NEW ACCEPTANCE SAMPLING PLANS BASED ON TRUNCATED LIFE TESTS FOR KOMAL DISTRIBUTION

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ABSTRACT

When it is impractical to examine every item in a production batch, acceptance sampling methods are used to improve and control quality. This process relies on a random sample to determine whether to accept or reject the entire batch. Variations in the lifetime distribution of the sample are considered, as they may differ across the batches. In this research paper, we investigate a new lifetime distribution, the Komal distribution, to develop a distinctive single-acceptance sampling plan. In the development of a new acceptance sampling plan, it is essential to account for the constrained timeframe available for conducting the mean lifetime evaluation. This consideration is instrumental in determining crucial plan parameters, such as the operating characteristics function and the minimum requisite sample size. Based on these factors, the risk incurred by the producer for the entire material batch can be calculated.

KEYWORDS: Acceptance Sampling Plan; Consumer's Risk, Operating Characteristic Function, Komal Distribution, Producer's Risk, Truncated Life Tests