

## A Two-Pronged Truncated Deferred Sampling Plan for Log-Logistic Distribution

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**Abstract :** This paper is aimed at developing a sampling plan that uses information from precedent and successive lots for lot disposition with a pretention that the life-time of a particular product assumes a Log-logistic distribution. A Two-pronged Truncated Deferred Sampling Plan (TTDSP) for Log-logistic distribution is proposed when the testing is truncated at a precise time. The best possible sample sizes are obtained under a given Maximum Allowable Percent Defective (MAPD), Test Suspension Ratios (TSR), and acceptance numbers (c). A formula for calculating the operating characteristics of the proposed plan is also developed. The operating characteristics and mean-ratio values were used to measure the performance of the plan. The findings of the study show that: Log-logistic distribution has a decreasing failure rate; furthermore, as mean-life ratio increase, the failure rate reduces; the sample size increase as the acceptance number, test suspension ratios and maximum allowable percent defective increases. The study concludes that the minimum sample sizes were smaller, which makes the plan a more economical plan to adopt when cost and time of production are costly and the experiment being destructive.

**Keywords :** consumers risk, mean life, minimum sample size, operating characteristics, producers risk

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