# ADMISSION REQUIREMENTS AS PREDICTORS OF ACADEMIC PERFORMANCE OF CENTRAL PHILIPPINE UNIVERSITY DEVELOPMENT HIGH SCHOOL (CPUDHS) FRESHMEN

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## ABSTRACT

*The purpose of this study was to determine the predictive ability of admission requirements on academic performance of the CPUDHS freshmen in 1999-2001. Admission requirements include: Grade VI Final Grade in English, Mathematics, Science and General Average, SCAT– English and Mathematics, and Reading Comprehension. Results showed that Grade VI General Average and Reading Comprehension are the best predictors of First Year Weighted Average. Grade VI General Average and SCAT- Mathematics are the best predictors of First Year Final Grade in Mathematics. Non-significant predictors of First Year Final Grade in English were Grade VI Final Grade in Mathematics and Science, while SCAT-English and Grade VI Final Grade in English and Science did not significantly predict First Year Final Grade in Science.*

## INTRODUCTION

*Background and Rationale*

With the passage of Republic Act No. 6655 in 1988 mandating a free secondary education, our public as well as private schools will be hard put to cope with the constant growth rate. Selection for admission and ranking will be more difficult because the increase in the sheer number of applicants is paralleled by growth in the number of highly qualified candidates. Thus, measures used as bases of admission and ranking should be reasonably accurate in predicting students' future academic performance.

Admission test scores from the School and College Ability Tests Form B-Verbal (SCAT- English) and Quantitative (SCAT- Mathematics), Reading Comprehension, and Essay are the sole bases of screening, selecting, and ranking of incoming freshmen students in CPUDHS. As to whether or not these measures of admission are substantial predictors of freshmen academic performance, no recent study has yet been conducted. To give high credibility to the admission tests as well as to other admission requirements there should be continuing research about their usefulness in the prediction of academic performance.

*Objectives of the Study*

This study was conducted to determine the predictive ability of admission requirements on academic performance of Central Philippine University Development High School freshmen in 1999-2001.

Specifically the study determined:

1. the background characteristics of students in terms of sex, type of elementary school graduated from, and school location;
2. whether their performance in the admission requirements which include Grade VI General Average, Grade VI Final Grade in English, Grade VI Final Grade in Mathematics, and Grade VI Final Grade in Science, School and College Ability Tests Form B- Verbal (SCAT- English) and Quantitative (SCAT- Mathematics), and Reading Comprehension vary when they are grouped according to sex, type of elementary school graduated from, and school location;
3. whether there is a significant relationship between each of the indicators of admission requirements and academic performance; and,
4. which of the admission requirements could best predict academic performance.

*Theoretical and Conceptual Framework*

An approach to describe the ways the social perceiver uses information to generate causal explanations for some action, event, or outcome is through Attribution theory. Attribution theory focuses on the way the individual makes causal attribution for achievement. Causal analysis and understanding serve the basic functions of predicting future events and trying to control them (Zimbardo, 1992). Two general questions that Heider (1952 cited in Zimbardo, 1992) believed are part of most attributional analysis are whether the cause of the behavior is found in the person (internal causality) or the situation (external causality), and who is responsible for the outcomes. Applying Heider's attributional analysis, a student's admission test scores, Grade VI General Average and Grade VI Final Grade in core subjects are assumed to be affected by his personal self (internal causality) while type of elementary school graduated from and school location may also be affected by many outside factors (external causality). In this study, the academic performance which is the dependent variable, is the assumed caused behavior or the outcome and the admission requirements as well as sex, type of school graduated from, and school location which are the independent and antecedent variables respectively, are the assumed causal determinants. The interplay of the three key variables in the study is shown in Figure 1.

