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Undergraduate students’ performance: the case of University of Malaya

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Abstract

Purpose – The purpose of this study is to determine the undergraduate students’ performance in the Faculty of Business and Accountancy, University of Malaya and the factors influencing the performance of the undergraduate students.

Design/methodology/approach – The performance of the undergraduate students in this study is measured by their cumulative grade point average (CGPA) in the final semester. In this study, the students’ demographic profile, entry qualifications and the subjects taken by the students in pre-university level are used as the predictor variable for the students’ performance in the degree programme.

Findings – The result of the study shows that the predictor variables do explain the variance in the students’ final CGPA. In addition, it was found that knowledge prior to entering the university such as economics, mathematics and accounting is crucial in assisting the students in undertaking the courses in both business and accounting programme. The study also found that female students perform better than male students; whilst Chinese students perform better than Malay and Indian students.

Research limitations/implications – The implications of this study for the academics in universities and schools are also discussed in the paper. This paper, however, does not look into variables other than students’ past performance prior to entering the university that may have an influence over the students’ performance in the university. Hence, this aspect may be examined in future researches.

Originality/value – This paper will be useful to the academic communities, the public and other interested parties who are interested in improving students’ performance during their periods of study in the universities.

Keywords Students, Performance measurement (quality), Undergraduates, Degrees, Malaysia

Paper type Research paper

1. Introduction

Students are products of universities. Upon graduation, they become the source of manpower for developing the country’s economy. However, students who dropped out from the university would not only find it difficult to search for jobs, they could also, in a way, hinder the development of the labour market. Therefore, students’ performance in universities should be a concern not only to the academics and educators, but also to corporations which are often said to be the “end user” in the supply chain of graduates for the labour market.
The issue of students’ performance in a multi-racial country like Malaysia can become a matter for concern particularly if the students’ performances vary amongst the three major races – the Malay, Chinese and Indian. The concern over the performance of Bumiputera[1] students was voiced by the former Education Minister Datuk Mahadzir Mohd Khir and reported in the English newspaper printed in Malaysia: *New Straits Time* (2001). According to him, the ministry is concerned with the Bumiputera students’ performance in the university and is disappointed with the number of drop-outs involving the Bumiputera students. His opinion is shared by the Prime Minister, Datuk Seri Abdullah Ahmad Badawi who was then the Deputy Prime Minister. Abdullah was reported in a Malay newspaper – *Utusan Malaysia* (2002) to say that the attitude of the Malays seemed to be at an old level and that the Malays now are placing less importance on excellence. Nevertheless, students’ performance is an important issue that requires equal attention from all parties notwithstanding the differences in political interests and intentions.

In the light of this issue, this research is undertaken to determine the performance of the undergraduate students in the Faculty of Business and Accountancy (FBA), University of Malaya, Malaysia. In addition, this study is conducted to identify the factors that influence the performance of the undergraduate students for both business and accounting degree programmes. The following paragraphs will explain the background of the university, the faculty and the education system in Malaysia.

2. The history of University of Malaya
University of Malaya is the first University established in Malaysia. Its history can be traced back to the year 1905 when the King Edward VII College of Medicine was established and 1929 with the establishment of Raffles College. On 8 October 1949, University of Malaya was officially formed when the two colleges were combined. At that time, the university was established as a national institution to serve the higher education needs of the Federation of Malaya and Singapore (web site of University of Malaya – www.um.edu.my).

During the first ten years of establishment, University of Malaya had experienced rapid growth resulting in the establishment of two autonomous divisions in the year 1959; with one division located in Singapore whilst the other was in Kuala Lumpur. A year later, in 1960, a national university in each division was established following the wishes of the divisions. The national university established in the Kuala Lumpur division was made official with the passing of legislation in 1961 founding the University of Malaya on 1 January 1962 (web site of University of Malaya – www.um.edu.my).

2.1 The history of Faculty of Business and Accountancy
The FBA first started as two separate departments – Department of Business and Department of Accountancy in the Faculty of Economics and Administration. However, as there was a growing demand from the nation for professional manpower especially in the areas of business and accounting, the two departments were later transformed into a faculty – FBA on 1 February 1997. Since then, the faculty has experienced rapid growth with various programmes offered ranging from bachelors in business administration and accounting to doctorate. Currently, the undergraduate
student population in the faculty is 1,400 with an average of 400 new students registering for the degree in business administration and accounting each year.

