HIGH SCHOOL GRADE AVERAGE, NATIONAL SECONDARY ACHIEVEMENT TEST RATING, AND ENGLISH AND MATH PLACEMENT EXAMINATION SCORES AS PREDICTORS OF ACADEMIC PERFORMANCE AMONG FRESHMAN STUDENTS IN INTRODUCTORY ACCOUNTING AT CENTRAL PHILIPPINE UNIVERSITY FOR SCHOOL YEAR 1997-98

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ABTRACT

The study determined the predictive ability of the college admission criteria —High School Grade Average (HSGA), National Secondary Achievement Test (NSAT) rating, English Placement Examination Score (EPES) and Math Placement Examination Score (MPES) on the academic performance of freshman students in Introductory Accounting (IA). Regressions analysis was used to explain variances in students' final grade in IA and a step-wise discriminant analysis was performed to build a predictive model that could predict academic performance in Introductory Accounting. The findings showed that a linear combination of all four independent variables was found to be the best predictor of the academic performance of freshman students in IA course. HSGA was found to be the strongest and EPES was found to be the weakest predictor.

INTRODUCTION

Today many colleges and universities have begun to grapple with the decision to scrap college admission requirements. Colleges have long struggled to find the best way to evaluate students' qualifications.

When determining an applicant's admissibility to college, many undergraduate admission offices select students based on the traditional predictors of academic performance such as standardized test scores and high school grades. Other colleges and universities identify potential college students by using nontraditional predictors such as gender and race. There are still other institutions that use traditional predictors in combination with nontraditional predictors in predicting the potential college performance of applicants.

In the US, polls suggest that most Californians believe university admissions should be based on merit, not on gender or race or grades and test scores. But higher education experts say that merit is more than a simple amalgam of grades and test scores. According to these experts, university admission is a complicated concept that varies depending on an institution's particular mission. Experts claim that if a university seeks merely to teach facts, it will prize students who show aptitude memorization, if it wants to have national reach, it will see merit in applicants from states not yet represented on campus, and if it wants students to learn from one another, it will value a broad mix of talents, experiences, and backgrounds.

In the Philippines, the government is vigilant in its campaign for equal access to education, though many colleges and universities, both state-owned and private, set their own admission criteria to identify the best-qualified college-bound students.

Central Philippine University (CPU) is a private, Christian tertiary school whose mission is to carry out a program of spiritual, intellectual, moral, scientific, technological and cultural training, and allied studies under influences which strengthen Christian faith, build up character and promote scholarship, research and community service (CPU Academic Manual). It aims to enable each student to actualize his/her potential as an individual and as a member of society. To attain this, the university had sought answers to some vital educational issues, particularly in the College of Commerce. It had to cope with the needs of the students, faculty and staff, and the global community. Needless to say, CPU has to maintain its academic status, being an accredited institution. It must conform to the policies created by the Commission on Higher Education (CHED) for private colleges and universities.

One of the policies set by CHED pertains to the passing percentage in board examinations. To attain this, a screening process is required for incoming freshman students, which included the student's high school grade average (HSGA), National Secondary Achievement Test (NSAT) rating and scores in the English and Math placement examinations given by the university for the entire population of freshmen applicants.

Despite the requirements set by each department, it has been observed that these freshmen students enrolled in the course Introductory Accounting (IA) earn low grades. As a result, they are advised to shift to another degree program. There had been a steady increase in student dropouts for the last three years. During school year 1999-2000, 99 students of the 962 freshmen failed, dropped or

left Introductory Accounting, a basic subject required to all freshmen Commerce students. In school year 1996-97, 11% (114 students) of the 1,032 freshmen failed and in school year 1997-98, 14% (157 students) of the 1,122 freshmen did not pass the subject. Most of the shifters enrolled in the Department of Management and Related Disciplines and took up degree courses in Management, Economics, Entrepreneurship, Finance and Marketing.

The researcher saw the necessity to determine whether the admission criteria set by the college such as high school grade average, NSAT rating and English and Math placement examination scores can really predict academic performance of students in business courses and if these admission criteria can predict academic performance in college, how good are their predictive ability? Can certain variables be excluded from such admission equation to provide more accurate and efficient selection criteria for the College of Commerce students?