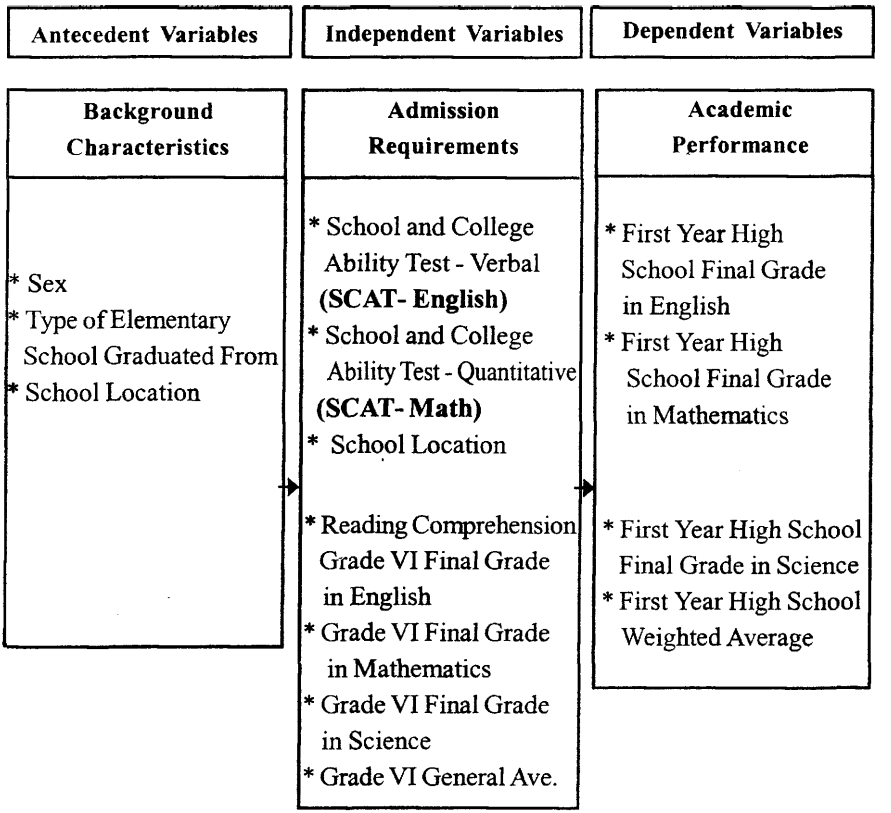


**Figure 1. Schematic Presentation of Variables**

*Hypotheses of the Study*

1. Students differ in their Grade VI General Average; Grade VI Final Grade in English; Grade VI Final Grade in Mathematics; Grade VI Final Grade in Science; SCAT-English; SCAT- Mathematics and Reading Comprehension when they are grouped according to sex, type of elementary school graduated from and school location.
2. Each of the indicators of admission requirements is significantly related to academic performance.
3. All the admission requirements in the CPUDHS could best predict academic performance.

## METHODOLOGY

This correlational study utilized the stratified proportional sampling (Vockell, 1983) to randomly select 280 high school freshmen who enrolled at the CPUDHS in 1999-2001. The Statistical Package for the Social Sciences (SPSS) for Windows was used for the statistical analysis of this study. Analysis was done in three levels: 1. the descriptive analysis; 2.the correlational analysis; and 3. the regression analysis. Percentage distribution and frequencies were used to describe the background characteristics in the first level of analysis. The means and standard deviations of the scores and ratings in the admission requirements and the first year high school grades were computed. The t-test, F-test, and Scheffe test were used to describe the difference between means of the different admission requirement variables according to the background characteristics.

Correlational analysis using the zero-order and partial correlation was used in the second level of analysis. Pearson's Product Moment Coefficient was used to determine the coefficient of correlation.

The third level of analysis made use of the step-wise regression analysis to determine the independent variable(s) that could best predict academic performance.

## MAJOR FINDINGS

There were slightly more females (53.9 percent) than males (46.1) among the high school freshmen enrolled in 1999-2001. About six out of ten students graduated from private elementary schools that are mostly located (71.1 percent) within the city proper (Table 1).

Table 1. Percentage distribution of CPUDHS Freshmen by Sex, Type of Elementary School Graduated From and School Location

| Background Characteristics | School Year | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1999 - 2000 | | 2000 - 2001 | | 2001 - 2002 | | Total | |
| | f | % | f | % | F | % | f | % |
| A. Sex | | | | | | | | |
| Male | 42 | 44.7 | 43 | 48.3 | 44 | 45.5 | 129 | 46.1 |
| Female | 52 | 55.3 | 46 | 51.7 | 53 | 54.6 | 151 | 53.9 |
| Total | 94 | 33.6 | 89 | 31.8 | 97 | 34.6 | 280 | 100.0 |
| B. Elem. Sch. Type | | | | | | | | |
| Public | 30 | 31.9 | 37 | 41.6 | 39 | 40.2 | 106 | 37.9 |
| Private | 64 | 68 | 52 | 58.4 | 58 | 59.8 | 174 | 62.1 |
| Total | 94 | 33.6 | 89 | 31.8 | 97 | 34.6 | 280 | 100.0 |
| C. School Location | | | | | | | | |
| Rural | 20 | 21.3 | 27 | 30.3 | 34 | 35.1 | 181 | 28.9 |
| Urban | 74 | 78 7 | 62 | 69.07 | 63 | 64.9 | 199 | 71.1 |
| Total | 94 | 33.6 | 89 | 31.8 | 97 | 34.6 | 280 | 100.0 |