3. Education system in Malaysia

The education system in Malaysia now is based on the education system suggested by the Razak Report in 1956 (Yahaya, 2003). The report was named after Malaysia’s late second Prime Minister Tun Abdul Razak who headed the committee for establishing an education system for Malaya. This committee was formed with the purpose of introducing an education system for the country and yet preserve the needs and harmonious relationship of the three major races – the Malays, Chinese and Indians. The committee then submitted a plan that serves as a foundation of Malaysia’s education system in the post-colonial era. Amongst the suggestions of the report include implementation of the Malay language and English as compulsory subjects in all primary and secondary schools and establishing a curriculum which is based on a similar syllabus for all schools in the country, as well as having standardized examination for students in all schools (Yahaya, 2003). Malaysia’s education system is divided into three levels – the primary, secondary and post-secondary levels (web site of Ministry of Education of Malaysia – www.moe.gov.my/english).

3.1 The primary level

The primary level consists of two types of schools: the national schools and the national-type schools. The differences between the two schools are the medium of instruction and compulsory subjects. For the national schools the medium of instruction is the Malay language and English is the compulsory subject. However, other languages, for instance, Mandarin and Tamil are available for students who wish to study the languages. On the other hand, the medium of instruction in national-type schools is either Mandarin or Tamil. Nevertheless, to maintain a relationship among the various ethnic groups in Malaysia, students in national-type school are required to study the Malay language and English as compulsory subjects – a suggestion in the Razak Report 1956 which is still being practiced now. The national-type schools are formed to cater for the needs of the non-Malay residents who wish to maintain their touch with their mother tongue by having it as the medium of instruction in such schools (web site of Ministry of Education of Malaysia – www.moe.gov.my/english).

3.2 The secondary level

Meanwhile, there are three types of schools in the secondary level; the academic schools, national religious schools and technical schools. The difference among these schools lies in the subjects taught. In the academic schools, general subjects in art and science streams are offered to the students, plus the vocational and technical subjects which are also incorporated in the curriculum. The national religious schools on the other hand, offer compulsory subjects related to Islamic teachings whilst at the same time offering general academic subjects to the students. The technical schools on the other hand offer vocational and technical subjects in addition to subjects on general education. The students in the academic schools and national religious schools are assessed in the national exam – Malaysia Certificate of Education (SPM)[2] whilst for the technical schools the students will have to sit for Malaysia Certificate of Education – Vocational (SPMV). Malaysia Certificate of Education (SPM)
3.3 The post secondary level

Post secondary level is also a very important level for the students who wish to further their studies in the local universities. This is because entry to universities is based on the students’ achievement in examinations at this level. There are three programmes in this level; the matriculation programme, the Malaysian Higher School Certificate (STPM)[3] and certificate programme. The matriculation programme or pre-university studies is a two-semester one-year program conducted by colleges and some local universities for the Bumiputera students in order to prepare them for entry to local universities. The curriculum in the matriculation programme is a balance of academic and co-curricular studies. Conversely, the Malaysian Higher School Certificate (STPM) is a programme open to all students that offer academic, technical and religious subjects. The certificate programme, on the other hand is a one to two-year programme specifically conducted to train students in vocational areas. In the FBA, University of Malaya, the entry requirement for degree in business administration and accounting is based on the students’ result obtained in the matriculation programme and Malaysian Higher School Certificate (STPM).

4. Literature review

A review of the literature provided a broad list of factors that have been used as predictors of academic performance, including secondary school academic performance, admission qualifications, gender, attendance (full time/part time), linguistic capacity, ethnicity, culture and age. A study conducted by Eskew and Faley (1988) showed that scholastic aptitude test (SAT) NOTE – SAT is an aptitude test widely used in the United States that measures one’s intellectual ability in English and mathematics. SAT scores are commonly used by the United States’ colleges as the criteria for admitting students, previous and more recent academic performance, effort/motivation, related experience and pre-college study of accounting are all significantly related to the students’ performance in introductory accounting courses. Carpenter et al. (1993), however, found that the undergraduate accounting students’ achievement depends on their race and expectations. The study that they had conducted in three universities in the United States – a large research-oriented public university, an urban public university and a private university – showed that the majority students (i.e. the whites) perform better than the minority students (i.e. the blacks, Hispanics and native American) who are likely to drop the course[4].

