

**PERBANDINGAN BEBERAPA UJIAN KEBAGUSAN PENYUAIAN
UNTUK TABURAN NORMAL DAN TABURAN LOGISTIK**
(Comparison of Several Goodness of Fit Tests for Normal and Logistic Distributions)

FARIDATULAZNA A.SHAHABUDDIN, NORKHAIRUL AIZURA NORDIN,
KAMARULZAMAN IBRAHIM & ABDUL AZIZ JEMAIN

ABSTRAK

Ujian Kebagusan Penyuaian (UKP) adalah kaedah statistik yang digunakan untuk menentukan sama ada suatu set data itu mengikuti taburan kebarangkalian tertentu. Terdapat pelbagai statistik kebagusan penyuaian yang boleh digunakan, di antaranya adalah ujian Kolmogorov-Smirnov (KS), Anderson-Darling (AD) dan Cramer-von-Mises (CV). Dalam kajian ini, prestasi pelbagai UKP dikaji, iaitu ujian KS, AD, CV, tiga ujian yang diperkenalkan oleh Zhang dan satu ujian diubah suai menggunakan penjelmaan penstabilan varians. Prestasi bagi kesemua UKP ini diuji menggunakan taburan normal dan logistik untuk pelbagai saiz sampel. Hasil kajian menunjukkan statistik Zhang mempunyai kuasa ujian yang paling tinggi dan diikuti oleh statistik diubah suai yang dicadangkan.

Kata kunci: ujian kebagusan penyuaian; normal; logistik; fungsi taburan empirik; kuasa ujian

ABSTRACT

Goodness of fit (GOF) test is a statistical technique that can be used to determine whether or not a data set follows certain statistical distributions. There are various GOF statistics that can be applied such as Kolmogorov Smirnov (KS), Anderson-Darling (AD) and Cramer-von-Mises (CV). In this paper a study is conducted to investigate the performance of several selected goodness of fit tests which include KS, AD, CV, three test statistics of Zhang and a proposed modified GOF test which incorporates a variance stabilising transformation. The performance of these tests is studied for testing normal and logistic distributions for various sample sizes. It is found that Zhang's test is the most powerful and followed closely by our proposed GOF test.

Keywords: goodness of fit; normal; logistic; empirical distribution function; power of test

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Faridatulazna A.S, Norkhairul Aizura N., Kamarulzaman I. & Abdul Aziz J.

*Pusat Pengajian Sains Matematik
Fakulti Sains dan Teknologi
Universiti Kebangsaan Malaysia
43600 UKM Bangi
Selangor DE, MALAYSIA
Mel-e: azna@ukm.my^{*}, kamarulz@ukm.my, azizj@ukm.my*

^{*} Penulis untuk dihubungi