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Yathavan, Vasuki

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ANALYSING FIRST YEAR STUDENTS' PERFORMANCE IN THE COMMERCE FACULTY AT THE UNIVERSITY OF THE WITWATERSRAND

Vasuki Yathavan

A research report submitted to Faculty of Science, University of the Witwatersrand, Johannesburg, in partial fulfillment of the requirements for the degree of Master of Science

Johannesburg, 2008.

Declaration

I declare that this research report is my own, unaided work. It is being submitted for the degree of Masters in Mathematical Statistics in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.

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(Vasuki Yathavan)

…….day of ……

ABSTRACT

With the increasing diversity of students attending University, there is a growing interest in the factors predicting academic performance. A large number of students who enter University do not continue beyond the first year of study. Academics seek explanations, whereas University administrators desire to manage their student enrolments by reducing failure rates. Decision on admissions to University and placement into University courses are usually based on the results of achievement (as in secondary school exams) and/or selection tests.

About half of the first year students in the Faculty of Commerce at the University of the Witwatersrand, do not continue to their second year. The drop out rate of first year students in this Faculty reported to range from roughly 24% to 32%. In this report an attempt is made to identify factors which affect the students' performance during the first year. The purpose of this report is to use a CHAID analysis to find the importance of some predictors and interactions between them as well as fitting a Multinomial Logistic Regression model to the same data.

This report presents the important predictors from the statistical analyses. The analyses were done on the first year students in the Faculty of Commerce, University of the Witwatersrand from 2003 to 2006. Previous Institution Type, Gender, Age, Matriculation Aggregate, First year performance and Matriculation courses (Accountancy, Biology, English, History, Mathematics and Physical Science) were used as predictor variables.

The CHAID analyses indicated that Matriculation Aggregate is the most important predictor, whereas Previous Institution Type, Age, Accountancy, English and Physical Science are also important predictors. Several of these variables interact with it. In the Multinomial Logistic Regression analysis, Age, Aggregate, Accountancy, English, Mathematics and Physical Science are the significant predictors. Most of these variables were significant as variables interacting with some of these variables. Age is the only single variable significant on its own in these models.

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