COGNITIVE AND NON-COGNITIVE DETERMINANTS OF STUDENTS' ENTRY BEHAVIOR IN A STATE UNIVERSITY IN SURIGAO DEL SUR

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ABSTRACT

Several factors are considered for the prediction of the entrance examination performance of incoming freshmen at Surigao del Sur State University. Success in the admission test enables the students to gain entry into the university. This study aims to explore possible influences of both cognitive factors like high school general point average (HSGPA) and non-cognitive factors such as age, honors received, sex, type of high school graduated, father's occupation, mother's occupation, number of siblings and religion on entrance examination performance of the students who wish to enroll at Surigao del Sur State University-Main Campus. The study reveals that the cognitive factor like GPA has significantly influenced performance in entrance examination. However, among the non-cognitive factors, only gender reveals as a significant indicator in the entrance examination performance. Furthermore, it is also found out that female performs better than male in the entrance examination.

Keywords: cognitive and non-cognitive determinants, entrance examination performance, entry behavior

1.0 Introduction

Truth speaks that colleges and universities prefer to admit only the students with potential to succeed. Just as qualifications that make effective employees differ across organizations and/or managers so with the underlying notion on factors affecting exceptional students performance in admission examination. Hence, it is significant and judicious to conduct a study exploring the influence of both cognitive and non-cognitive factors of the students in their performance in the entrance examination.

Studies assessing the various underlying factors in the performance of the students in an admission examination have been conducted in the past Smith, et al., (2009), Sackett, et al., (2009), Crede and Kuncel (2008) but each of these studies focused on different factors affecting students' result in the entrance examination. Smith, et al. (2009) indicated that the primary predictors of students' admission test result was a high school GPA; Sackett, et al., (2009) found strong relationships between academic performance and admission examination result even after controlling factors like socioeconomic status; Crede and Kuncel (2008) found that non-cognitive factors like study habit, skill and study motivation among other attitudinal constructs accounted for

incremental variance in admission test performance beyond standardized tests and previous grades.

It is evident from the cited studies that students' performance in the entrance examinations can be affected by various factors. However, a need to incorporate more than just cognitive factors in the admission process has led to a growing interest in non-cognitive predictors of admission test performance. Thus, the study investigates the possible influence of both cognitive and non-cognitive factors in the entrance examination performance.

Assessing the influence of these factors in the admission examination performance is desirable from the perspective of policy and implementation. The study can be utilized to strengthen further the streamline of program admission, at the same time, can be a basis for development and enhancement of student services to cater students' needs.

2.0 Conceptual Framework

Student's performance in a college or university admission examination can be influenced by both cognitive factors like high school general point average (HSGPA) and non-cognitive factors such as age, honors received, sex, type of high school graduated, father's occupation, mother's occupation, number of siblings and religion, since all these contribute to the students' readiness to be in college. High school general point average (HSGPA) is included in the study as this was fixed to be strongly related to the students' performance in an admission examination (Sackett, et al, 2009). Moreover, it has predictive validity in determining admission examination performance outcome (e.g. Bridgeman, McCamley-Jenkins & Ervin, 2000; Kuncel, Credé, & Thomas, 2007; Kuncel & Hezlett, 2007; Kuncel, Hezlett, & Ones, 2001, 2004). Although high school grades shed important light on the potential for a college applicant to become successful in taking entrance examination, a number of non-cognitive factors such as age, honor's received, sex, type of high school graduated, father's occupation, mother's occupation, number of siblings and religion, may also indicate students' success or failure in taking admission test for collegiate entry

Profile of the students in terms of:
1. Cognitive Factor
    1.1. High School GPA
2. Non-Cognitive Factors
    2.1. Age
    2.2. Honor's Received
    2.3. Sex
    2.4. Type of High School Graduated
    2.5. Father's Occupation
    2.6. Mother's Occupation
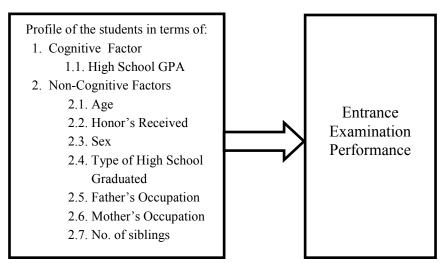   2.7. No. of siblings

Entrance Examination Performance

Figure 1. Schematic diagram of the study

(Pantages & Creedon, 1978; Robbins et al., 2004). The schematic diagram below presents the concepts underpinning the study.

