

# Bayesian Analysis of Lognormal Mixtures with an Unknown Number of Components from Grouped Data

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## Abstract

This paper proposes a reversible jump Markov chain Monte Carlo method for estimating lognormal mixtures from grouped data. Using the posteriors we also consider the calculation of the Gini coefficient. Using both simulated and real data examples, we examined the performance of the proposed algorithm and the accuracy of the Gini coefficients. From the simulated data, we can confirm that the distributions are estimated accurately even in the case of grouped data and the Gini coefficients are also estimated very well. In the empirical analysis, we we examine the inequality in the Family Income and Expenditure Survey in Japan..

**JEL classification:** C11; C13; D31.

**Key words:** Gini coefficient; grouped data; lognormal distribution; mixture; reversible jump MCMC.

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