Objectives

This study determined the high school grade average (HSGA), NSAT rating, and English (EPES) and Math (MPES) placement examination scores as predictors of academic performance among freshman students in Introductory Accounting at Central Philippine University for the school year 1997-1998. Specifically, the study sought answers to the following questions:

1. What is the personal profile of the freshman students enrolled in Introductory Accounting in terms of their sex, type of high school graduated from, high school location, and major field of study?
2. What is their high school grade average, NSAT rating, English and Math placement examinations scores?
3. What is their level of academic performance in Introductory Accounting?
4. Are there significant differences in the students' high school grade average, NSAT rating, and English and Math placement examination scores when they are grouped according to sex, type of school graduated from, high school location, and major field of study?
5. Are there significant differences in the students' performance in Introductory Accounting when they are grouped according to sex, type of high school graduated from, high school location, major field of study, high school grade average, NSAT rating, and English and Math placement examination scores?

6. Are there significant relationships between sex, type of school graduated from, high school location, major field of study, high school grade average, NSAT rating, English and Math placement examination scores, and academic performance among freshmen students in Introductory Accounting?
7. Which of these admission criteria could significantly predict academic performance in Introductory Accounting?

Theoretical Framework

Maier's behavioral theory as cited by Pilar and Rodriguez (1981) explains the causal relationship between the individual and situation, which produces the ensuring behavior and accomplishments. According to this theory, accomplishment is a product of the behavior, which precedes it and that the nature of the accomplishment can play a part in subsequent behavior, provided the person learns. This learning may be profitable or detrimental. Maier argued that since accomplishment is influenced by chance factors, in the sense that the same behavior can have a number of different accomplishments, it is difficult to control accomplishments. For this reason, he suggested that one should clearly distinguish behavior from accomplishment and seek to improve and predict accomplishment by studying the factors influencing the behavior.

This psychological approach to behavior, according to Pilar and Rodriguez (1981) is characterized by acceptance of causation in behavior as a fact and that it demands an analysis of the events that precede behavior, which in turn, leads to analysis of the situation and to the study of the individual and his past experiences. Whether the behavior is absenteeism or delinquency or whether the accomplishment is good or poor, they said that it must be understood in terms of antecedent events if it is to be corrected.

Rogers (1978) supported Maier's environmental theory which states that a human being is unified with individuality and its continued exchange with the environment, consisting of the totality of patterns external to the individual. She said that environment plays a major role in the development of an individual and that what happened in the past life will always affect the future.

Conceptual Framework

The variables of this study are presented in three groups namely, the dependent variable, the independent variables, and the antecedent variables. The

dependent variable is the focus of the study in which behavior or status is influenced by the independent variables.

The assumed flow of relationship among variables is illustrated in Figure 1.

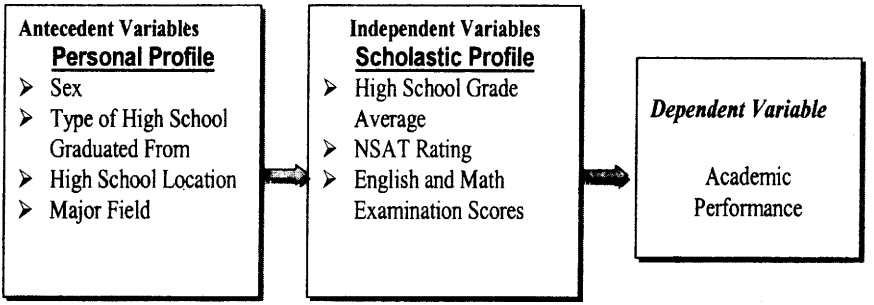

Figure 1. Assumed Flow of Relationship Among Variables

Research Hypotheses

In view of the preceding problems, the following hypotheses are advanced:

1. Male students tend to perform better than female students in high school, NSAT, and in the Math placement examination while female students tend to perform better than male students in the English placement examination.
2. Students who graduated from private high schools tend to perform better in high school, NSAT, and in the English and Math placement examinations compared with those who graduated from public high schools.
3. Students who graduated from secondary schools within the city proper tend to perform better in high school, NSAT, and English and Math placement examinations than those who graduated in secondary schools outside the city proper.
4. Accountancy students performed better when they were in high school, and when they took their NSAT, English and Math placement examinations than the rest of their peers who are not in the Accountancy program.
5. Female students academically perform better than male students in Introductory Accounting.
6. Students who graduated from private high schools tend to perform better in Introductory Accounting than those who graduated from public high school.
7. Students coming from secondary schools located within the city proper perform better in Introductory Accounting than those coming from secondary schools located outside the city proper.

