Investigating the significance of the 2008 Matric curriculum on first-year Economics performance

Z. Dlomo*
e-mail: 2423371@uwc.ac.za

A. Jansen
Department of Economics
Stellenbosch University, South Africa
e-mail: ada@sun.ac.za

M. Moses*
e-mail: mmoses@uwc.ac.za

D. Yu*
e-mail: dyu@uwc.ac.za
*Dept of Economics
University of the Western Cape, South Africa

Abstract

The academic success of first-year Economics students has been the focus of many South African studies in Economic Education. Many used the last school examination (Matric) results as a proxy for students' academic ability. In 2008 a new Matric curriculum was introduced. Given various changes in the curriculum, the question arises as to whether Matric results are still significant in explaining academic performance, and whether the matriculants from the 2008 curriculum perform differently. Factors such as the students' time spent on studying outside lectures, their work status, and the impact of using an English textbook on the performance of non-English speakers are also investigated. A two-step Heckman model is applied to investigate the performance of Economics students at the University of the Western Cape, South Africa. The main results are that students who matriculated under the new curriculum, worked part-time, spent less time studying, and are not English-speaking perform worse.

INTRODUCTION

Factors determining the academic success of first-year Economics students have received much attention in the international and local economic education literature. These studies considered various factors predicting academic success; from lecture and tutorial attendance to investigating the impact of academic support programmes. However, most of these studies have been conducted before the recent changes to the last school examination, i.e. the matriculation (Matric) examination results. As from 2008 the National Curriculum Statement requires learners in Grades 10 to 12 to do seven subjects (Western Cape Education Department 2006). Four subjects are

compulsory which include two languages,[1] either Mathematics or Mathematical Literacy, and Life Orientation. The new curriculum no longer distinguishes between Higher Grade (HG), Standard Grade (SG) and Lower Grade (LG). The former Senior Certificate (SC) is now referred to as the National Senior Certificate (NSC). Furthermore, other aspects that have not been explored fully in local studies are the work status of students, their study characteristics outside the classroom (such as study habits and hours spent on the subject), as well as the impact of using an English textbook where the student's home language is different. Furthermore, most studies have been conducted at previously white universities.

At the University of the Western Cape (UWC) in South Africa, some of these factors are relatively important. For example, the home language of many students at UWC is not English; according to the university's student administration system, in 2009 only 42.4 per cent of the total registered students' home language is English. The question arises as to whether using an English textbook has any effect on academic performance. Stephen, Welman and Jordaan (2004) investigate English language proficiency as a predictor of academic success at another South African university, and find that Black students perform relatively worse as compared to their Indian counterparts, with the latter exhibiting higher English proficiency levels.

This study investigates the relevance of these factors in explaining academic success for a first-year Economics module at UWC. The primary research question is whether students from the old Matric SC curriculum before 2008 perform better than those students completing Matric under the new NSC curriculum in 2008. In addition to using student data from university records, a survey questionnaire is used to collect student information on their study habits, part-time work status, and level of interest in Economics. The outline of the article is as follows: there will be sections discussing the first-year Economics modules at UWC, the data and methodology, descriptive statistics that will present the findings of the econometric model and a conclusion.

FIRST-YEAR ECONOMICS MODULES AT UWC

The Department of Economics offers three first-year, semesterised modules, namely ECO133, ECO134 and ECO135. The ECO133 and ECO134 modules (The principles of Economics) have the same content, which includes core economic theory, i.e. Microeconomics and Macroeconomics. Furthermore, ECO135 (Introductory Mathematical Economics) is an optional module. The aforementioned structure of the first-year Economics curriculum is a result of changes adopted by the Commerce Faculty in 2009, which followed the amendments of the Matric curriculum. The faculty's new curriculum emphasizes crucial literacy and numeracy skills at first-year level. ECO133 and ECO134 are presented in the first and second semesters respectively, with ECO133 primarily serving students from BCom 4-year full-time and part-time programs, and ECO134 3-year programs. Students who failed ECO133 in the first semester are allowed to register for ECO134 in the second semester of the

same year, while those who failed ECO134 in the second semester are allowed to register for ECO133 in the first semester of the following year.

