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<http://niasra.uow.edu.au/people/UOW178846.html>

**Title:**

## **Assessing the Fit of Finite Mixture Distributions**

**Abstract:**

Mixture distributions have become a very flexible and common class of distributions, used in many different applications, but hardly any literature can be found on tests for assessing their goodness of fit. We propose two types of smooth tests of goodness of fit for mixture distributions. The first test is a genuine smooth test, and the second test makes explicit use of the mixture structure. In a simulation study the tests are compared to some traditional goodness of fit tests that, however, are not customised for mixture distributions. The first smooth test has overall good power and generally outperforms the other tests. The second smooth test is particularly suitable for assessing the fit of each component distribution separately. The tests are applicable to both continuous and discrete distributions and they are illustrated on three medical data sets.