

Predicting Success in University Accounting Examination Performance

Susan Tho Lai Mooi

Abstrak

Tujuan kajian ini adalah untuk menentukan kesan faktor akademik terhadap pencapaian pelajar dalam program Ijazah Muda Perakaunan, Universiti Malaya. Kesan faktor akademik, iaitu pencapaian dalam STPM dan prestasi akademik tahun pertama terhadap prestasi peperiksaan dalam mata pelajaran perakaunan disiasat. Keputusan kajian menunjukkan pencapaian akademik yang baik boleh digunakan untuk meramalkan kejayaan dalam program perakaunan. Perkara ini adalah penting kerana bermula tahun 1996, Universiti Malaya telah menerima penuntut secara terns ke dalam program ini berasaskan pencapaian dalam STPM. Lagipun, keputusan ini boleh menjadi input bagi menentukan strategi dan dasar program perakaunan demi kebaikan pelajar dan fakulti. Keputusan kajian ini disokong oleh bukti daripada kajian serupa yang dijalankan di Amerika Syarikat dan Australia. Sebaliknya,, perbezaan persekitaran iaitu di antara kawasan bandar dan luar bandar didapati tidak mempunyai kesan terhadap prestasi pelajar.

Introduction

Accounting education research is abound with studies which investigate predictors of examination performance in the first-level university accounting course. Some studies on the determinants of performance in intermediate accounting and subsequent performance in the accounting curriculum are available from developed countries. Unfortunately, there is insufficient accounting performance studies from developing countries such as Malaysia. It is the intention of this study firstly, to provide some evidence on pre-entry and first year academic results on accounting academic performance at the intermediate and advanced levels in a Malaysian university. Secondly, this study extends prior studies by analysing the impact of urban-rural schooling on accounting examination performance.

Education literature in developed countries suggests that rural communities are unique and can be distinguished from their urban counterparts by their structural and cultural characteristics. Rural communities are characterised by their "relatively small size and isolation or distance from professional and personal support" and are unique with respect to "educational values, cultural history . . . and socio-economic class" (Capper 1993, p. 24). It has been argued that these characteristics interact and exert strong influences on educational practices and effectiveness. They can constrain or support educational productivity, and hence examination performance.

Malaysian educational studies on the influence of urban-rural status on secondary school examination performance (Beebout, 1972; Leong et al., 1990), and the first year Principles of Accounting course (Tho, 1994) have not produced conclusive findings. Beebout (1972) did not report any significant difference in achievement between students in rural schools and urban schools. However, the study by Leong et al. (1990) on the performance of students in three major Malaysian public examinations found that students from urban schools performed better than those from rural schools. But, it was also reported that differences in performance narrowed at the upper secondary and high school levels. On the other hand, the study of Tho (1994) on examination performance of the first year university Principles of Accounting course, did not find urban-rural status to be a significant determinant in her regression analysis. It is the intention of this study, then, to provide further evidence on the relevance of this factor to student examination performance in intermediate and advanced accounting studies in Malaysia.

This preliminary study seeks to explore the extent to which variability in accounting performance in the Bachelor of Accounting Programme may be explained by academic variables and socio-demographic factors. Specifically, the associations between accounting academic performance in the second, third, and fourth years of the Bachelor of Accounting degree at the University of Malaya, and academic achievement (STPM grade points, first year accounting results, first year non-accounting results) and socio-demographic factors (gender, urban-rural status) are investigated.

Prior Studies on Accounting Examination Performance

Many studies are concerned with performance determinants of the first year accounting course at universities (Baldwin & Howe, 1982; Bergin, 1983; Mitchell, 1985; Farley & Ramsay, 1988; Eskew & Faley, 1988; Auyeung & Sands, 1992; Gul & Fong, 1993; Bartlett, 1993; Tho, 1994).

Various surrogate measures of subsequent performance in intermediate and advanced accounting examination performance have also been reported in the literature. They include intermediate accounting, grade-point averages of the undergraduate accounting programme; grades in all upper-division courses; grades in all upper-division accounting courses, third year financial and management courses; and the aggregate examination achievement in second and third year courses (Eckel & Johnson, 1983; Hicks & Richardson, 1984; Dockweiler & Willis, 1984; Ingram & Petersen, 1987; Auyeung & Sands, 1992; Bartlett et al., 1993). This study analyses accounting performance in the second, third and fourth years of the Bachelor of Accounting programme by using the overall examination scores of accounting courses obtained in each of the three years.