The main faculty entry requirement for the 3-year programs in 2009 for students matriculating with the NSC was that they must obtain at least 27 entry points in seven Matric subjects.[2] In addition, students who passed Mathematical Literacy with 50 per cent or more were accepted for these programs. At the time of writing, the faculty revised the entry requirements for 2011. First, students with Mathematical Literacy are no longer allowed to enroll for any 3-year programs, except BAdmin. Secondly, the minimum entry points for Matric subjects have increased.

This article focuses on the ECO134 students. The ECO134 module consists of three one-hour lectures per week, over 14 weeks. During the data collection period six lecture attendances were recorded. Students also attend weekly tutorials; in 2009 there were 10 sessions of which eight attendances were recorded. Students wrote tutorial tests in these sessions, and the best six test results contributed to their assessment mark. Students also have access to academic support via online-learning where they download course material such as lecture slides and additional readings. Finally, the assessment of the module consisted of two term tests, the aforementioned tutorial tests and an examination. Students who did not comply with the module requirements (i.e. their module assessment mark was below 40%) were not allowed to write the examination. The final mark was the weighted average of the assessment mark and the examination mark.

DATA AND METHODOLOGY

The data from the university's student administration system contained information on the demographic and educational attainment characteristics of the students. All ECO134 students were included, i.e. the sample size is 412 students. The voluntary student survey was conducted towards the end of the second semester and captured information that was not recorded in the administration system, such as the highest educational attainment of the parents, levels of interest in and enjoyment of the module, preparation prior to lectures, payment for studies, part-time work status, etc. In order to boost the response rate, students were notified that a prize would be awarded to three respondents. 394 students participated, i.e. a response rate was 95.6 per cent.

The methodology is the education production function approach. Siegfried and Fels (1979, 925) group the literature on teaching methods and techniques into a production function approach. This type of analysis investigates how output (which can be measured in terms of results achieved in examinations or student evaluation questionnaires) can be explained by a diverse number of inputs. These range from students' human capital (measured in terms of college entrance examination scores, or prior knowledge of economics), the faculty's human capital (the experience of instructors), to the college environment (which specifically looks at the impact of class size), and students' effort (such as study time). In many studies the measurable

output is either the test or examination performance. Van Walbeek (2004), in his investigation of the impact of lecture attendance on Economics students' performance, uses the final examination mark, while Pretorius, Prinsloo and Uys (2007) use the final mark in their investigation of the factors influencing the success of introductory microeconomic students. Andrietti, D'Addazio and Gómex (2008) look at the impact of class attendance on student performance; they use the examination score as the output variable. In this article the final examination mark is used as the dependent variable.

The explanatory variables used are based on previous studies. When considering the academic ability of students, most studies use some proxy variable such as the students' performance at school. In the case of USA studies, the students' grade point average (GPA) or the performance in the scholastic aptitude tests are used (see Okpala, Okpala and Ellis 2000). Local studies use the Matric results; in most cases they have contributed significantly to academic performance in Economics (see Van Walbeek 2004; Parker 2006; Smith and Edwards 2007; Smith 2009). In addition, the significance of school results has taken on a further dimension with the recent change in the South African Matric curriculum mentioned earlier. One local study investigates the ability of the NSC Mathematics to signal performance, as compared to the SC Mathematics HG (Hunt, Rankin, Schöer, Nthuli and Sebastiao 2009). They test whether students who matriculated with Mathematics under the NSC curriculum performed differently in two Commerce subjects at the University of the Witwatersrand, namely Computational Mathematics and Economics. They find that these students performed weaker.

Another important explanatory factor is the actions of the students outside the classroom. Okpala et al. (2000, 222) investigate the impact of study time and study habits or strategies (i.e. not having excessive contact with friends while studying, studying the important points, and following a study schedule), and find that the latter has a positive and significant impact on the course grade. Moreover, the impact of part-time work status is another important consideration. In a study analysing the reasons for poor attendance of lectures and tutorials, Kottasz (2005) alludes to the possibility of casual work as one possible reason. However, her findings indicate that having work commitments is not a major factor in explaining both tutorial and lecture attendance. In contrast, Carney, McNeish, and McColl (2005) investigate the impact of part-time employment on the health and academic performance of students at a Scottish university. They use a survey questionnaire which includes questions on employment, the reasons for working, as well as the perceived effects on academic performance (Carney et al. 2005, 309). Their analysis shows that students who worked more hours had a greater probability of perceiving that working had an effect on their studies.

