

# A Study of Distribution Functions in Reliability Engineering

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**Abstract:** *As we are ushering in a digitally empowered society and knowledge economy under the umbrella of digital India programme initiated by Government of India and progressing ahead in an era of 5G technology. But one cannot guarantee for an error-free and complete perfection of a system or a unit. Failures are a part of life in this modern era of science and technology. The failure of a component or a system is possible at any instant and failure rate of a unit or a system can be constant or may vary with time. Everyone listens that a particular brand of mixer, refrigerator or automobile is reliable or unreliable in our daily life. In this modern era of Science and technology emerging with new concepts of artificial intelligence and machine learning, reliability is a subject concerned with all including academicians and scientists ,practising engineers and manufacturers, sales managers and customers, economists and government leaders as well. The present paper seeks to analyze the significance of distribution functions applicable in reliability of a unit or a system. Each of distribution functions such as Binomial, poisson, exponential, Weibull, Rayleigh, normal distribution have their unique contribution in study of problem of reliability engineering.*

**Keywords:** Reliability, Binomial distribution, poisson distribution, exponential distribution, Weibull distribution, normal distribution.

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