As shown in Table 2, the CPUDHS female freshmen obtained significantly higher mean performance in their Grade VI Final Grade in English, Science, and General Average than the male freshmen.

Table 2. Mean Distribution of Students' Performance in Admission Requirements
According to Sex

| Admission Requirements | Male | | Female | | t | Sig. level |
|---|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | | |
| SCAT- English | 23.97 | 7.83 | 24.79 | 7.25 | 0.84 | 0.361 |
| SCAT - Math | 20.61 | 7.7 | 21.97 | 7.64 | 2.17 | 0.142 |
| Reading Comp. | 33.71 | 9.9 | 35.51 | 7.38 | 3.01 | 0.084 |
| English (Gr. VI) | 84.47 | 4.68 | 87.21 | 4.38 | 25.49 | 0.000* |
| Math (Gr. VI) | 83.90 | 4.679 | 85.04 | 5.10 | 3.72 | 0.055 |
| Science (Gr. VI) | 84.40 | 4.36 | 86.34 | 5.11 | 11.56 | 0.001* |
| Gen. Ave. (Gr. VI) | 84.90 | 3.60 | 87.04 | 3.77 | 23.36 | 0.000* |

*significant at the 0.05 level

Students from rural-public elementary schools got significantly higher means in their Grade VI General Average and Grade VI Final Grade in Mathematics and Science than those from urban-public and urban-private elementary schools. Students from urban-private elementary schools on the other hand, had significantly higher mean score in SCAT- English than those from urban-public and rural-public. This is supported by the F-ratio of 8.438 which is significant at 0.05 level. Moreover, they (urban-private students) also had a significantly higher mean score in SCAT-Mathematics than those from urban-public schools as implied by the F-ratio of 4.094 which is significant at 0.05 level (Table 3).

Table 3. Mean Distribution of Students' Performance in Admission Requirements as to
School Location and Type of Elementary School Graduated From

| School Type & Location | Mean Performance in Grade VI | | | | Mean in SCAT: | | Mean in Reading Comp. |
|---|---|---|---|---|---|---|---|
| | English | Math | Science | Gen. Ave. | Eng. | Math | |
| Urban - Public | 84.97 | 83.66 | 84.90 | 85.46 | 21.71 | 18.42 | 32.75 |
| Urban - Private | 85.61 | 83.64 | 84.53 | 85.39 | 26.33 | 22.56 | 35.75 |
| Rural - Public | 87.23 | 86.77 | 87.58 | 87.70 | 21.69 | 20.57 | 33.17 |
| Rural - Private | 87.11 | 86.41 | 87.24 | 87.53 | 24.63 | 21.85 | 35.63 |
| F-ratio | 2.930 | 7.630 | 7.080 | 6.976 | 8.438 | 4.094 | 2.294 |
| Significance level | 0.034* | 0.000* | 0.000* | 0.000* | 0.000* | 0.007* | 0.078 |

*significant at the 0.05 level

When none of the independent variables were partialled out or controlled (zero-order), all the correlations between each of the independent variables and each of the indicators of academic performance are significant and positive. However, when the other six independent variables were partialled out, the correlations show very slight relationship between variables (Tables 4-7). Although some of the partial correlations may be statistically significant, they may have limited meaning when used in this study since the correlations which were generated show very slight relationship between variables.