8. Accountancy students perform academically better in Introductory Accounting than Computer Science or Management students.
9. The higher the high school grade average, NSAT rating, and English and Math placement examination scores the higher the academic performance in Introductory Accounting.
10. Admission criteria such as high school grade average (HSGA), National Secondary Achievement Test (NSAT) rating, and English and Math placement examination scores are significant predictors of academic performance in Introductory Accounting among freshman students.

RESEARCH METHODOLOGY

The descriptive-relational research design with the aid of documentary analysis technique in data gathering was used. From a total of 1,122 freshmen students enrolled in the College of Commerce Introductory Accounting course at Central Philippine University for school year 1997-98, only 286 were randomly selected as sample respondents. A stratified random sampling was employed in the selection of the sample respondents of this study.

Descriptive statistics were generated to describe the personal and scholastic profiles of the respondents. Means and standard deviations were used to measure central tendencies and dispersions of data. To determine differences between means, z-test and the analysis of variance (ANOVA) were computed. Intercorrelation matrix were calculated using Pearson product-moment correlation coefficients to determine extent of relationship between HSGA, NSAT Rating, EPES, MPES, and final grade in IA variables and were interpreted using Garrett's (1961) interpretation.

Regressions analysis was used to explain variance in students' final grade in IA. Since multicollinearity exists among variables, a step-wise discriminant analysis was performed to build a predictive model of independent variables that could best predict academic performance in Introductory Accounting as reflected in their final grade. An alpha level of 0.05 was established as priori.

DATA ANALYSIS AND INTERPRETATION

HSGA, NSAT Rating, EPES, and MPES of the Respondents Grouped According to Sex.

Data in Table 1 show that the mean HSGA of female freshman students is higher by 1.22 than that of male freshmen students. The difference in means was significant at 5% level. This indicates that the HSGA of freshman students vary significantly when grouped according to sex and that female students performed better in high school compared with male students.

The data also reveal that female students obtained higher (84.98) mean NSAT rating than the rating of the male group (84.61). The difference in group means, however, is not statistically significant (Z=0.660) suggesting that sex has no bearing in the NSAT rating of freshman students enrolled in IA.

The data further reveal that the mean EPES of male freshmen students was 52.75 while that of the female students was 56.67. The mean difference of the two groups is statistically significant at the 5% level which indicates that female students' EPES is significantly higher than that of male students.

As indicated by the mean MPES of male students which is significantly (p=.05) higher (14.83) compared to the mean MPES of female students (13.13), the results show that male students performed better in MPE than female students. A closer look at the data reveals that among the four independent variables used in this study, only the difference in group means of male and female students in NSAT rating is not significant at the 5% level. This indicates that generally, these students differ in terms of sex in HSGA, EPES, and MPES but not in NSAT rating.

Table 1. Difference in the HSGA, NSAT Rating, EPES, and MPES of the Respondents by Sex.

Indicators	Respondents' Sex						Z-value	Sig. level
	Male			Female				
	N	Mean	SD	N	Mean	SD		
HSGA	71	84.66	4.31	215	85.88	3.31	2.47	0.014*
NSAT Rating	71	84.61	4.26	215	84.98	3.88	0.66	0.510
EPES	71	52.75	15.29	215	56.67	13.79	2.02	0.044*
MPES	71	14.83	7.53	215	13.13	4.55	2.29	0.023*

*Statistically significant at the 5% level of probability

HSGA, NSAT Rating, EPES and MPES of the Respondents Grouped According to Type of High School Where They Graduated.

As shown in Table 2, the mean HSGA of students from public high schools is 86.14 while the mean of those from private high schools is 84.99. The difference in means is statistically significant at the 5% level. The data reveal that in general, graduates of public high schools performed better in high school than those graduates from private high schools. The general assumption that students coming from the public high schools perform second to those from private high schools is not true with these students.

The data further reveal that the difference in group means of NSAT rating between graduates of public and private high schools is not statistically significant. It indicates that the type of high school where the students graduated has no bearing in their NSAT rating.

Comparison of the mean EPES of the public and private schools shows that students from private high schools perform better in EPE than their peers from public schools. The result suggests that the type of high school where the students graduated has a bearing in their EPES. Furthermore, the data show that in terms of MPES, the difference in means between public and private high school graduates enrolled in IA is not statistically significant at the 5% level. The result indicates that there is no significant difference in the students' MPES when grouped according to the type of high school where they graduated.

