

ON A NEW GENERALIZED LOGISTIC DISTRIBUTION

Prabhata K. Swamee, Pushpa N. Rathie*, Arthur Canotilho* and
Guilherme S. Rodrigues*

House No. 179, N. Block,
South City 1, Gurugram 122001, Haryana, INDIA

E-mail : swameefce@yahoo.com

*Department of Statistics,
University of Brasilia, 70910-900 Brasília, BRAZIL

E-mail : pushpanrathie@yahoo.com, arthur.machado@aluno.unb.br,
guilhermerodrigues@unb.br

(Received: Sep. 11, 2021 Accepted: Nov. 21, 2021 Published: Dec. 30, 2021)

Abstract: A new statistical distribution, which was talked about between Swamee and Rathie in 2020, is given in this paper along with several statistical properties, such as approximations, inversion result, moments, order statistics, and hazard rate function. In addition, new distributions such as Marshall-Olkin-Swamee-Rathie, generalized gamma and beta generated and Swamee-Rathie skew distributions are also obtained. Approximations to mathematical and statistical distributions are indicated. Reliability probability $P(X < Y)$, for X and Y independent Swamee-Rathie distributions, is derived.

Keywords and Phrases: Swamee-Rathie distribution, H- function, Reliability $P(X < Y)$.

2020 Mathematics Subject Classification: 60E05, 62E17, 62N05, 33C99.

1. Introduction

The various email correspondence between Swamee and Rathie gave rise to a new statistical distribution called in Section 2 as the Swamee-Rathie distribution and its skew version is given in 50 Section 13.