

Applications and properties of Conformable Fractional Lindley Probability Distribution

By

Jamil Shalby

Supervisor

Ma'mon Abu Hammad

Co-supervisor

Amer Dababneh

Al-Zaytoonah University of Jordan

Abstract

In this thesis, we are going to study the Lindley Probability Distribution and examine the entropy measures in fractional situations to present the conformable fractional Lindley probability distribution. To clarify its behavior and offer potential applications in dependability and risk analysis, the conformable fractional Lindley probability distribution CDF, survival function, and hazard function are constructed. Conformable fractional analogs of statistical measures, such as expected values, r^{th} moments, mean, variance, skewness, and kurtosis, can be used to comprehend the higher-order features and central tendencies of statistics more fully. Furthermore, important instruments for measuring uncertainty and randomness are presented, including conformable fractional analogs of well-known entropy measures like Tsallis, Renyi, and Shannon entropy.

Keywords: conformable fractional derivative, conformable fractional integral, entropy, probability distribution.