

TRANSMUTED EXPONENTIATED WEIBULL DISTRIBUTION

¹MUHAMMAD SHUAIB KHAN, ²ROBERT KING, ³IRENE L. HUDSON

^{1,2}*School of Mathematical and Physical Sciences, The University of Newcastle,
Callaghan, NSW 2308, Australia*

³*Department of Mathematical Sciences, Royal Melbourne Institute of Technology
(RMIT), City Campus, 124 La Trobe Street Melbourne, Victoria 3000, Australia*

Email: shuaib.stat@gmail.com, robert.king@newcastle.edu.au, irene.hudson@rmit.edu.au

SUMMARY

This paper introduces the transmuted exponentiated Weibull distribution by using the quadratic rank transmutation map technique studied by Shaw et al. [?], which contains eleven lifetime distributions as special cases. Some structural properties of the proposed model are investigated. Maximum likelihood estimation is used for estimating the model parameters. The flexibility of the transmuted exponentiated Weibull distribution is assessed by applying mechanical data.

Keywords and phrases: Reliability functions; moment estimation; entropies; maximum likelihood estimation.

2010 Mathematics Subject Classification: 62N05, 90B25.