where

$$\lambda_1' = \left(-d_\alpha' \sqrt{\frac{1}{n} + \frac{1}{m}} \pm \Delta\right) \Big/ \sqrt{\frac{F(x_0)[1 - F(x_0)]}{n} + \frac{F'(x_0)[1 - F'(x_0)]}{m}}$$

and

$$\lambda_2' = \left(d_\alpha' \sqrt{\frac{1}{n} + \frac{1}{m}} \pm \Delta\right) \Big/ \sqrt{\frac{F(x_0)[1 - F(x_0)]}{n} + \frac{F'(x_0)[1 - F'(x_0)]}{m}}.$$

Since this lower bound approaches one as n and m approach infinity the power also approaches one and the test is consistent.

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ON OPTIMUM SELECTIONS FROM MULTINORMAL POPULATIONS[1]

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1. Introduction. Let $Y_1, Y_2, \cdots, Y_n$ be scores in n admission tests such as those used in educational institutions, personnel selection, or testing of materials, and let these scores be used as a basis for selecting a sub-population Π^* from an initial population Π. This selection is usually performed in such a manner that an achievement or performance score X has a distribution in Π^*, which shows some required improvement over the distribution of X in Π; such an improvement may for example consist in changing the expectation $E(X)$ of X in Π to a pre-assigned value $E^*(X)$ in Π^*. Among all selection procedures based on $Y_1, \cdots, Y_n$ and achieving the required improvement of the distribution of X, it appears desirable to find those which retain as large a portion of Π as possible. It will be shown that under certain assumptions the linear truncations studied in an earlier paper [1] are such optimal selections.

2. Selection, truncation, linear truncation. Let the frequency of individuals with the scores $(X, Y_1, \cdots, Y_n)$ be $F(X, Y_1, \cdots, Y_n)$ in Π and

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