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RECURRENCE RELATIONS AMONG MOMENTS OF ORDER STATISTICS FROM TWO RELATED SETS OF INDEPENDENT AND NON-IDENTICALLY DISTRIBUTED RANDOM VARIABLES

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Abstract. Some recurrence relations among moments of order statistics from two related sets of variables are quite well-known in the i.i.d. case and are due to Govindarajulu (1963*a*, *Technometrics*, **5**, 514–518 and 1966, *J. Amer. Statist. Assoc.*, **61**, 248–258). In this paper, we generalize these results to the case when the order statistics arise from two related sets of independent and non-identically distributed random variables. These relations can be employed to simplify the evaluation of the moments of order statistics in an outlier model for symmetrically distributed random variables.

Key words and phrases: Order statistics, recurrence relation, single moments, product moments, permanent, outliers, folded distribution.