With respect to students’ performance in introductory marketing course, a study was conducted by Borde (1998) to determine the extent to which factors like gender, age, academic origin, grade point average, extracurricular activities and employment influence the grades obtained in the course. The students in the research were taken from a public university in Florida. The results showed that gender, age and engagements in extracurricular activities are unrelated to students’ performance. However, the grade point average or GPA was found to be positively and strongly
related to the students’ performance suggesting that students who perform well in other courses tend to perform well in introductory marketing course.

In Malaysia, a number of studies were conducted to determine factors influencing the performance, not only of students in the universities but also students in the post secondary level – the sixth form. Onn (1999) had conducted a research on 6th form students. The result of the study showed that there is no significant relationship between performance in accounting paper and socio-economic status of the students. Also, there is no significant relationship between performance in accounting paper and subjects taken in SPM level. Nonetheless, it was found out that there is a positive correlation between the performance in the accounting paper and the students’ attitude and a positive correlation between the performance in the accounting paper and the teaching methods. Ho (2000) had also conducted a research on the attitude of students towards accounting amongst the form six students. Results of the research indicated that the academic achievement of students is related to the attitude of students towards the subject, interest, time, perception of parental support, and teachers’ influence and socio-economic status. However, the study found that gender does not have any influence on academic achievement.

With regards to students’ performance in the university, a study was done by Manan and Mohamad (2003) on students’ performance in MARA University of Technology (UITM). The study found that the female students perform better than the male students in their CGPA. In University of Malaya, a study was carried out by Isa et al. (1992) to determine the students’ performance in the Faculty of Economics and Administration, University of Malaya; focusing on subjects like micro-economics, macro-economics and other economics subjects. The study shows that students with good grades in English in the SPM level tend to perform better than students with poor grades. However, this study focused on economics subjects which the students in the Faculty of Economics are required to take. A similar study was conducted by Tho (1994) on the students’ performance in the first year accounting course in the Faculty of Economics, University of Malaya. According to the study, the students’ performance in the first year accounting course measured by the result they obtained is dependent on their performance in STPM Economics and mathematics.

Based on the literature that has been reviewed, a study is undertaken to identify the factors that influence the performance of students in FBA, University of Malaysia that encompasses the students in both business and accounting degree programme. This study will incorporate some of the variables identified in the previous research.

5. Research methodology
The data collection undertaken for this study is obtained from the Record’s Office of FBA, University of Malaya. Data used in this study is obtained from accounting and business students who have graduated from the faculty. Their performance during the years in the faculty is measured by the final CGPA that they obtained. This data is gathered from the year 1998 until 2000.

Details of the students are divided into three sections: A, B and C. Section A includes particulars of the students such as gender, ethnicity, state of residence and entry qualification. Section B comprises the students’ academic results prior to enrolment in the degree programme – detailed SPM results, STPM results and matriculation results. In Section B, the students’ exact grades were keyed-in. Section C includes
particulars relating to the degree programme such as semester and academic year enrolled, degree programme enrolled – degree in business administration (BBA) or degree in accounting or (B Accounting), academic year graduated, number of semesters spent in the degree programme and the final cumulative grade point average (CGPA) score.

The students’ data obtained from the Record’s Office were later transferred into coding sheets and entered into the statistical package for social sciences (SPSS) programme to be analysed. The analysis tools that will be used in this research are correlation coefficient, multiple regression, t-test, ANOVA and factor analysis.

The analysis conducted will examine the relationship that exists between the independent and dependent variables; i.e. how the socio-economic background of the students and their performance prior to entering the university affect the performance of the students at the university. The research model for this study is built using the following variables – the students’ demographic profile, entry qualification and previous academic performance, i.e. SPM, STPM and matriculation results.