Table 2. Difference in the HSGA, NSAT Rating, EPES and MPES of the Respondents by Type of High School Where They Graduated.

Indicators	Type of High School						Z-value	Sig. level
	Public			Private				
	N	Mean	SD	N	Mean	SD		
HSGA	145	86.14	3.19	141	84.99	3.93	2.71	0.007*
NSAT Rating	145	84.58	4.02	141	85.20	3.91	1.13	0.189
EPES	145	53.97	13.56	141	57.48	14.77	2.09	0.037*
MPES	145	13.45	5.64	141	13.66	5.32	0.33	0.745

*Statistically significant at the 5% level of probability

HSGA, NSAT Rating, EPES, and MPES of the Respondents Grouped According to High School Location.

When students were compared as to the location of the high school where they graduated, the mean HSGA of those who graduated from secondary schools located within the city proper is significantly lower (84.18) compared to the mean HSGA of those from secondary schools located outside the city proper. The findings suggest that graduates from secondary schools within the city proper tend to perform better in high school than those who graduated from secondary schools outside the city proper.

The findings also show that NSAT rating of students who graduated from secondary schools located within the city proper is comparatively lower (84.73) than that of the graduates from secondary schools outside the city proper (84.96). The data suggest that NSAT ratings of the students do not vary significantly by high school location. This is also true with their EPES and MPES. All these data are shown in Table 3.

Table 3. Difference in the HSGA, NSAT Rating, EPES, and MPES of the Respondents by High School Location.

Indicators	High School Location						Z-value	Sig. level
	Within City Proper			Outside City Proper				
	N	Mean	SD	N	Mean	SD		
HSGA	74	84.18	3.84	212	86.06	3.41	3.74	0.000*
NSAT Rating	74	84.73	4.15	212	84.96	3.92	0.41	0.683
EPES	74	57.72	15.30	212	54.99	13.84	1.42	0.157
MPES	74	14.50	6.24	212	13.22	5.16	1.73	0.084

*Statistically significant at the 5% level of probability

HSGA, NSAT Rating, EPES, and MPES of the Respondents Grouped According to Major Field of Study.

Data in Table 4 reveal that the Accountancy students obtained higher mean HSGA (87.70) compared to Computer Sciences students (85.91) and Management and Related Disciplines students (83.16). Statistical results show that differences in group means vary significantly at the 5% level indicating that the mean HSGA of Accountancy students highly differ from that of the Computer science students or from that of the Management students.

Comparison of a significance ($p<0.05$) of the performance in NSAT of Accountancy, Computer Science and Management students show that there is a significant difference in their group means as shown in computed F-ratio of 63.79. It is also evident that there is a very high significant difference in means scores of students in EPES as well as in MPES.

Table 4. Difference in the HSGA, NSAT Rating, EPES and MPES of the Respondents by Major Field of Study taken as a whole.

Indicators	Major Field of Study									F-Ratio	Sig.
	Accountancy			Computer Science			Mgt and Related Disciplines				
	N	Mean	SD	N	Mean	SD	N	Mean	SD		
HSGA	114	87.70	2.80	63	85.91	2.92	109	83.16	3.27	63.79	0.000*
NSAT Rating	114	86.91	3.49	63	85.06	3.88	109	82.68	3.31	40.55	0.000*
EPES	114	59.77	14.19	63	56.27	13.84	109	51.10	13.29	11.11	0.000*
MPES	114	16.40	6.18	63	12.84	4.37	109	10.98	5.48	34.56	0.000*

*Statistically significant at the 5% level of probability

Data were analyzed further to test whether or not Accountancy students performed better when they were still in high school, and in their NSAT, English, and Math placement examinations as compared to other groups. Results show that indeed Accountancy students performed better in high school, in NSAT, and in Math placement examination compared to the Computer Science students or the Management students as indicated by the z-test values, which were all significant at the 5% level. Moreover, very high significant differences between EPES of Accountancy and Management students as well as EPES of Computer Science and Management students were found (Table 5). However, there is no significant difference between EPES of Accountancy and Computer Science students.

Table 5. Difference in the HSGA, NSAT Rating, EPES, and MPES of the Respondents by Major Field of Study when Taken Two Groups at a Time.