Table 4. Simple Correlations Between Independent Variables and First Year Final Grade in English

| Independent Variables | r | Sig. level | Partial r | Sig. level |
|---|---|---|---|---|
| English (Gr. VI) | 0.686 | 0.000** | 0.1887 | 0.002* |
| Math (Gr. VI) | 0.577 | 0.000** | -0.0498 | 0.412 |
| Science (Gr. VI) | 0.622 | 0.000** | 0.0074 | 0.903 |
| Gen. Ave. (Gr. VI) | 0.692 | 0.000** | 0.1243 | 0.040* |
| SCAT - English | 0.610 | 0.000** | 0.2650 | 0.000* |
| SCAT - Mathematics | 0.581 | 0.000** | 0.2187 | 0.000* |
| Reading Comprehension | 0.539 | 0.000** | 0.1494 | 0.013* |

** Correlation is significant at the 0.01 level (2-tailed)
* Partial correlation is significant at 0.05 level

Table 5. Simple Correlations Between Independent Variables and First Year Final Grade in Mathematics

| Independent Variables | r | Sig. | Partial r | Sig. |
|---|---|---|---|---|
| English (Gr. VI) | 0.578 | 0.000* | .1286 | 0.033* |
| Math (Gr. VI) | 0.556 | 0.000* | .0408 | 0.501 |
| Science ((Gr. VI) | 0.560 | 0.000* | .0926 | 0.126 |
| Gen. Ave. (GR.VI) | 0.598 | 0.000* | .0919 | 0.753 |
| SCAT - English | 0.421 | 0.000* | .0059 | .922 |
| SCAT - Mathematics | 0.569 | 0.000* | .3283 | .000* |
| Reading Comprehension | 0.368 | 0.000* | .0436 | .472 |

* Correlation is significant at the 0.01 level (2-tailed)
* Partial correlation is significant at 0.05 level

Table 6. Simple Correlations Between Independent Variables First Year and Final Grade in Science

| Independent Variables | r | Sig. | Partial r | Sig. |
|---|---|---|---|---|
| Grade VI | | | | |
| English | 0.611 | 0.000* | 0.0769 | .205 |
| Math | 0.500 | 0.000* | - 0.1341 | .026* |
| Science | 0.581 | 0.000* | 0.0488 | 0.421 |
| Gen. Ave. | 0.641 | 0.000* | 0.1801 | 0.003* |
| SCAT - English | 0.427 | 0.000* | 0.0421 | 0.488 |
| SCAT - Mathematics | 0.444 | 0.000* | 0.1492 | 0.013* |
| Reading Comprehension | 0.451 | 0.000* | 0.1489 | 0.014* |

* Correlation is significant at the 0.01 level (2-tailed)
* Partial correlation is significant at 0.05 level

Table 7. Simple Correlations Between Independent Variables and First Year Weighted Average

| Independent Variables | r (zero-order) | Sig. | Partial r (sixth-order) | Sig. |
|---|---|---|---|---|
| English (Gr. VI) | 0.429 | 0.000* | 0.0368 | 0.544 |
| Math (Math) | 0.369 | 0.000* | -0.0446 | 0.462 |
| Science (Gr. VI) | 0.419 | 0.000* | 0.0370 | 0.542 |
| Gen. Ave. (Gr. VI) | 0.458 | 0.000* | 0.0939 | 0.121 |
| SCAT - English | 0.304 | 0.000* | 0.0310 | 0. 609 |
| SCAT - Mathematics | 0.292 | 0.000* | 0.0420 | 0.489 |
| Reading Comp. | 0.341 | 0.000* | 0.1205 | 0.046* |

* Correlation is significant at the 0.01 level (2-tailed)
* Partial correlation is significant at 0.05 level

Results of the step-wise regression analysis show that Grade VI General Average, SCAT- English and Mathematics, Grade VI Final Grade in English and Reading comprehension are the independent variables that could best predict students' First Year Final Grade in English (Table 8). It was also found out that Grade VI General Average and SCAT- Mathematics could best predict students' First Year Final Grade in Mathematics (Table 9). Grade VI General Average, Reading Comprehension, SCAT- Mathematics, and Grade VI Final Grade in Mathematics are variables that could best predict students' First Year Final Grade in Science. However, Grade VI Final Grade in Mathematics is a significantly negative predictor (Table 10). Grade VI General Average, and Reading Comprehension, on the other hand, could best predict students' First Year Weighted Average (Table 11).

