This bachelor thesis deals with moments and cumulants as key concepts in probability and statistics. The theoretical part defines moments, mean, variance, and higher moments, including their applications in probability theory. Furthermore, the moment-generating function and characteristic function are discussed. Cumulants are introduced as functions of moments with emphasis on their significance and relationships with moments. In the empirical section, calculations of moments and cumulants are performed for selected probability distributions. The Fréchet-Shohat theorem, also known as the problem of moments, is presented. In the conclusion, the achieved results are summarized.