Indicators	Accountancy vs. Computer Science		Computer Science vs. Mgt and Related Disciplines		Mgt and Related Disciplines vs. Accountancy	
	Z-value	Sig level	Z-value	Sig level	Z-value	Sig level
HSGA	4.00	0.000*	5.70	0.000*	11.11	0.000*
NSAT Rating	3.147	0.002*	4.09	0.000*	9.30	0.000*
EPES	1.60	0.113	2.40	0.018*	4.71	0.000*
MPES	4.05	0.000*	2.87	0.005*	7.98	0.000*

*Statistically significant at the 5% level of probability

Academic Performance in IA of the Respondents Grouped According to Sex, Type of High School Graduated, School Location and Major Field of Study.

The academic performance of the freshmen students in IA did not significantly vary according to sex. This finding did not support the hypothesis that female students perform better academically than male students in IA. However, it supports the findings made by Pison (1998) and Java (1999) that college performance of the graduates did not vary significantly according to sex while it negates the findings made by Owings et al (1995) on college-bound students in the U.S. that female students achieve higher GPA than males.

These contradicting results of the cited studies and of this study concretized the statement made by Java (1999) that sex as a variable may or may not affect performance of the subjects studied. She found out that sex may affect students' academic performance in some years, while in other years, it did not.

Slight difference of academic performance in IA between public and private high school graduates was observed but not significant at the 5% level. This indicates that the type of high school attended by the respondents has no bearing in their academic performance in Introductory Accounting. The same result was found when students were grouped according to high school location. However, their academic performance in Introductory Accounting varies when grouped according to major fields of study.

Table 6. Differences in the Academic Performance in Introductory Accounting of the Respondents by Sex, Type of High School Graduated, School Location, and Major Field of Study.

Indicators	N	Mean	SD	Z-value/ F-ratio	Sig. level
Sex					
Male	71	2.75	0.9491		
Female	215	2.74	0.8833	Z=0.063	0.950
Type of High School Graduated From					
Public	145	2.70	0.8086		
Private	141	2.79	0.9832	Z=0.834	0.404
School Location					
Within City Proper	74	2.75	0.9727		
Outside City Proper	212	2.74	0.8734	Z=0.069	0.945
Major Field of Study					
Accountancy	114	2.32	1.1246		
Computer Science	63	1.63	1.1034		
Management &Related Disciplines	109	1.41	0.9602	F=15.390	0.000*
Entire Group	286	1.82	.0672		

* Statistically significant at the 5% level of probability

Academic Performance of Respondents Classified According To Their HSGA, NSAT Rating, EPES, and MPES.

As shown in Table 7, the academic performance of the students in IA significantly varies according to their HSGA. Those who obtained high high school grade average (91 and above) also obtained high mean grade (3.36) in IA while those who obtained low high school grade average (75-84) were the ones who obtained low mean grade (1.26) in IA. Among the respondents, those who obtained the highest NSAT rating (90-94) were also those who obtained the highest mean grade in IA (3.36), while those who obtained the lowest NSAT rating (75-79) also obtained the lowest mean grade in IA (0.96). Results of the F-test revealed that the variation in the mean scores was significant at the 5% level of probability.

The trend is likewise the same when the respondents' mean grades in IA were analyzed according to their EPES. The results show that generally, the higher the EPES, the higher the mean grade in IA. Again, the variations in mean scores were found to be highly significant at the 5% level (F-ratio = 14.507). This result also supports the hypothesis that those students who obtained high EPES were more likely to perform better in IA than those who obtained low EPES.

The data further reveal that those who obtained high scores in the Math placement examination were also those who obtained high mean grade in IA, while those who obtained low score in the Math placement examination were also those who obtained low mean grade in IA. The F-ratio of 24.101 for the test in difference between means was found to be significant at the 5% level.

Table 7. Differences in the Academic Performance in Introductory Accounting of the Respondents by HSGA, NSAT Rating, English and Math Placement Examination Scores.