Findings in education research support the importance of academic achievement measures as predictors of accounting performance. The most commonly identified significant predictors are previous college grade-point average, scores of first year accounting courses (comprising Accounting Principles I and II courses) and high school grade-point average (McCormick & Montgomery, 1974; Frakes, 1977; Delaney et al., 1979; Dockweiler &

Willis, 1984; Ingram & Petersen, 1987). In this study academic variables studied are STPM grade points, the first year accounting paper and the overall first year grade points obtained.

A number of other studies have examined the effect of socio-demographic variables on accounting performance, such as gender, age, marital status and work experience, etc. (Frakes, 1977; Delaney et al., 1979; Dockweiler & Willis, 1984; Ingram & Petersen, 1987; Mutchler et al" 1987;. Carpenter et al.,1993). A study using United Kingdom data by Bartlett et al. (1993) investigated a range of educational, demographic, and financial variables on a sample of thirty-nine students. They found very few significant variables, and the coefficients of determination, R^2 of all the regression models were insignificant in explaining the first year and third year financial and management accounting examination performance.

Findings on gender performance in intermediate and advanced accounting courses have been mixed. Mutchler et al. (1987) reported that female students outperformed male students in upper division accounting courses. However, accounting studies by Delaney (1979), Carpenter et al. (1993) and Bartlett (1993) did not find any significant difference in gender performance. To provide some Malaysian evidence, the gender variable is included in this study. Other demographic variables such as age, marital status, and working experience have not been included in the study as the sample units are very homogeneous in terms of these characteristics. The majority of students enter Malaysian universities after obtaining the high school certificate at the age of 20 years. Generally, they have no prior working experience, and are not married.

Methodology

Students are generally admitted into universities in Malaysia based upon their performance in the STPM examination. Data for the study were collected from student records for three batches of students accepted into the Bachelor of Accounting programme, giving a total of 223 cases.

The stepwise multiple regression model are used to analyse the results. The dependent variables which represent accounting examination performance for each of the three years of the programme are as follows:

- YEAR2 = the average examination score of accounting courses in the second year for the three batches of students
- YEAR3 = the average examination score of accounting courses in the third year for the three batches of students
- YEAR4 = the average examination score of accounting courses in the fourth year for the three batches of students

The independent variables are classed as academic variables and social-demographic variables.

Academic Variables:

STPM = the total grade points obtained in the Malaysian Higher School Certificate examination

ACC1 = the examination score of the Introductory Accounting course in the first year

YEAR1 = the total grade points for all courses (except Introductory Accounting) taken in the first year

Social-demographic Variables:

GENDER = 1 Female; 0 Male

STATUS = 1 Urban Areas; 0 Other areas

REGRESSION MODELS

YEAR2 = f(STPM, ACC1, YEAR1, GENDER, STATUS)

YEAR3 = f(STPM, ACC1, YEAR1, GENDER, STATUS)

YEAR4 = f(STPM, ACC1, YEAR1, GENDER, STATUS)

Stepwise regression models were estimated to predict accounting performance. The dependent variables of the models are accounting performance in the second year (YEAR2), third year (YEAR3) and fourth year (YEAR4) of the Bachelor of Accounting Programme. Accounting performance is operationalised by using the average examination scores of accounting courses in each of the three years of the programme for the three batches of students aggregated. The models examine the explanatory power of five independent variables; namely, the total grade points obtained at the STPM examination (STPM), the examination score of the Introductory Accounting course in the first year (ACC1), the total grade points for all courses in the first year except the Introductory Accounting course (YEAR1), male-female status (GENDER), and urban-rural status (STATUS).

For this study, urban status is defined as having attended school in capital cities and large towns in the fourteen states of Malaysia. The problem of multicollinearity was checked by an examination of the Variance Inflation Factor (VIF), a measure of multicollinearity among the independent variables. The VIF centred around 1.00 and in no instance was it more than 1.30, which is acceptable in the control of potential problems of multicollinearity (Neter & Kutner, 1985).

