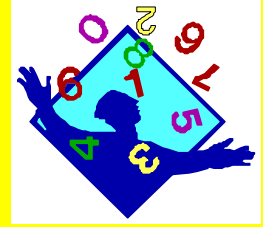




STATISTICS SEMINAR



MASTER REPORT

An Analysis of Judge's Inconsistency in the Athens 2004 Olympics Artistic Gymnastics Events Using the Multiplicative Interaction Model

Wijith Munasinghe
Kansas State University

DATE: December 8, 2005

TIME: 3:00 PM

PLACE: Durland 1061

REFRESHMENTS: 2:30 pm - Dickens 108

There was a controversial issue in medal standings in the Men's Individual All-Round Artistic Gymnastics event at the Athens 2004 Olympics. As a result, three judges were suspended from the competition indicating that something went wrong. This questioned the consistency of judges when they assign scores to the gymnasts.

The goal of this report is to determine whether any of the judges were inconsistent in their scoring when compared to the other judges. The competition data set can be viewed as data from a non-replicated experiment with a gymnast judge two-way structure in a completely randomized design structure within each individual event. Interaction between judges and gymnasts can be interpreted as inconsistency on the part of the judges. Testing for interaction is complicated by the fact that none of the treatment combinations (gymnast judge) are replicated and error to test for interaction cannot be estimated in the usual manner. One way of handling this problem is to model the data with multiplicative interaction model using AMMI macros recently developed by Lee. These models allow testing for interaction and determining the interaction's structure if structure exists.

** Upcoming seminars may also be found on the web at <http://www.ksu.edu/stats/current.seminars/nav.currentseminars.html>.