Of the full sample, 75 students (18.2%) did not write the examination (either because they did not qualify to write it, or they were absent from it). Hence the results of an Ordinary Least Squares (OLS) regression will be biased due to sample selection problems. Applying a two-step Heckman model controls for these problems

and is applied in this article. The first step is a probit analysis to identify the factors determining whether the students wrote the examination or not, while the second step investigates the factors influencing performance in the examination.

DESCRIPTIVE STATISTICS AND ECONOMETRIC ANALYSIS

The descriptive statistics show that the majority of the students are South African (97.7%). More than half of the students are Coloured (56.3%), 32.0 per cent are Black, 10.2 per cent are Indian and only 1.5 per cent are White. The female share is greater (55%). The age profile shows that 37.9 per cent and 20.6 per cent of the students turned 19 and 20 years respectively in 2009, while 23.5 per cent turned 17 or 18 years. Moreover, 83.5 per cent of the students resided in the Western Cape at the time of study, while 2.2 per cent are foreign students. Furthermore, 58.5 per cent and 21.1 per cent of the students declared English and isiXhosa as their home language respectively, with most of the remaining students speaking Afrikaans.

The students' Matric characteristics show that more than 55 per cent of them matriculated in 2008 under the NSC curriculum. 81.8 per cent matriculated from schools under the Western Cape Education Department. Looking at the Matric subjects in greater detail, approximately 40 per cent of the students took English home language under the NSC curriculum, while 30 per cent took English first language under the SC curriculum. 96.8 per cent of the latter students did English first language on HG. Furthermore, 47.6 per cent and 9.0 per cent of the students took Mathematics and Mathematical Literacy respectively for the NSC, while approximately 16 per cent did Mathematics HG for the SC. Lastly, 33.0 per cent did Economics.

The study characteristics of the students show that 97.1 per cent enrolled for a Bachelor Degree from the Faculty of Commerce, with most of them enrolling for a BCom 3-year degree (40.8%) or BAccounting 3-year degree (31.1%).[3] 39 students (9.5%) registered for the optional ECO135 module. As far as tutorial attendance is concerned, more than 75 per cent attended at least six tutorials. This high attendance rate is expected since tutorial tests contribute to module assessment marks. In contrast, lecture attendance was extremely low; nearly 45 per cent of the students did not attend any lectures, while only 20.3 per cent attended at least five lectures.

Table 1 summarises the main findings of the student survey. Nearly 75 per cent of the respondents resided with their parents at the time of the survey, and roughly 20 per cent stayed at the university residences. 21.8 per cent indicated they worked part-time, with nearly half of them stating that working part-time adversely affected their studies (citing stress as the main reason). Furthermore, 12.2 per cent indicated the use of an English textbook had a negative impact on their studies. Finally, 28.1 per cent claimed they spent more than five hours per week studying the course material outside lectures.

Table 1: ECO134 student survey – main findings

Residence status		
Student residence	73	18.5%
Private residence	28	7.1%
Staying with parents	281	71.3%
Other	8	2.0%
Unspecified	4	1.0%
	394	100.0%
Working part-time		
Yes, and it affects the studies negatively	40	10.2%
Yes, but it does not affect the studies negatively	46	11.6%
No	296	75.1%
Unspecified	12	3.1%
	394	100.0%
Impact of the use of an English textbook on study		
It affects the studies negatively, since home language is not English	48	12.2%
It does not affect the studies negatively, although home language is not English	109	27.7%
English is the home language	233	59.1%
Unspecified	4	1.0%
	394	100.0%
Weekly study hours outside lectures on ECO134		
0–1 hour	29	7.4%
2 hours	68	17.3%
3 hours	61	15.5%
4 hours	45	11.4%
5 hours	49	12.4%
6–10 hours	77	19.5%
More than 10 hours	34	8.6%
Unspecified	31	7.9%
	394	100.0%

Multivariate econometric analyses are performed to investigate the role of various factors that influence students' examination performance. As mentioned previously, a two-step Heckman approach is adopted. Based on the existing literature (see the heading Data and methodology), the explanatory variables included in the first step are as follows: race dummies (reference group is Blacks),[4] a gender dummy (reference group being female), age dummy variables (reference group is 19 years), as well as lecture and tutorial attendance. In addition, dummy variables are used

to indicate whether the students matriculated from schools in the Western Cape Education Department and whether they did Matric Economics. A dummy variable indicating the students enrolled for the optional ECO135 module is also included. The result of the first test (test1) is also considered for inclusion, but four students did not write it. Hence, an interaction variable is created in order to include these students in the sample (this approach was used by Horn, Jansen and Yu 2011). A test1 mark of zero is assumed for these students. A dummy variable is created which indicates whether students wrote test1, and the interaction variable is determined as the product of the revised test1 marks and this dummy variable. The interaction variable is included in the first step.