6. Analysis of data
Three hundred and fourteen student data were obtained for this study. Data were collected only from students whose records are complete and contain all the particulars required in this research. Out of 314 data, 190 data are gathered on students who enrolled in the degree in business administration (BBA) and the remaining 124 are from the accounting programme (B Accounting). 248 data are obtained from female students, whilst the remaining 66 come from male students. The breakdown of the ethnicity groups is as follows: Malay or Bumiputera (including the natives from East Malaysia – Iban and Kadazan) 71, Chinese 206, and Indian 37. This is shown in Figure 1.
Meanwhile, 9.9 per cent of the students in this study obtained a final CGPA of 3.7 or more, 57 per cent obtained final CGPA between 3.00 and 3.69, 31.2 per cent obtained between 2.3 and 2.99 and 1.9 per cent obtaining less than 2.3 for their final CGPA which is shown in Table I. In this study, 86 per cent of the data collected were from students who were admitted into the faculty based on their STPM results, whilst 14 per cent were based on matriculation results.

6.1 Correlation coefficient
The correlation coefficient analysis is carried out in order to determine the relationship of the independent variables with the dependent variable; which is the students’ CGPA in the final semester. The result shows that most of the grades of subjects taken prior to entering into the degree programme are related to the students’ final CGPA.

From the analysis, the economics subject taken in STPM level is observed to have the highest positive correlation with the final degree CGPA; that is 0.605, significant at 0.01 level. This shows that the higher the grades obtained for the subject, the higher the CGPA obtained by the student in the final semester. However, subjects that are not related to the courses taken in the business and accounting degree programme, for example, chemistry, biology and science (SPM level) are found to have almost no relationship with the students’ final CGPA and the results are not significant.

Interestingly, all the subjects taken by the student in the matriculation programme are found to have negative relationships with the students’ CGPA in the final semester. On the other hand, subjects taken in the SPM level that are related to the courses in the accounting and business programme such as foundation of economics and commerce are very loosely related to the students’ final CGPA and the result is not significant. The summary of the analysis is presented in Table II.

6.2 Regression analysis
Although the correlation coefficient analysis carried out indicates that some of the subjects taken prior to entering the university have some degree of relationship with the students’ CGPA in the final semester, the analysis is not sufficient to explain how the final CGPA obtained by the students varies given a set of predictor variables. This is due to the fact that the correlation coefficient only measures the relationship of two variables. The analysis will not provide an accurate measure of the relationship of a dependent variable with the predictor variables if the predictor variables are related to a certain extent with other variables. Hence, the multiple regression analysis is carried out in order to determine to what extent the percentage in variation of the students’ final CGPA is caused by a set of variables; namely the subjects taken before entering the university.

In carrying out the regression analysis, the predictor variables used in the regression model are all the subjects taken in the SPM and STPM level and in the

<table>
<thead>
<tr>
<th>CGPA of 3.70 or more</th>
<th>CGPA between 3.00 and 3.69</th>
<th>CGPA between 2.3 and 2.99</th>
<th>CGPA of 2.2 or less</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students</td>
<td>31</td>
<td>179</td>
<td>98</td>
<td>6</td>
</tr>
<tr>
<td>Percentage</td>
<td>9.9</td>
<td>57</td>
<td>31.2</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Table I. Students’ performance according to classes of CGPA
matriculation programme that have correlation coefficient values which are significant – namely English, modern mathematics, additional mathematics, principles of accounting and total aggregate (in the SPM level), economics, accounting, mathematics and number of principals (in the STPM level), and foundations of business management, financial accounting 2, management accounting, macro-economics, statistics, calculus 2 and final CGPA obtained in the matriculation programme.

The strength of association of the dependent variable (in this case the scores in final CGPA for degree) and the predictors are measured by the coefficient of multiple determination, or $R^2$. The regression analysis performed for this study indicates that all the predictor variables, i.e. the students’ academic achievement prior to entering the university explains 47.6 per cent variance in the students’ CGPA obtained in the final semester. The $F$-value of 25.152 and its significant value of 0.000 in Table III show that this model is significant.

