ON THE CONSISTENCY OF GENERALIZED ESTIMATING EQUATIONS

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ABSTRACT

We study the consistency of generalized estimating equations. Our consistency result differs from the known results in two respects. First, it identifies a specific sequence of consistent solutions to be the minimax point of a deviance function; this is stronger than the known consistency results, which assert only the asymptotic existence of a consistent sequence. Second, the minimax procedure applies and gives consistent estimate even when the generalized estimating equation itself is not defined, as would be the case if the mean function is not differentiable, or if the support of the random observations depend on the parameters. We also provide two practical criteria based on which we can decide whether a solution is consistent by fairly simple computations.