The second step includes all the explanatory variables of the first step except for the interaction variable. The following variables are also included: a dummy variable that indicate the students stayed at the university residences, dummies on home language (the reference group is Afrikaans), as well as dummy variables indicating the degree program for which they were registered (the reference group is BCom 3-year). A dummy variable representing students matriculating from the NSC curriculum is included. Two dummy variables are included to capture the performance of students in Matric English under the NSC and SC curricula. Similarly, this is also done for Matric Mathematics. The Matric entry points of the best four subjects other than English and Mathematics is also included (Life Orientation is excluded from the entry point calculations for the NSC students).[5] This entry point system is somewhat different to the one used at UWC, where all seven subjects are included.

The following variables derived from the student survey are also included: a dummy variable representing the weekly study hours spent on the module outside lectures (it is equal to one if the number of study hours is at least five per week), a dummy variable capturing the part-time status of the students, a dummy variable that captures the impact of the use of an English textbook for non-English speaking students, and a dummy variable that controls for students taking part in the survey. The results of the Heckman regressions are presented in Table 2.

Table 2: Two-step Heckman regression on the ECO134 examination mark

	Coefficient	
Second step: Explaining examination performance	(I)	(II)
Dummy variable: Coloured	-2.636	-2.097
Dummy variable: Indian or White	-2.353	-2.095
Dummy variable: Male	2.546**	2.195*
Dummy variable: Over 20 years	-1.345	-1.441
Dummy variable: 20 years	-3.636*	-3.404*
Dummy variable: Under 19 years	1.097	1.088
Dummy variable: Staying at university residence	-2.819	-1.777

	Coefficient	
Dummy variable: Home language – English	-1.358	-1.151
Dummy variable: Home language – African languages	-3.228	-2.982
Dummy variable: Program – BCom 4-year	-2.930*	-2.761*
Dummy variable: Program – BAccounting 3-year	4.499***	4.537***
Dummy variable: Program – BAccounting 4-year	4.155	4.125
Dummy variable: Program – BAdmin	-10.303***	-9.908***
Dummy variable: Program – BComLaw	-2.483	-1.847
Dummy variable: Program – Other	-5.859*	-7.865
Dummy variable: Enrolled the ECO135 module	4.259**	4.188*
Lecture attendance	0.359	0.316
Tutorial attendance	0.018	0.335
Dummy variable: Matriculated in 2008 under the NSC curriculum	-5.986***	-5.445***
Dummy variable: Matric English home language symbol A or B (NSC)	4.319*	5.317***
Dummy variable: Matric English first language HG symbol A or B (SC)	4.348***	5.502***
Dummy variable: Matric Mathematics symbol A or B (NSC)	2.860	2.808
Dummy variable: Matric Mathematics HG symbol A or B or C (SC)	0.273	
Dummy variable: Matric Mathematics HG symbol B or C (SC)		5.077*
Dummy variable: Matric Economics	1.705	1.754
Total entry points in the best 4 other Matric subjects (Excluding Life Orientation)	0.029*	0.031**
Total entry points in the best 4 other Matric subjects (Excluding Life Orientation) squared	0.001	0.001
Dummy variable: Matriculated examination department – other than Western Cape	1.972	1.580
Dummy variable: Took part in the ECO134 student survey	-3.063	-3.626
Dummy variable: Use of an English textbook affects studies negatively	-3.697*	-4.291**
Dummy variable: Worked part-time	-1.929*	-2.077*
Dummy variable: Weekly study hours on the module – at least five hours	2.561**	2.213**
Constant	41.712***	39.033***
First step: Probability of qualifying to write the examination		
Dummy variable: Coloured	0.147	0.211
Dummy variable: Indian or White	-0.027	0.054
Dummy variable: Male	0.218	0.176

