ABSTRACT

Kalomira Marouga

Statistical Analysis of Higher Education Entrance Exams with Emphasis in the use of Multivariate Statistical Methods

May, 2004

The objectives of this dissertation are to give a basic statistical description of some aspects of the selection of students in tertiary education institutions in Greece in 1993, as well as to touch upon some important issues pertaining to the selection of students in that educational level, that, usually, do not appear in popular statistical presentations in the press or elsewhere, dealing with this area.

The basic issues explored in this dissertation are:

- A general description of the demographics and other characteristics of the final (3rd) Lyceum grade in 1993.

- A breakdown of scores achieved by candidate group (desmi) and 3rd grade subject.

- Whether there exists a comparative advantage for candidates that are second- or third – timers, i.e. they attempt to enter tertiary level for the second or third time, having had the benefit of retaining scores from previous attempts. As expected intuitively, we document the existence of that type of advantage.

- What are the components of student performance, if any? We use Factor Analysis of the test scores to determine whether student performance can be represented from a number of principal

components and we find that two components are a satisfactory representation. The first can be regarded as a general learning ability, while the second is the ability to analyze and synthesize when faced with open-ended issues, like the ones encountered in the subject of Composition.

- What is the structure of preferences of the candidates? By using Cluster Analysis, we conclude that candidates tend to group together higher education departments on the basis of their academic level (university vs technical institutions), the institutions' location, their academic tradition and the employment prospects of each department. The similarity of the faculty of different institutions, seems to play a secondary role in the grouping of departments.