Objectives

The main objective of the study was to assess the performance in the entrance examination of the incoming students of Surigao del Sur State University- Main Campus, Tandag City in the academic year 2011-2012. Specifically, this study aimed to:

1. Identify the profile of the students in terms of:
   1.1 Cognitive Factor
      A. High School GPA

   1.2 Non-Cognitive Factors
      A. Age
      B. Honors Received
      C. Sex
      D. Type of High School Graduated
      E. Father's Occupation
      F. Mother's Occupation
      G. Number of Siblings
      H. Religion.
2. Determine the performance of the students in the entrance examination.
3. Determine the significant influence of the students' cognitive and non-cognitive factors in their entrance examination performance.

3.0 Research Design and Methods

The main purpose of the study was to explore the influence of both students' cognitive and non-cognitive factors in their entrance examination performance through analyzing secondary data taken from the Students Admission Office

(SAO) of Surigao del Sur State University - Main Campus. To this end, the study employed descriptive-quantitative method using quota samples of 530 students taking the admission test during the academic year 2011-2012 as unit of analysis.

In particular, since the data were already available, frequency counting and simple percentage were used (1) to identify the profile of the students in terms of cognitive factors like the high school GPA and non-cognitive factors such as age, honors received, sex, type of high school graduated, father's occupation, mother's occupation, number of siblings and religion; (2) to determine the performance of the students in the entrance examination. (3) To determine the significant influence of the students' cognitive and non-cognitive factors in their entrance examination performance, General Linear Model (GLM) was used combining both regression analysis for interval data such as age, number of siblings and GPA; and analysis of variance for nominal data like honors received, sex, type of high school graduated, father's and mother's occupation and religion.

Furthermore, the data were statistically treated using Minitab Statistical Software to make the analysis faster and more efficient.

4.0 Results and Discussions

Cognitive and non-cognitive factors are important indicators of performance in colleges or universities entrance examination. They broadly affect success or failure in such examination, therefore a need to incorporate more than just cognitive factors in the admission has led to a growing interest in non-cognitive

Table 1. Distribution of Cognitive and Non-Cognitive Factors

Variable	N	Mean	Median	StDev	SE Mean
HS GPA	530	82.509	82.000	4.036	0.175
Age	530	17.608	17.000	2.370	0.103

Table 2. Respondents Percentage Profile

Honors Received	Count	Percentage	Father's Occupation	Count	Percentage
No Distinction	471	88.87	Government Employed	37	6.98
With Distinction	59	11.13	Privately Employed	79	14.91
			Self-Employed	367	69.25
			Skilled	47	8.87
Sex (N= 530)	**Count**	**Percentage**	**Mother's Occupation**	**Count**	**Percentage**
Male	313	59.06	Government Employed	47	8.87
Female	217	40.94	Privately Employed	23	4.34
			Self Employed	37	6.98
			House Keeper	423	79.81
Type of HS	**Count**	**Percentage**	**No. of Siblings**	**Count**	**Percentage**
Public	477	90.00		1	0.19
Private (Sectarian)	47	8.87	1	45	8.49
Non- Sectarian	6	1.13	2	86	16.23
			3	149	28.11
			4	131	24.72
			5	111	20.94
			6	7	1.32
Religion	**Count**	**Percentage**			
Roman Catholic	408	76.98			
Born Again Christian	92	17.36			
Cult	5	0.94			
Seventh Day Adventist	3	0.57			
Iglesia ni Kristo	21	3.96			
Saksi ni Jehova's Witness	1	0.19			

predictors of admission test performance. Thus, the study investigated the possible influence of cognitive and non-cognitive factors in entrance examination performance. Results of the cognitive and non-cognitive factors are shown in table 1.