	Coefficient	
Dummy variable: Over 20 years	0.117	0.093
Dummy variable: 20 years	0.135	0.121
Dummy variable: Under 19 years	-0.159	-0.194
Lecture attendance	0.077**	0.060*
Tutorial attendance	0.335***	0.375***
Dummy variable: Matric Economics	-0.181	-0.168
Dummy variable: Matriculated examination department – other than Western Cape	-0.025	0.075
Dummy variable: Enrolled the ECO135 module	0.668***	0.658***
Interaction variable: Wrote test1 × Revised test1 mark	0.041***	0.039***
Constant	-4.825***	-4.983
Lambda	-11.512***	-11.455
R-squared	0.40	0.43
Adjusted R-squared	0.35	0.37
Number of observations	412	412

*** Significant at 1%   ** Significant at 5%   * Significant at 1%

The first step of regression (I) indicates that race does not significantly influence the probability of writing the examination, although the sign of the coefficients indicates that Coloured students are more likely to write the examination. The same finding is observed for gender and age, with male and elderly students having a greater likelihood of writing the examination.

A higher tutorial and lecture attendance is associated with a greater probability of writing the examination, with the coefficient of the former variable being greater and more statistically significant. This result is expected as tutorial tests form part of the components of module assessment marks. The positive correlation between lecture and tutorial attendance and examination performance is supported by Van Walbeek (2004), Andrietti et al. (2008), and Horn and Jansen (2009). The results should be treated with caution though, as the endogeneity problem may not have been fully accounted for.

Stanca (2006) specifically points to the endogeneity problem when considering lecture attendance as a predictor of student performance. Since students have the choice of attending lectures, attendance is not an exogenous independent variable, which may lead to biased and inconsistent results when using OLS regressions. Various studies have tried to circumvent this problem by including proxy variables in the OLS regression, which control for ability, effort and motivation. Using an instrumental variable (IV) approach, Stanca (2006) finds that there is still a positive and significant relationship between lecture attendance and student performance. See also Andrietti et al. (2008). The econometric analyses of this article also run

an IV regression. The instruments for lecture attendance include dummy variables for taking part in the survey, staying at university residence, and working part-time. Since the results are similar to the main econometric model in Table 2, these findings are not reported.

The interaction variable has a positive sign and is statistically significant. This implies that students who performed well in test1 are more likely to write the examination (which is similar to the findings of Smith (2009)). Furthermore, the probability of ECO135 students writing the examination is very high. Finally, students who had Matric Economics and completed their studies at schools outside the Western Cape are less likely to write the examination, but these results are statistically insignificant.

The second step of regression (I) shows that once again, the race dummy variables are statistically insignificant. The signs of these coefficients are, however, contrary to the findings of Van Walbeek (2004) and Parker (2006). Black students perform relatively better in the examination. Moreover, male students perform relatively better, which is consistent with the results of Parker (2006) as well as Horn and Jansen (2009). Students who were 20 years old at the time of the study perform significantly worse, as compared to the reference group (19-year-olds). This contrasts the findings of Van Walbeek (2004) and Parker (2006), who find that elderly students perform better.

The impact of Matric characteristics on the examination mark shows that the dummy variable indicating students matriculating with NSC is negative and statistically significant. These students perform almost six percentage points lower than the matriculants with SC. Moreover, the Matric entry points for the best four subjects contribute positively and significantly towards students' examination performance. This supports empirical evidence by Okpala et al. (2000), Smith and Edwards (2007), and Smith (2009). Students who obtained an A or B symbol in English home language for the NSC perform relatively better in the examination. However, their performance is slightly lower (by 0.03 percentage points) than those students who obtained an A or B symbol in English first language HG for the SC.

Students with better results in Mathematics HG (symbols A, B or C) for the SC, and Mathematics (symbols A or B) for the NSC perform better in the examination. However, the latter variable has a greater coefficient, but both these results are statistically insignificant. This finding is quite unexpected, as Hunt et al. (2009) find that students with Mathematics HG have a stronger ability to cope at university. Upon further investigation, the data reveals that only three students obtained an A symbol in Mathematics HG, and surprisingly, they all performed much worse in the ECO134 examination as compared to those with B or C symbols. Since these three students are clearly outliers, the regression was re-estimated with a revised Matric Mathematics HG dummy which only includes students with B or C symbols. The results from this regression (i.e. regression (II)) are very similar to the results of regression (I), except that the students with B or C symbols in Mathematics HG now perform significantly better than students with A or B symbols in Mathematics.