Indicators	N	Mean	SD	F-ratio	Sig. level
HSGA					
91 and above (high)	22	3.36	0.8477		
85-90 (average)	154	2.00	1.0625		
75-84 (low)	110	1.26	0.9028	46.864	0.000*
NSAT Rating					
90-94	36	3.17	1.0419		
85-89	103	2.02	1.0179		
80-84	119	1.45	0.9247		
75-79	28	0.96	0.7927	38.378	0.000*
EPES					
90-100	2	3.25	.3535		
79-89	18	3.14	1.0683		
68-78	39	2.67	1.2425		
57-67	71	1.85	1.0399		
46-56	94	1.47	0.9527		
35-45	47	1.36	0.8704		
Below 35	15	1.40	0.7368	14.507	0.000*
MPES					
31 and above	4	3.62	1.1089		
21-30	25	3.26	0.8794		
10-20	196	1.72	1.0490		
Below 10	61	1.45	0.9691	24.101	0.000*

* Statistically significant at the 5% level of probability

Relationship between HSGA, NSAT Rating, EPES, MPES, and Academic Performance in IA.

Presented in Table 8 are the correlation coefficients between the admission criteria (HSGA, NSAT Rating, English and Math Placement Examination Scores) and Academic Performance in IA.

Based on the interpretation of Garrett (1961), substantial positive correlations were found between the predictor HSGA and IA final grade (r=.5618), NSAT Rating (r=.5605), English score (r=.4455) and Math score (r=.4732). In addition, substantial positive intercorrelations were found between HSGA and NSAT rating (r=.5979), NSAT Rating and English score (r=.5830), NSAT rating and Math score (r=.5522) and English and Math scores (r=.4439). Meanwhile, low positive association were identified between HSGA and English score (r=.3937) and HSGA and Math score (r=.4052).

The results imply that HSGA, NSAT rating, English and Math placement examination scores have bearing on how the students perform in Introductory Accounting subject. Those who obtain higher HSGA, NSAT rating, English and Math examination scores will also perform better in Introductory Accounting subject. It firmly supports the hypothesis that the higher the HSGA, NSAT rating and English and Math placement examination scores, the better the academic performance in Introductory Accounting.

Table 8. Intercorrelation Matrix of Independent and Dependent Variables in the Study.

Variable	Y	(X_1)	(X_2)	(X_3)	(X_4)
IA Final Grade (Y)	r=1.000	r=0.5618* p=.0000	r- 0.5605* p=0.000	r=0 .4455* p=0.000	r=0.4732* p=0.000
HSGA (X_1)		r=1.000	r=0.5979* P=0.000	r=0.3937 p=0.000	r=0.4052 p=0.000
NSAT Rating (X_2)			r=1.000	r=0.5830* p=0.000	r=0.5522* p=0.000
EPES (X_3)				r=1.000	r=0.4439* p=0.000
MPES (X_4)					r=1.000

*Statistically significant at the 5% level of probability

Multiple Regression Analysis.

The intercorrelations matrix of predictor variables revealed the presence of multicollinearity, as indicated by a substantial correlation between independent variables and the significant probability value of 0.000, which is a potential violation of the assumptions in using multiple linear regressions. Using guidelines offered by Lewis-Beck (1980), each independent variable was regressed on the remaining independent variables as shown in table 8.

The adjusted R-value of model 4 (HSGA, NSAT, EPS, and MPS taken together) is higher (0.424) than the rest of the regression models used in this study. This means that model 4 closely reflect the goodness of fit of the model in the population. The R^2 value of 0.432 indicates that 43% of the variance in academic

performance of freshmen students in IA could be explained by a linear combination of HSGA, NSAT rating, EPS, and MPS. Furthermore, the significance of F (53.376) shows that the independent variables proved to be the factors that explain the variation in the academic performance of freshmen students in IA. These findings support the hypothesis that HSGA, NSAT rating, EPS, and MPS are good predictors of academic performance of freshmen students in IA especially when taken together.

Table 9. Step-wise Regression Model Summary of all the Independent Variables on Academic Performance in IA of Freshman Students.

Model	R	R^2	Adj. R^2	Standard Error of Estimates	Sum of Squares		F	Sig level
					Regression	Residual		
1. HSGA	0.562	0.316	0.313	0.942	116.235	252.098	130.943	0.000*
2. NSAT Rating	0.628	0.394	0.390	0.888	146.172	223.161	92.050	0.000*
3. English Score	0.649	0.422	0.415	0.869	155.275	213.058	68.507	0.000*
4. Math Score	0.657	0.432	0.424	0.863	159.030	.209.303	53.376	0.000*

*Statistically significant at the 5% level of probability

Although a linear combination of all the four independent variables used in this study could best predict the academic performance of freshman students in IA, there is still a need to determine which of these four variables can strongly predict students' academic performance in IA; this was done by computing a regression coefficient of each of the admission criteria. Results are shown in Table 10.