The result of the multiple regression model used in the study appears to compare favourably with other studies which use multiple regression model – namely Eskew

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Correlation coefficient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Subjects taken in the SPM level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English</td>
<td>0.344</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Modern mathematics</td>
<td>0.535</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Additional mathematics</td>
<td>0.315</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Physics</td>
<td>0.112</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Chemistry</td>
<td>0.079</td>
<td>$p &gt; 0.05$</td>
</tr>
<tr>
<td>Biology</td>
<td>0.085</td>
<td>$p &gt; 0.05$</td>
</tr>
<tr>
<td>Science</td>
<td>0.080</td>
<td>$p &gt; 0.05$</td>
</tr>
<tr>
<td>Principle of accounts</td>
<td>0.386</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Foundation of economics</td>
<td>0.091</td>
<td>$p &gt; 0.05$</td>
</tr>
<tr>
<td>Commerce</td>
<td>−0.073</td>
<td>$p &gt; 0.05$</td>
</tr>
<tr>
<td>Total aggregate</td>
<td>−0.492</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>(b) Subjects taken in the STPM level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>0.605</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Accounting</td>
<td>0.348</td>
<td>$P &lt; 0.001$</td>
</tr>
<tr>
<td>Mathematics</td>
<td>0.417</td>
<td>$P &lt; 0.001$</td>
</tr>
<tr>
<td>Number of principals</td>
<td>0.368</td>
<td>$P &lt; 0.001$</td>
</tr>
<tr>
<td>(c) Subjects taken in the matriculation programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial accounting 1</td>
<td>−0.114</td>
<td>$p = 0.059$</td>
</tr>
<tr>
<td>Foundations of management</td>
<td>−0.127</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>General studies</td>
<td>−0.117</td>
<td>$p = 0.051$</td>
</tr>
<tr>
<td>Micro-economy</td>
<td>−0.105</td>
<td>$p = 0.080$</td>
</tr>
<tr>
<td>Mathematics</td>
<td>−0.132</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Calculus 1</td>
<td>−0.123</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Computer studies</td>
<td>−0.123</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Foundations of business management</td>
<td>−0.285</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Financial accounting 2</td>
<td>−0.264</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Management accounting</td>
<td>−0.235</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Macro-economy</td>
<td>−0.281</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Statistics</td>
<td>−0.291</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Calculus 2</td>
<td>−0.249</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Final matriculation CGPA</td>
<td>−0.285</td>
<td>$p &lt; 0.001$</td>
</tr>
</tbody>
</table>

Table II. Correlation coefficient of the subjects taken prior to entering the university with the students’ CGPA
and Faley (1988) and Tho (1994). The studies ascertained values of adjusted $R^2$ as 0.53 and 0.66, respectively. Meanwhile, values of beta of the following independent variables – i.e. SPM-English and SPM-aggregate total are found to have negative influence on students' performance. Other variables appear to have positive influence on the students' final CGPA obtained.

All of the independent variables shown in Table III contribute significantly to variation of the students' performance in FBA. The variables that are not included in the model are the subjects taken in the matriculation programme which are foundations of business management, financial accounting 2, management accounting, macro-economics, statistic and calculus 2. These variables are excluded since they do not constitute significant explanatory variables of the model. Table III indicates that the variance inflation factors (VIF) for the variables in the model are all less than three. This suggests that the problem of multicollinearity is not a serious problem in the study. Multicollinearity can be defined as a circumstance where high multiple correlation exists among the independent variables. Multicollinearity causes problem because its existence indicates that the effects of individual independent variables on the dependent variable are distorted by other independent variables. VIF greater than ten is normally regarded as an indicator that multicollinearity is a problem in a study (Neter et al., 1989, p. 409). Since the VIF for the variables in the model are less than three, this suggests that multicollinearity is not a problem in this research.

