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COMPARISON OF TWO LOG-LOGISTIC POPULATION MEDIANS IN THE PRESENCE OF UNDETECTED DATA

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Abstract

A test procedure is derived for comparing two log-logistic population medians in the presence of undetected data. It is assumed that two independent samples of sizes n_1 and n_2 are available from two log-logistic populations $LLD(\theta_1, \gamma_1)$ and $LLD(\theta_2, \gamma_2)$. The expectation maximization (EM) algorithm is used to estimate the parameters in four cases: $H_1(\theta_1 = \theta_2, \gamma_1 = \gamma_2)$, $H_2(\theta_1 \neq \theta_2, \gamma_1 = \gamma_2)$, $H_3(\theta_1 = \theta_2, \gamma_1 \neq \gamma_2)$ and $H_4(\theta_1 \neq \theta_2, \gamma_1 \neq \gamma_2)$. A guidance is described for testing the equality of the two medians ($H_0 : \theta_1 = \theta_2$ versus $H_r : \theta_1 \neq \theta_2$). Two procedures are recommended for this test, depending on whether the coefficients of variation are equal

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