



ACCEPTANCE SAMPLING BASED ON LIFE TESTS: PARETO-RAYLEIGH MODEL

R. Subba Rao¹ G.Prasad² and R.R.L.Kantam³

¹Shri Vishnu Engg . College for Women, Bhimavaram (India)

²Department of Statistics, Aditya Degree College, Rajahmundry, (India)

³Dept. of Statistics, Acharya Nagarjuna University, Nagarjuna Nagar (India)

ABSTRACT

Alzaatreh, et al. (2012) proposed a new family of distributions called Transformed-Transformer family (or T-X family). A new combination of T-X family is proposed. Two standard probability models Pareto and Rayleigh are used to define a new T-X family called Pareto – Rayleigh model and is considered as a Life – testing model. The problem of acceptance sampling when the life test is truncated at a pre-assigned time is discussed with known shape parameters. For various acceptance numbers, confidence levels and values of the ratio of the fixed experimental time to the specified mean life, the minimum sample size necessary to assure a specified mean life time worked out. The operating characteristic functions of the sampling plans and producer's risk are derived. The ratio of true mean life to a specified mean life that ensures acceptance with a pre-assigned probability are tabulated. The results are presented by an example.

Key Words: T-X family, Pareto - Rayleigh model, Operating Characteristic function, Sampling plans, truncated life tests.