

Semiparametric Families for Lifetime Data ¹

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Abstract:

Location-scale parameter families, $F(ax + b)$, are well-known families in which a location and a scale parameter have been introduced in the underlying distribution $F(x)$. Because these families do not completely describe the distribution they have been called semiparametric families. We provide a survey of nonparametric families and select semiparametric families that arise naturally in life distributions, as for example, $F(x^\alpha)$, $[F(x)]^\eta$, $[1 - F(x)]^\xi$, among others, and discuss properties such as stochastic ordering, and coincidences of families. These properties yield some surprising results.

¹joint with A. W. Marshall