FURTHER DEVELOPMENTS ON SOME DEPENDENCE ORDERINGS FOR CONTINUOUS BIVARIATE DISTRIBUTIONS

Z. FANG AND H. JOE

Department of Statistics, University of British Columbia, Vancouver, B.C., Canada V6T 1Z2

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Abstract. The dependence orderings, "more associated" and "more regression dependent", due to Schriever (1986, *Order Dependence*, Centre for Mathematics and Computer Sciences, Amsterdam; 1987, *Ann. Statist.*, **15**, 1208–1214) and Yanagimoto and Okamoto (1969, *Ann. Inst. Statist. Math.*, **21**, 489–505) respectively, are studied in detail for continuous bivariate distributions. Equivalent forms of the orderings under some conditions are given so that the orderings are more easily checkable for some bivariate distributions. For several parametric bivariate families, the dependence orderings are shown to be equivalent to an ordering of the parameter. A study of functionals that are increasing with respect to the "more associated ordering" leads to inequalities, measures of dependence as well as a way of checking that this ordering does not hold for two distributions.

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