are named density numbers. This means that an average value for the area is given.

## **Literatur**

[Schröder 1985]

Schröder, P.: Diagrammdarstellung in Stichworten. Hirt's Stichwortbücher, Verlag Ferdinand Hirt, 1985.