Results and Discussion

Table 1 shows the degree to which the independent variables were correlated with performance in the three years of study. The independent variables of STPM, YEAR1 and ACC1 correlate significantly with academic performance of all the three years of study and high correlation coefficients are observed for all the three academic variables.

The negative coefficient correlation of GENDER is only significantly correlated with second year performance, indicating better performance among male students. The variable, STATUS, is not significantly correlated with any of the three dependent variables.

Table 1: Correlation coefficients for independent regression variables with Year 2, Year 3, & Year 4 performance

Independent Variable	Year 2	Year3	Year4
STPM	0.46**	0.41**	0.37**
ACC1	0.17*	0.24**	0.29**
YEAR1	0.38**	0.44**	0.37**
GENDER	-0.14*	-0.06	-0.04
STATUS	-0.02	0.04	0.07

Significant at : p < .050 level*, p < .001 level**

Stepwise multiple regression analysis is employed to investigate the contribution of each of the independent variables. Table 2 presents the stepwise multiple regression results as well as the adjusted R² and F-values for the three years.

The model explains 31%, 32% and 25% (significant at p < .001 level, with F-values of 34.72, 35.66 and 26.31, respectively) of the variability of performance in the second, third and fourth year accounting studies. Significant predictors of second year performance are STPM (with standardised beta of 0.39), YEAR1 (0.30) and GENDER (0.16). The most significant predictors of performance in years three and four are STPM, YEAR1 and ACC1. In the third and fourth year male students still outperformed the female students, though only marginally significant in the third year and not significant in the fourth year.

Table 2:

Stepwise multiple regression for Year 2, Year 3 & Year 4 performance (Standardised Beta Coefficients & T-Statistics)

Independent Variable	Year 2	Year3	Year4
STPM	0.39 (6.80) ^{***}	0.30 (5.17) ^{***}	0.27 (4.53) ^{***}
ACC1	0.08 (1.43)	0.15 (2.58) ^{**}	0.21 (3.56) ^{***}
YEAR1	0.30 (5.11) ^{***}	0.35 (6.08) ^{***}	0.27 (4.56) ^{***}
GENDER	-0.16 (-2.87) ^{**}	-0.10 (-1.89) [*]	-0.08 (-1.44)
1STATUS	0.02 (0.35)	0.05 (1.02)	0.07 (1.24)
Model Statistics:			
Adjusted R ²	0.31	0.32	0.25
F-Value	34.72 ^{***}	35.66 ^{***}	26.31 ^{***}

(T-statistics are in parenthesis)

p <	.10	*
p <	.05	**
p <	.0001	***

STPM is an important predictor of university accounting performance, and its influence pervades into the final year of the accounting programme. STPM is the aggregate of five subjects taken at the Sijil Tinggi Pelajaran examination. This study provides support for the well-recognised rigor of form six education and training as a prerequisite for university education. The STPM is an important entry requirement for tertiary education. As such it would be appropriate to use the STPM examination as a benchmark for alternative pre-university studies, such as foundation programmes and matriculation studies. YEAR1 which represents general academic ability is another important predictor of success in university accounting examinations. YEAR1's influence on subsequent performance is anticipated as non-accounting subjects such as economics, quantitative analysis and management are included in the accounting curriculum.

The results of this research are consistent with those conducted in USA, whereby academic achievement measures are the most important predictors of accounting performance beyond the introductory level (McCormick & Montgomery, 1974; Frakes, 1977; Delaney et al., 1979; Dockweiler & Willis, 1984; Ingram & Petersen, 1987).

Though the Malaysian study of Tho (1994) indicated that female students, marginally outperformed male students in the first year introductory accounting course at the University of Malaya, the results of this study showed that, on the contrary, male students significantly do better than female students in second and third year accounting courses. However, this significant difference does not prevail into the fourth year. This is contrary to the findings of a USA study by Mutchler et al. (1987) where female students received higher grades than their male counterparts in upper-division accounting courses.