In contrast to the findings of the first step, students with Matric Economics perform relatively better in the examination, but this dummy variable remains statistically insignificant. As far as the relationship between the home language of the students and their examination performance is concerned, both the English and African language dummy variables are negative but statistically insignificant. This may be explained by the English Matric dummy variables already capturing the impact of language on examination performance. Furthermore, students who were enrolled for the BAccounting 3-year degree clearly outperform students from other degree programs. This result is not surprising since these students are usually academically stronger. Finally, students who stayed at university residence perform relatively worse, but this finding is insignificant.

The results for tutorial and lecture attendance in the second step show a positive relationship, but both are insignificant. The insignificant result of tutorial attendance in the second step, in contrast to its significant relevance in the first step, may be explained by the fact it is a relatively large proportion of the module assessment mark and therefore has a great impact on the likelihood to write the examination. It should also be kept in mind that tutorial attendance is considered compulsory. With regard to the insignificant result of lecture attendance in the second step, it is possible that other explanatory variables have already captured the students' academic ability. Finally, the dummy variable for students who were enrolled for the ECO135 module is positive and statistically significant. This result is not surprising, as students enrolled for this module are generally mathematically stronger.

Three variables from the student survey contribute significantly towards students' examination performance. First, students who worked part-time perform relatively worse by approximately two percentage points. This is similar to findings by Kottasz (2005) and Carney et al. (2005). Secondly, students who study at least five hours per week outperform the remaining students by 2.6 percentage points, which contradicts the results of Okpala et al. (2000). Finally, students who indicated that the use of an English textbook affected their studies negatively perform relatively worse by 3.7 percentage points. Other variables from the survey such as the parents' highest educational attainment achieved, as well as the levels of interest and enjoyment in Economics are insignificant and hence are excluded from the second step.

CONCLUSION

Most local studies have included students' Matric results as a proxy of academic ability in explaining first-year Economics performance. With the introduction of the NSC curriculum, this becomes questionable. Furthermore, a complementary research question is whether there is a difference in academic performance between students who matriculated from the NSC curriculum as opposed to the SC curriculum. Other secondary research objectives include investigating the impact of the students' time spent on studying outside lectures, their work status and the use of an English

textbook to non-English speakers. This study used a two-step Heckman model to address these issues.

The main findings are that students who matriculated with NSC performed relatively worse. Moreover, students with good performance in English first language HG in the SC curriculum outperformed students with English home language in the NSC curriculum. Similar findings are observed when comparing students with good performance in Mathematics HG for the SC, to those with Mathematics for the NSC. Students who worked part-time performed relatively worse, while those spending more time studying outside lectures achieved better results. Finally, students whose home language is not English and claimed that the use of an English textbook adversely affected their studies, performed relatively worse.

The findings of this article clearly provide empirical support that students from the NSC curriculum perform relatively worse in first-year Economics, which may require universities to adjust entry requirements and provide additional academic support. At UWC, the Commerce faculty has already imposed stricter entry requirements.

NOTES

1   Prior to 2008, students could take a language at any of the following levels: first language, second language and third language. The new curriculum allows students to take a language as home language, first additional language, or second additional language.
2   The derivation of these entry points uses a weighted system of declining scale to award points for the symbol obtained in each subject. For English and Mathematics, 15 points are awarded for level-8 result (90–100%), 13 points for level 7 (80–89%), 11 points for level 6 (70–79%), 9 points for level 5 (60–69%), 7 points for level 4 (50–59%), 5 points for level 3 (40–49%), 3 points for level 2 (30–39%) and 1 point for level 1 (20–29%). For Life Orientation, 3 points are awarded for levels 7 and 8 (80–100%), 2 points for levels 4–6 (50–79%) and 1 point for levels 1–3 (20–49%). Finally, for the remaining four subjects, 8 points are awarded for level 8, 7 points for level 7, 6 points for level 6 and so forth. Hence, the maximum entry points a student could obtain is 65 ($15 \times 2 + 3 + 8 \times 4$) (University of the Western Cape 2010).
3   40 students enrolled for a BCom 4-year Degree. Nine of these students failed ECO133 in the first semester and subsequently enrolled for ECO134 in the second semester. The remaining 31 students resumed their studies in the second semester 2009 after stopping their studies at the university for a while, and were only allowed to enroll for the BCom 4-year program.
4   Since there are only six White students in the sample, it was decided to group Indians and Whites together in the regression.
5   For students with the SC, if the subject was taken on HG, eight points were awarded for an A symbol, seven points for B, and so forth. For SG, six points were award for an A symbol, five points for B, and so forth. Students who obtained a G symbol were not awarded any points regardless of the year of matriculation. For students with the NSC, seven points are awarded for an A symbol (80–100%), six points for B (70–79%), five points for C (60–69%) and so forth.