The beta coefficients show that for every unit increase in HSGA, NSAT rating, EPES and MPES, there is a corresponding increase in the academic performance of freshman students in IA by 0.323, 0.195, 0.126 and 0.178, respectively These findings indicate that among these four variables, HSGA is the strongest predictor of the academic performance of freshman students in IA while EPES accounted the least increase in the students' academic performance in IA.

The results further show that each of these independent variables is linearly related to the dependent variable as shown by their significant ($p<0.05$) computed t-values.

Table 10. Regression Coefficient of all the Independent Variables on Academic Performance in IA of Freshman Students.

Variable	ß	t	Significance level
HSGA	0.323	5.713	0.000*
NSAT Rating	0.195	2.909	0.004*
EPES	0.126	2.245	0.026*
MPES	0.178	3.237	0.001*

*Statistically significant at the 5% level of probability

CONCLUSIONS

Based on the findings of this study, the following conclusions are drawn:

The majority of freshman students obtained average grades in secondary school and in their basic accounting subject. The majority obtained just above the passing score in English and Math placement examinations. These findings led the researcher to question whether or not the education system succeeded in maximizing the full intellectual potential of these students at this level.

HSGA of freshman students vary significantly when they were grouped according to sex, type of high school where they graduated, high school location, and major field of study.

Female students majoring in Accountancy program who graduated from public high school located outside the city proper, exhibit the tendency to perform better in high school than their male peers.

Students' NSAT rating do not differ significantly when they were grouped according to sex, type of high school where they graduated, and high school location but vary significantly when grouped according to their major field of study. Freshmen students majoring in Accountancy tended to perform better in NSAT than the rest of their peers.

Freshman students' EPES vary significantly except when grouped according to high school location. Again, female students majoring in Accountancy and who graduated from private high school tended to perform better in English Placement Examination as compared to their male counterpart.

The MPES of students vary significantly except when grouped by type of high school. Male students majoring in Accountancy program and who graduated from high school outside the city proper performed better in the Math Placement examination as compared to their female counterparts.

Freshman students' academic performance in Introductory Accounting course do not significantly vary by sex, type of high school where they graduated and high school location but significantly vary by major field of study. Students majoring in Accountancy program performed better in this course as compared to those who chose to major in other business courses. This implies that students who are majoring in Accountancy course were "academically superior" even in the tertiary level compared to the rest of their peers. Or perhaps Accountancy students are more academically focused and that they are more motivated by stricter retention requirements, which they seem to believe, preparing them to pass the national

board examination and eventually land a higher paying job at the earliest possible time. On the other hand, students majoring in other business courses seem not to mind receiving just passing marks for they do not have national board examination to pass and seem to contend themselves to land even low-paying jobs.

A linear combination of all the four independent variables was found to be the best predictor of the academic performance of freshman students in Introductory Accounting course. Among the four independent variables however, HSGA was found to be the strongest and EPES was found to be the weakest predictor.

RECOMMENDATIONS

On the basis of the findings and conclusions, the following are recommended:

1. If the College of Commerce aims for higher academic excellence, it should consider raising the cut-off of the admission criteria such as HSGA, NSAT rating, EPES, and MPES for admission of students to college not only in its Accountancy program but in other business courses as well. By doing so, the college should consider additional variables to its admission equation to determine the best-qualified students in college and at the same time creating a synergistic combination of the contributions to learning from classroom teachers, university administrators and staff and from the students as well.

2. Secondary school teachers should give the students more intellectual tools to analyze verbally and numerically to improve students' performance in the Basic English and Math subjects.

3. The college can use the admission criteria to help direct resources, such as after-school tutoring or summer school, for those who lag behind.

4. Parents and teachers should be aware that students' scholastic achievements in the secondary level and the college admission tests are good predictors of students' college performance. This awareness would help parents know when children are capable of tackling college work and which ones are not yet ready.

5. The findings of the current study and those of prior researches raise concern on the use of university wide admission criteria as adequate predictors for the success of students enrolled in the College of Commerce. In this context, it is recommended that additional research be made to establish other valid and reliable predictors of academic performance in college and its predictive strength while establishing trends between variables as well as other variables regarding students' performance in college.

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