6.3 $t$-test

The $t$-test is used for making statements about the means of the parent populations. The null hypothesis is that the mean of the two populations is equal. The $t$-test is used to determine whether the means of two populations differ. In this study, two sets of hypothesis testing are developed from previous literature. The study by Manan and Mohamad (2003) on students' performance in MARA University of Technology (UITM) found that the female students perform better than the male students in their CGPA. The study conducted by Tho (1994) also indicated that there is a positive

<table>
<thead>
<tr>
<th>Variables in the equation</th>
<th>Standardized beta</th>
<th>$t$-statistic</th>
<th>$t$-significance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPM-English</td>
<td>-0.050 (0.012)</td>
<td>-0.109</td>
<td>$p &gt; 0.05$</td>
<td>1.576</td>
</tr>
<tr>
<td>SPM-modern mathematics</td>
<td>0.186 (0.023)</td>
<td>2.645</td>
<td>$p &lt; 0.05$</td>
<td>2.796</td>
</tr>
<tr>
<td>SPM-additional mathematics</td>
<td>0.111 (0.007)</td>
<td>1.251</td>
<td>$p &gt; 0.05$</td>
<td>1.762</td>
</tr>
<tr>
<td>SPM-principle of accounts</td>
<td>0.098 (0.006)</td>
<td>1.811</td>
<td>$p &gt; 0.05$</td>
<td>1.778</td>
</tr>
<tr>
<td>SPM-aggregate total</td>
<td>-0.239 (0.005)</td>
<td>-3.612</td>
<td>$p &lt; 0.001$</td>
<td>1.711</td>
</tr>
<tr>
<td>STPM-economics</td>
<td>0.235 (0.026)</td>
<td>3.893</td>
<td>$p &lt; 0.001$</td>
<td>2.790</td>
</tr>
<tr>
<td>STPM-accounting</td>
<td>0.014 (0.008)</td>
<td>0.172</td>
<td>$p &gt; 0.05$</td>
<td>1.777</td>
</tr>
<tr>
<td>STPM-mathematics</td>
<td>0.044 (0.008)</td>
<td>0.712</td>
<td>$p &gt; 0.05$</td>
<td>2.044</td>
</tr>
<tr>
<td>STPM-number of principals</td>
<td>0.106 (0.052)</td>
<td>1.829</td>
<td>$p &gt; 0.05$</td>
<td>1.878</td>
</tr>
<tr>
<td>Matriculation final CGPA</td>
<td>0.023 (0.132)</td>
<td>0.394</td>
<td>$p &gt; 0.05$</td>
<td>1.844</td>
</tr>
</tbody>
</table>

Model statistics

- Adjusted $R^2$: 0.476
- $F$-value: 25.152
- $p$: $< 0.001$

Note: Standard errors of the betas are in parenthesis.
correlation between female students and students’ performance. According to the study undertaken by Tho (1994), the gender variable is a significant explanatory variable of performance in the multiple regression model. Meanwhile, the similar research carried out by Tho (1994) indicated that although there is a significant positive correlation between residential status and student performance, the residential status is not a significant explanatory variable in the regression model developed. Based on these previous studies, the following hypothesis is developed:

\[ H1. \] There is significant difference between gender and students’ performance.

\[ H2. \] There is significant difference between residential status of the students and their performance[5].

The results obtained show the following: the significance value obtained for \( H1 \) is less than 0.05. Thus, the male students’ performance differs from the female students. The female students’ mean of 3.2139 is higher than the mean of the male students at 3.0438. Meanwhile, for \( H2 \), the significance value ascertained is greater than 0.05. In this case, we can conclude that the performance of the students is irrespective of their residential status. The analysis is summarised in Table IV.

\[ 6.4 \text{ ANOVA} \]

ANOVA determines the differences between more than two means. The null hypothesis is the means in the population are equal. In this study, the hypothesis is developed based on the previous literature; Carpenter et al. (1993) who found that the undergraduate accounting students’ achievement depends on their race. In their study, the white students are found to perform better than the blacks, Hispanics and native American students.

The hypothesis developed in this study is as follows:

\[ H3. \] The students’ performance is dependent upon their race.

The ANOVA analysis conducted for students with various ethnic groups background shows that the Chinese students perform differently than the Malay and Indian students. However, the means in the population of the Malay and Indian students are equal, meaning there is no significant difference in the performance of Malay and Indian. Table V shows the results.

\[ 7. \text{ Discussion} \]

From the analysis carried out in the study, it appears that not every subject taken by the students before entering the university has a positive relationship with their final
CGPA in the degree programme. In the SPM level, five subjects that are found to have positive relationships with the students’ final CGPA are English, modern mathematics, additional mathematics, physics, and principle of accounts. The relationship between SPM total aggregates and the students’ final CGPA, however, is a negative one. This negative relationship nevertheless is comprehensible since it is due to the manner in which the total aggregates and the students’ final CGPA are recorded. This fact has been explained in the regression analysis paragraph.

