ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΘΗΝΩΝ

ΣΧΟΛΗ ΕΠΙΣΤΗΜΩΝ & ΤΕΧΝΟΛΟΓΙΑΣ ΤΗΣ ΠΛΗΡΟΦΟΡΙΑΣ
ΤΜΗΜΑ ΣΤΑΤΙΣΤΙΚΗΣ

ΠΕΜΠΤΗ 5/6/2014
11:00
ΑΙΘΟΥΣΑ 607, 6ος ΟΡΟΦΟΣ,
ΚΤΙΡΙΟ ΜΕΤΑΠΤΥΧΙΑΚΩΝ ΣΠΟΥΔΩΝ
(ΕΥΕΛΠΙΔΩΝ & ΛΕΥΚΑΔΟΣ)

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Pairwise likelihood estimation based on a sample of pairs
(I. Papageorgiou and I. Moustaki)

ABSTRACT

Pairwise likelihood estimation has been recently used for estimating the model parameters of latent variable and structural equation models. Pairwise likelihood is a special case of composite likelihood methods for estimating models parameters using lower order conditional or marginal log likelihoods. The composite likelihood to be maximised is a weighted sum of marginal or conditional loglikelihoods. Weights can be chosen to be equal or unequal for increasing efficiency. It has been repeatedly stated in the literature that weighting is necessary for increasing efficiency but the choice of weights is not straightforward in most of the applications. Furthermore, Lindsay in one of his seminars referred to pruning higher order scores in a way that keeps us from duplicating lower order marginal information. Weights has been introduced in the analysis of cluster data as the inverse proportion of cluster size and in time series data where less weight is given to observations further apart in time. We approach the problem of weights from a sampling perspective. More specifically, we propose a sampling method for selecting pairs that is based on those pairs that contribute more to the total variance from all pairs. We demonstrate the performance of our methodology using simulated examples.