REFERENCES

Andrietti, V., R. D'Addazio and C. Velasco Gomez. 2008. *Class attendance and academic performance among Spanish Economics students*. Universidad Carlos III de Madrid Working Paper 09-61. Madrid: Universidad Carlos III de Madrid.

Carney, C., S. McNeish and J. McColl. 2005. The impact of part-time employment on students' health and academic performance: A Scottish perspective. *Journal of Further and Higher Education* 29(4): 307–319.

Horn, P. M. and A. I. Jansen. 2009. Tutorial classes – why bother? An investigation into the impact of tutorials on the performance of Economics students. *South African Journal of Economics* 77(1): 179–190.

Horn, P., A. I. Jansen and D. Yu. 2011. Factors explaining the academic success of second-year Economics students: An exploratory analysis. *South African Journal of Economics* 79(2): 202–210.

Hunt, K., N. A. Rankin, V. Schöer, M. Nthuli and C. Sebastiao. 2009. *Blind admission? The ability of NSC Maths to signal competence in university commerce courses as compared to the former SC Higher Grade Maths*. MPRA Paper No. 18075. Munich: Munich Personal RePEc Archive.

Kottasz, R. 2005. Reasons for student non-attendance at lectures and tutorials: An analysis. *Investigations in University Teaching and Learning* 2(2): 5–16.

Okpala, A., C. O. Okpala and R. Ellis. 2000. Academic efforts and study habits among students in a principle of Macroeconomics course. *The Journal of Education for Business* 75(4): 219–224.

Parker, K. 2006. The effect of student characteristics on achievement in introductory Microeconomics in South Africa. *South African Journal of Economics* 74(1): 137–149.

Pretorius, A. M., P. Prinsloo and M. D. Uys. 2007. Exploring factors influencing the success of students in introductory Microeconomics. Paper presented at the ESSA Conference, Johannesburg, 10th–12th September.

Siegfried, J. J. and R. Fels. 1979. Research on teaching college economics: A survey. *Journal of Economic Literature* 17(3): 923–969.

Smith, L. 2009. An analysis of the impact of pedagogic interventions in first-year academic development and mainstream courses in Microeconomics. *South African Journal of Economics* 77(1): 162–178.

Smith, L. and L. Edwards. 2007. A multivariate evaluation of mainstream and academic development courses in first-year Microeconomics. *South African Journal of Economics* 75(1): 99–117.

Stanca, L. 2006. The effects of attendance on academic performance: Panel data evidence for introductory Microeconomics. *Journal of Economic Education* 37(3): 251–266.

Stephen, D. F., J. C. Welman and W. J. Jordaan. 2004. English language proficiency as an indicator of academic performance at a tertiary institution. *South African Journal of Human Resource Management* 2(3): 42–53.

University of the Western Cape. 2010. *University Calendar 2010: Faculty of Economic and Management Sciences (Undergraduate): Part 4*. Bellville: University of the Western Cape.

Van der Merwe, A. 2006. Identifying some constraints in first-year Economics teaching and learning at a typical South African university of technology. *South African Journal of Economics* 74(1): 150–159.

Van Walbeek, C. P. 2004. Does lecture attendance matter? Some observations from a first-year course in Economics at the University of Cape Town. *South African Journal of Economics* 72(4): 861–883.

Western Cape Education Department. 2006. *Frequently asked questions about the National Curriculum Statements in the FET band*. Available at: http://wced.wcape.gov.za/circulars/minutes06/edcd106.pdf.