Out of the five subjects, physics is the subject that has the weakest positive correlation of 0.112. The results seem to suggest that generally, subjects in the SPM level that have a certain degree of influence on the students’ final CGPA are those related to mathematics, English and accounting. On the other hand, subjects that are related to the core courses that the students are required to take in the degree programme, for example, Foundation of Economics and Commerce do not have strong positive relationships with the students’ final CGPA.

In the STPM level, all subjects – economics, accounting, mathematics, are found to have positive relationships with the students’ final CGPA; including the number of principals (Ps) obtained. Comparison of these results implies that getting good grades in subjects like mathematics, accounting and economics increases the students’ level of understanding which will later assist the students undertaking the courses in the degree programme. However, it could be inferred that the students’ knowledge gained in Foundation of Economics and Commerce subjects in the SPM level does not equip them with the necessary level of understanding that will ensure the students to get through the degree programme.

In the matriculation level, it appears that all the subjects taken are negatively related to the students’ final CGPA. Given the manner in which the subjects are recorded, i.e. higher grades will be entered on higher scales in the data[6]; the results seem in the first instance to be disappointing. However, given that only 14 per cent out of 314 data, i.e. 44 data collected are related to students who entered the faculty through matriculation programme, perhaps, if more samples are gathered, the result may turn out differently. In this study, only 44 data on students with matriculation qualification are recorded since these are the only records that contain complete required particulars. Hence, the small number of data collected for matriculation students compared to the STPM students forms the limitation of this research.

The regression analysis in this research shows that the students’ academic achievement prior to entering the university explains 47.6 per cent variance in the students’ final CGPA. This implies that other variables that are not identified in the regression model account for another 52.4 per cent variation. This provides an

<table>
<thead>
<tr>
<th>Ethnic groups</th>
<th>Mean difference ($I - J$)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malay/Bumiputera</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>−0.64323</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Indian</td>
<td>−0.05705</td>
<td>$p &gt; 0.05$</td>
</tr>
<tr>
<td>Chinese</td>
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<tr>
<td>Malay/Bumiputera</td>
<td>0.64323</td>
<td>$p &lt; 0.001$</td>
</tr>
<tr>
<td>Indian</td>
<td>0.58618</td>
<td>$p &lt; 0.001$</td>
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</tr>
</tbody>
</table>

Table V. ANOVA analysis for ethnic backgrounds
opportunity for future research that could explore other variables such as the students’ level of involvement in the extracurricular activities, hours spent on studying the subjects, attendance in lectures and tutorials and peer’s influence which could have an effect to the students’ final CGPA.

Contrary to Borde’s (1998) findings that gender is not related to the students’ performance, the result in this study is consistent with the study by Tho (1994) and Manan and Mohamad (2003) which indicates that the female students perform better than the male students. This, again, opens the door to future research that could examine the studying pattern between the two genders. This, in turn, would perhaps, enlighten the fact why male students’ performance is lagging behind the female students.

The result of this research is also consistent with the findings of Carpenter et al. (1993) who discovered that the students’ performance is related to their ethnic background. In this study, the Malay, Indian and other students seem to lag behind the Chinese students. Again, this fact requires the future research to explore and determine the factors that could cause the difference in the performance amongst the races.

8. Implication of this study
Based on the findings of this research, the students’ performance in the degree of business and accounting programme is closely related to their performance prior to entering the university especially in subjects like mathematics in the SPM level and economics in the STPM level. This shows that the students’ level of understanding as demonstrated by the results obtained in these subjects will assist them in undergoing both the business and accounting programme in the faculty.

In the light of this matter, effort could, perhaps, be taken at the university level to assist the students, especially those who obtain low grades in mathematics at the SPM level and economics in STPM to improve their understanding in those subjects. Apart from requiring the students to attend extra classes, the students’ understanding of these subjects could further be enhanced through introduction of mathematics and economics-based activities, games and competitions to the students’ clubs.

