

**Balakrishnan, N.; Davies, Katherine F.; Keating, Jerome P.; Mason, Robert L.**

**Pitman closest estimators based on convex linear combinations of two contiguous order statistics.** (English) [Zbl 1336.62237](#)

Choudhary, Pankaj K. (ed.) et al., Ordered data analysis, modeling and health research methods. In honor of H. N. Nagaraja's 60th birthday. Selected papers based on the presentations at the international conference, Austin, TX, USA, March 7–9, 2014. Cham: Springer (ISBN 978-3-319-25431-9/hbk; 978-3-319-25433-3/ebook). Springer Proceedings in Mathematics & Statistics 149, 17–37 (2015).

Summary: Comparisons of best linear unbiased estimators with some other prominent estimators have been carried out over the last six decades since the ground breaking work of *E. H. Lloyd* [Biometrika 39, 88–95 (1952; [Zbl 0046.36604](#))]; see *B. C. Arnold* et al. [A first course in order statistics. New York, NY: Wiley (1992; [Zbl 0850.62008](#))] and *H. A. David* and *H. N. Nagaraja* [Order statistics. 3rd ed. Chichester: John Wiley & Sons (2003; [Zbl 1053.62060](#))] for elaborate details in this regard. Recently, Pitman closeness comparison of order statistics as estimators for population parameters, such as medians and quantiles, and their applications have been carried out by *N. Balakrishnan* et al. [Commun. Stat., Simulation Comput. 38, No. 4, 802–820 (2009; [Zbl 1290.62025](#)); Stat. Probab. Lett. 79, No. 16, 1759–1766 (2009; [Zbl 1169.62324](#)); J. Stat. Plann. Inference 140, No. 9, 2408–2415 (2010; [Zbl 1188.62164](#)); Comput. Stat. Data Anal. 56, No. 9, 2637–2649 (2012; [Zbl 1255.62144](#))]. In this paper, we discuss the Pitman closest estimators based on convex linear combinations of two contiguous order statistics, which sheds additional insight with regard to the estimation of the population median in the case of even sample sizes. We finally demonstrate the proposed method for the uniform, exponential, power function and Pareto distributions.

For the entire collection see [[Zbl 1337.92005](#)].

**MSC:**

- [62N05](#) Reliability and life testing
- [62N02](#) Estimation in survival analysis and censored data
- [62G30](#) Order statistics; empirical distribution functions

**Keywords:**

order statistics; Pitman closeness; probabilities of closeness; convex linear estimator; location-scale family

**Full Text:** [DOI](#)

**References:**

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