Abstract

In the analysis of research data, the investigator often needs to decide whether several independent samples may be regarded as having come from the same population. The most commonly used statistic is Pearson's χ^2 statistic. However, traditional statistics reflect the result from a two-valued logic concept. If we want to survey sampling with fuzzy logic concept, is it still appropriate to use the traditional χ^2-test for analysing those fuzzy sample data? Through this concept, we try to use a traditional statistic method to find out a formula, called fuzzy χ^2, that enables us to deal with those fuzzy sample data. The result shows that we can use the formula to test hypotheses about probabilities of various outcomes in fuzzy sample data.