Results in the table 2 shows that the students who wish to enroll in SDSSU are coming from a larger family size that lives below poverty line. This is evident because most of their fathers are the ones earning in the family from being self-employed engaged in farming, fishing and small scale entrepreneurs and their mothers lack the capacity to help their family financially. As a result, students tend to stop momentarily from studying college after graduating from public high school. They work to help the family as manifested in the number of the entrance examination takers whose age is beyond the appropriate entry age for college. SDSSU is also dominated by students who are Roman Catholic.

These scenarios further tell that majority of the students in SDSSU have led average intellectual ability (table 2)

because most of those who excel academically in high school prefer to study board courses having higher academic performance rating. However, SDSSU offers many programs, therefore, average to below average students end up taking non-board courses that dominated the entire population of SDSSU students.

Entrance Examination Performance and Cognitive and Non-cognitive Determinants Analysis

The performance of the students in the entrance examination could be attributed to their cognitive and non-cognitive factors, consequently regression analysis is utilized. Table 3 presents the summary of the regression analysis. Results of regression analysis demonstrate that the cognitive factor like GPA has significantly influenced performance in entrance examination with R-Sq of 25.2%. This implies that performance in taking admission tests primarily in the intelligence of the takers

Table 3. Regression Analysis of Entrance Examination Performance and Demographic Profiles

Predictor	Coef	SE Coef	T	P
Constant	15.183	6.728	2.26	0.024
Gender	1.0698	0.5223	2.05	0.041
Age	0.0348	0.1047	0.33	0.740
Types of HS	0.0250	0.7097	0.04	0.972
Honors Received	0.4322	0.8862	0.49	0.626
Fathers Occupations	0.1977	0.3689	0.54	0.592
Mother Occupation	-0.5848	0.2770	-2.11	0.350
No. of Siblings	-0.0048	0.1988	-0.02	0.981
Religion	-0.1576	0.2749	-0.57	0.567
High School GPA	0.79115	0.07248	10.91	0.000

S = 5.578   R-Sq = 25.2%   R-Sq(adj) = 23.9%

Table 4. ANOVA of the Entrance Examination Performance and Demographic Profiles

Source	DF	SS	MS	F	P
Regression	9	5424.30	602.70	19.37	0.000
Residual Error	518	16118.82	31.12		
Total	527	21543.12			

as manifested by their GPA. The result holds truth because SDSSU entrance examination intently assesses students' mental abilities using the OTIS-LENNON Scholastic Test Instrument.

Gender is shown to have significant influence in the entrance examination performance. Considering their economic status, males are assigned more laborious work by their parents than females allowing them to have less focus in their academic performance. On the other hand, age does not significantly affect their performance because takers of the entrance examination closely fall in similar age bracket. Similarly, the study found out the type of high school graduated has no direct bearing on their test performance. This means that the quality of instruction does not vary in the kind of school whether public, private or non-sectarian because these schools are monitored and regulated by the Department of Education in terms of policy implementation and quality of curricular programs offering.

In addition, the data shows that graduates who receive honors have no influence in the entrance examination performance. This is due to their limited number from the entire population who took the examination. This is likewise true with respect to parents' occupation because, takers have to consider their stock knowledge or mental abilities to pass in the entrance test.

In the same way, religion has no significant influence on the entrance examination performance of the university. This is because mental ability is an internal attribute of the students. Knowledge, skills and competencies tested are not based on the teachings or norms of religions. This is also true as to number of siblings because of individual

differences that include the cognitive aspect and personality.

5.0 Conclusions

The study concluded that there are more female freshmen students with high GPA admitted in the university than males. If this trend continues, there will come a time that the university will be dominated by female students with good academic performance in high school resulting into gender inequality in education. This is a clear violation of the Republic Act 9710 or otherwise known as an Act Providing for the Magna Carta for Women which recognizes equal human rights and fundamental freedom in education, economic, social, political, cultural and other fields without discrimination and distinction on account of sex, gender, age, religion, language, ethnicity, ideology and status.

Along this line, the government through efforts of Department of Education may ensure providing basic quality education that is premised on the enhanced K to12 Basic Education Curriculum pursuant to the mandates of its Republic Act and other related governing policies. To this end, the government may ensure the highest priority budget to education that will cater to upgrade teachers' qualifications and benefits, development and provision of instructional materials and physical plant and facilities of the school. With this, competent and productive students are produced.

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