Since the level of students’ understanding in subjects like mathematics, economics and accounting prior to entering the degree programme is also dependent upon the knowledge imparted to them at schools, the role could be played by the counsellors to further educate the students at an early stage in schools to ensure that they have strong foundation on these subjects if they wish to further their studies in business or accounting degree programmes. The teachers could also play a role by instilling creativity in teaching the subjects in an effort to encourage the students to take more interests in learning them.

The result of the study shows that there are other variables not identified in the regression model which account for another 52.4 per cent variation of the students’ performance as measured by their CGPA obtained in the final semester. Hence, it is crucial for academics, researchers and educators to explore the other variables that could affect the students’ performance. Since the university is the place where the school leavers strive to cope with campus life and learn to live away from the close supervision of their parents, the students’ life and pattern of study could have an impact on their performance. This is a fact that could be explored in future research.
The future research based on the students’ life and their pattern of study could perhaps enlighten why female students perform better than the male students and why Chinese students seem to be ahead of students of other races in their performance at the university.

9. Conclusion
As a conclusion, this study reveals that the knowledge obtained from subjects like economics, mathematics and accounting is essential in assisting the students in getting through the business and accounting degree programme. Hence, efforts should be directed at increasing the students’ comprehension in these subjects in order to reduce the number of student drop-outs in the faculty. However, the results from this research indicate that there are other variables that could influence the students’ performance in the university. Identifying these factors is vital to ensure that the students who are qualified to enter into the degree programme do graduate from the university with excellent results.

Glossary
CGPA = Cumulative grade point average
This system is widely used by the universities in Malaysia in assessing a students’ achievement. The CGPA is by dividing the cumulative grade points (determined by multiplying the grade values of subjects taken with the number of hours in the semester) with the cumulative attempted hours (i.e. credit hours in which the students obtained a grade).

FBA = Faculty of Business and Accountancy, University of Malaya.

SAT = Scholastic aptitude test
SAT is an aptitude test widely used in the United States that measures one’s intellectual ability in English and mathematics. SAT scores are commonly used by the United States’ colleges as the criteria for admitting students.

SPM = Sijil Pelajaran Malaysia – Malaysia Certificate of Education
Malaysia Certificate of Education (SPM) is an examination conducted for the secondary level students who pursue their studies in the Malaysian education system. It is equivalent to the “O-level” examination in the United Kingdom.

SPMV = Sijil Pelajaran Malaysia Vokasional – Malaysia Certificate of Education – Vocational
Malaysia Certificate of Education – Vocational (SPMV) is an examination conducted for the secondary level students who pursue their studies with specialisation in technical subjects in the Malaysian education system. It is equivalent to the “O – Level” examination in the United Kingdom.

SPSS = Statistical package for the social sciences
SPSS is a statistical software package used specifically to undertake a broad range of statistical procedures. It can be used to summarise data, determine whether significant differences exist between groups and examine relationships among variables. In addition, it can also be used to chart graph results of the data.

STPM = Sijil Tinggi Pelajaran Malaysia – Malaysian Higher School Certificate
Malaysian Higher School Certificate is an examination conducted for the post-secondary level students who pursue their studies in the Malaysian education system. It is equivalent to the “A-level” examination in the United Kingdom.
VIF = Variance inflation factors
These factors measure how much the variances of the estimated regression coefficients are inflated as compared to when the independent variables are not linearly related (Neter et al., 1989, p. 408).

Notes
1. Bumiputera is a term referring to the natives in Malaysia comprising largely the Malays, the Orang Asli and the natives from East Malaysia – the Ibans and Kadazans.
2. Equivalent to the “O-level” exam in the United Kingdom.
3. Equivalent to the “A-level” exam in the United Kingdom.
4. This study was conducted in the light of a significant decrease in the number of new black professionals and managers in major public accounting firms and accounting firm in the United States as reported by AICPA (American Institute of Certified Public Accountants) in 1989.
5. The residential status here is defined as “Malay States” and “Other States”. Malay states are the states which are being predominantly inhabited by the native Malays – Kelantan, Terengganu, Kedah and Perlis. Other states are the states other than these four states.
6. In FBA, there are two active students’ club which are the Business Club and the Accounting Club.

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