Info-metric methods for grouped data

by

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Abstract: In many economic applications, observations can be categorized into mutually exclusive and exhaustive groups; for example individuals can be classified into cohorts and workers are employees of specific firms. In such circumstances, estimation is often implemented by running the desired regression using group-averaged data. As pointed out by Angrist (1991, *Journal of Econometrics*, 47, 243-266), least squares estimation based on group-averaged data is equivalent to instrumental variables estimation in which a dummy variable for group membership is used as instrument. In this paper, we explore the use of info-metric methods, such as empirical likelihood, to estimate models that exploit group level moment conditions. We propose a Generalized Empirical Likelihood (GEL) estimator for this setting, present its first order asymptotic distribution, and its second order bias. Model specification tests are proposed and analyzed. The finite sample properties of the methods are explored in a simulation study, and the proposed methods are used to investigate the relationship between earnings and education for various demographic groups in the UK.

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