

Title: Basic statistics

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Abstract: The aim of this thesis is to introduce the basics of statistics. The text is divided into two parts thematically. Part 1 deals with statistics which is, according to the Czech educational system, included in the curriculum of secondary schools. This part introduces basic terminology as well as the possibilities of data presentation – table of frequencies and graphic representation. The chapter on graphic representation concludes with the most common mistakes occurring during this process and shows the possible abuse of data manipulation. The next topic presented is the characteristics of position and variability. At the end of Part 1, the term correlation is defined and, subsequently, the difference between correlation and causality is explained. The main contribution of Part 1 is in its didactic approach. The majority of statistical terms is presented on a single set of data, which can help the reader to be more easily oriented when he or she begins to study statistics. Part 2 deals with the statistics taught at secondary schools and universities. After introducing the basic terminology of mathematical statistics, it is shown how frequency histogram can be used to estimate a chart of random variable density and how cumulative frequency histogram can help to estimate a distribution function chart. Subsequently, a specific example is used to illustrate the basic principles of Scatter Diagram Theory. Part 2 concludes with a scatter diagram estimate of mean value and of diffusion.

Keywords: statistics, histogram, diagrams, correlation, scatter diagram estimate