

Bachelor thesis focuses on the exponential power distribution, which forms a broader class of probability distributions that includes, for example, the normal and Laplace distributions. Due to its flexibility, it is well-suited for modeling various types of data, making it applicable not only in theory but also in practical problem-solving. The aim of the thesis is to analyze the properties of this distribution and to estimate its parameters using the method of maximum likelihood and the method of moments based on data — from a random sample. Both methods are described theoretically and subsequently applied. The main contribution of the thesis consists in a simulation study conducted in the R environment using the `normalp` package. This study investigates the accuracy of parameter estimates of the exponential-power distribution depending on sample size. The parameters are estimated via numerical optimization using the Nelder–Mead method. The simulation results show that the accuracy of the parameter estimates increases with increasing sample size.