The urban-rural status (STATUS) of students has no influence on subsequent accounting performance. Apparently, given similar overall academic and accounting achievements, subsequent performance at tertiary level accounting is not significantly affected by differences in the schooling environment. Furthermore, it is theorised that rural students who are able to make it to high school level, have to a great extent, been able to overcome environmental disadvantages. It may be argued that the effect of structural and cultural differences between urban and rural schooling environments may be stronger at primary and secondary levels of schooling, but diminishes at university level. In addition, the Malaysian rural high school is said to be no different from an urban high-school. Compatibility can be seen in terms of administration and equipment. Furthermore, university education being centralised, tends to bring students with varying backgrounds together, thus reducing environmental differences that may exist. Though insignificant, the results obtained, nevertheless, contribute to a further understanding of accounting educational performance in light of perceived differences in urban-rural background.

This preliminary analysis has shown that academic achievements are the most important determinants of performance in accounting studies. Students admitted into the accounting programme at the University of Malaya are of high academic ability as they must meet stringent entrance standards. In this respect, the correlation between dependent and academic predictor variables are most likely to be understated. This is due to small variability in the predictor variables because of the discriminatory function performed by entrance requirements where only good academic performers are selected. Delaney et al. (1979) faced a similar methodological issue in their analysis of admission tests for entry into Intermediate Accounting. They admitted,

it is not possible to find the true correlation, and the inability to develop complete expost validation may be a problem inherent in tests used as admission standards . . . (p. 159).

Conclusion

Empirical evidence from this Malaysian study indicates that high achievement in the STPM examination is a good predictor of academic success in the University of Malaya accounting programme. This finding is significant as STPM can confidently be applied as a pre-entry criterion for allocating limited places available in accounting programmes. Similar studies conducted in developed countries such as USA and Australia support the results of this study. Empirical evidence has borne out the wisdom of using the STPM results as an

entry criterion in the allocation of limited places available at institutions of higher learning in Malaysia. The predictive-ability of the STPM examination takes on added significance when the Faculty admits students directly into the Bachelor of Accounting programme rather than after the first year of study, where entry into the accounting programme is based on the first year results.

The study has also presented evidence that perceived differences between urban and rural environments do not significantly account for variability in university accounting performance given similar academic achievements. Several plausible reasons for this finding have been discussed.

The strong predictive ability of YEAR1 and *ACCI* on success in subsequent accounting courses has significant implications for education strategy and policies at accounting faculties. A student's success in the first year of study is an important predictor of his or her ability to complete the accounting programme successfully. Perhaps, it may be prudent for faculties to counsel students who perform badly in the first year examination or even to allow them to change programme especially if they do not have any interest in accounting studies. In these cases, extended periods of study may be required, and may eventually also result in failure to complete the programme. To avoid loss of valuable time by the student and unproductive use of scarce faculty resources, universities should consider appropriate policies to deal with this problem.

As the study was conducted on the University of Malaya students only, generalisation to other universities may have to be viewed with caution. Similar research could be carried out in other universities in Malaysia as well as in other developing countries. This study has focused on students who have STPM as the university entry qualification. Enlarging the study to cover matriculation students may yield more insight into factors that determine success in accounting studies. Further research could also explore the relationship between high academic achievement in the university and subsequent job placement, career prospects and development.

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PENYUMBANG

Aida Suraya Md Yunus, Ph.D

Pensyarah

Fakulti Pengajian Pendidikan Universiti Putera Malaya

Mahzan Arshad, Ph.D

Perisyatah

Fakulti Pendidikan

Universiti Malaya

Mohamad Sahari Nordin, Ph.D

Profesor Madya

Kulliyyah Pendidikan

Universiti Islam Antarabangsa Malaysia

Mullai Ramiah Arunachalam, Ph.D

Pensyarah

Fakulti Bahasa dan Linguistik Universiti Malaya

Noor Fadhilah Mat Nayan Pensyarah

Fakulti Pendidikan

Universiti Malaya

Noraini Idris, Ph.D

Profesor Madya

Fakulti Pendidikan

Universiti Malaya

Rehana M. Khan, Ph.D

Associate Professor Faculty of Education

Allama Iqbal Open University (pakistan)

Masrur A. Khan, Ph.D

Associate Professor

Department of Communication

Universiti Islam Antarabangsa Malaysia

Nelofar, Ph.D

Lecturer

Department of Curriculum and Instruction Southern Illinois

University Carbondale, USA.

Susan Tho Lai Mooi, Ph.D

Profesor Madya

Fakulti Perniagaan dan Perkaunan

Universiti Malaya

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