

Math Colloquium: "The Use of Statistical Tests in Discrimination Cases"

September 12, 2011 4:00PM–5:00PM

KINSC E309

Weiwen Miao (Haverford College).

Description

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Bi-College Math Colloquium

The Use of Statistical Tests in Discrimination Cases Concerning Disparate Impact

Weiwen Miao, Haverford College

Tea at 3:00 in the Math Lounge, KINSC H208

Talk at 4:00 in KINSC E309

Abstract:

In discrimination cases concerning promotion or hiring, courts need to decide whether an employment practice, typically an exam or educational requirement, has disparate impact on applicants from a protected group. Courts usually compare the pass rates for the protected and majority groups, using either the four-fifths rule or formal statistical tests. Not everyone who passes the exam is promoted or hired as the eligibility list often expires in two or three years and promotions or hires are made in rank-order of the exam scores. Hence, in addition to comparing the pass rates, courts have also compared promotion rates of those appointed the first time the list is used, or the distributions of the ranks of the exam scores, or tested whether the average scores of the applicants from the protected and majority groups are equal.

When the courts examine the exam scores with several statistical tests, the problem of multiple comparisons arises. Now the probability of "at least one of the statistical tests finding a significant difference" exceeds the nominal level. Furthermore, different tests may give different conclusions in terms of disparate impact, and different courts interpret those results differently. To avoid the multiple comparison problem, we study a two-test procedure that keeps its size at the nominal level. Simulation results indicate that the two-test procedure keeps the size at their nominal level, and in certain situations, have a higher power of detecting disparate impact than currently used methods.

Link: <http://www.haverford.edu/mathematics/events/colloquium.php>

For More Info

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