Table 8. Step-wise Regression Model Summary of Independent Variables on First Year Final Grade in English

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error |
|---|---|---|---|---|
| 1* | 0.692[a] | 0.478 | 0.476 | 3.656 |
| 2* | 0.778[b] | 0.605 | 0.602 | 3.186 |
| 3* | 0.789[c] | 0.623 | 0.619 | 3.118 |
| 4* | 0.799[d] | 0.638 | 0.633 | 3.063 |
| 5* | 0.804[e] | 0.646 | 0.640 | 3.033 |

a Predictors: (Constant), Grade VI Ave.
b Predictors: (Constant), Grade VI Ave., SCAT- Eng.
c Predictors: (Constant), Grade VI Ave., SCAT- Eng., SCAT- Math
d Predictors: (Constant), Grade VI Ave., SCAT- Eng., SCAT- Math, Grade VI Final Grade in Eng.
e Predictors: (Constant), Grade VI Ave., SCAT- Eng., SCAT- Math, Grade VI Final Grade in English, Reading Comp.
* significant at the 0.05 level

Table 9. Step-wise Regression Model Summary of Independent Variables on First Year Final Grade in Mathematics

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error |
|---|---|---|---|---|
| 1* | 0.598[a] | 0.358 | 0.356 | 4.023 |
| 2* | 0.682[b] | 0.466 | 0.462 | 3.676 |

a Predictors: (Constant), Grade VI General Average
b Predictors: (Constant), Grade VI General Average, SCAT – Mathematics
* significant at the 0.05 level

Table 10. Step-wise Regression Model Summary of Independent Variables on First Year Final Grade in Science

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error |
|---|---|---|---|---|
| 1* | 0.641[a] | 0.411 | 0.409 | 3.798 |
| 2* | 0.668[b] | 0.447 | 0.443 | 3.690 |
| 3* | 0.678[c] | 0.460 | 0.454 | 3.652 |
| 4* | 0.688[d] | 0.473 | 0.465 | 3.613 |

a. Predictors: (Constant), Grade VI General Average
b. Predictors: (Constant), Grade VI General Average, Reading Comprehension
c. Predictors: (Constant), Grade VI General Average, Reading Comprehension, SCAT- Mathematics
d. Predictors: (Constant), Grade VI General Average, Reading Comprehension, SCAT- Mathematics and Grade VI Final Grade in Mathematics (Beta coefficient is – 0.225)
* significant at the 0.05 level

Table 11. Step-wise Regression Model Summary of Independent Variables on First Year Final Weighted Average

| Model | R | $R^2$ | Adjusted $R^2$ | Std. Error |
|---|---|---|---|---|
| 1* | 0.458[a] | 0.210 | 0.207 | 5.882 |
| 2* | 0.483[b] | 0.234 | 0.222 | 5.803 |

a Predictors: (Constant), Grade VI General Average
b Predictors: (Constant), Grade VI General Average, and Reading Comprehension
* significant at the 0.05 level

## CONCLUSIONS AND RECOMMENDATIONS

On the basis of the findings of this study, the following conclusions were drawn:

1. The three background characteristics namely, sex, type of elementary school graduated from, and school location, may affect the CPUDHS freshmen performance in the admission test areas and Grade VI Grades.

2. Grade VI General Average and Reading Comprehension are the best predictors of First Year Weighted Average.

3. Grade VI General Average, SCAT- English and Mathematics, Grade VI Final Grade in English, and Reading Comprehension are the best predictors of students' First Year Final Grade in English.

4. Grade VI General Average and SCAT- Mathematics are the best predictors of students' First Year Final Grade in Mathematics.

5. Grade VI General Average, Reading Comprehension, SCAT- Mathematics and Grade VI Final Grade in Mathematics are the best predictors of students' First Year Final Grade in Science, however, Grade VI Final Grade in Mathematics is a significantly negative predictor.

Based on the major findings and conclusions, the following recommendations are presented:

1. Since students' ratings in Grade VI General Average and Reading Comprehension are the best predictors of First Year Weighted Average, it is important that the CPUDHS raises the cut-off for Grade VI General Average and Reading Comprehension for freshmen admission to the high school department.

2. Students' ratings in the admission test areas, Grade VI Final Grade in English, Grade VI General Average and Reading Comprehension could be used as predictors of their First Year Final Grade in English.

3. Freshman students' ratings in SCAT- Mathematics and Grade VI General Average could be used as predictors of their First Year Final Grade in Mathematics.

4. Freshman students' ratings in Grade VI General Average, Reading Comprehension, SCAT- Mathematics and Grade VI Final Grade in Mathematics could be used as predictors of their First Year Final Grade in Science. It should be noted however. that the higher the students' grades are in Grade VI Final Grade in Mathematics, the lower are their grades in First Year Final Grade in Science.

5. Other variables not considered in the study should be explored such as personality, values, study habits, and attitudes.

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