Do Other Factors Associate To Graduate School Success

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CHAPTER I

Introduction

Every semester, graduate admissions personnel try to sort through applicants to graduate school to admit capable candidates. Admissions personnel attempt to determine which candidates will be successful in completing the program if given the opportunity. However, they must screen out potentially unsuccessful candidates by utilizing grade point averages (undergraduate GPA) and Graduate Record Examination (GRE).

Debates on the widespread use of GPA and GRE as identifiers of graduate success have become a topic of great interest (Sampson & Boyer, 2001; Reisig and DeJong, 2005; Bacon and Bean, 2007). Points that are deliberated have theoretical and methodological nature. For example, do the GRE and GPA relate individual success abilities (theoretical) and what intervening variables (gender, age, motivation, and emotion stability) may influence the scores (methodological)?

Purpose of the study

The central case focuses on whether is it a good practice to rule out potential candidates to graduate school on GPA and GRE scores without accessing measures of intervening variables that contribute to the scores. It can be argued that an individual's age, gender, motivation and emotional stability can participate in the outcome of ones academic performance. The purpose of this study is to evaluate these variables to identify if they influence or show a relationship to GPA and GRE scores.

Significance of the Study

The admission personnel to graduate schools may be rejecting intelligent candidates based on scores and not individual characteristics. It is important to consider an over-all perspective when accepting and rejecting candidates to graduate school because it is a decision that will affect an individual's life.

Limitations and Delimitations

The limitation of this study is the sample. The sample size greatly reduces the effectiveness of the findings. Results may not be representative of the total population. Another limitation is utilizing an online data base because the data presented does not inform about the population size, limits demographics about the survey (e.g. where was it given), and does not present information on how the data was collected.

CHAPTER II

Literature Review

Research literature on GPA and GRE scores as predictors of potential academic success is vast but varies. Researchers have analyzed data between GRE scores and academic performance in various areas of college programs. In addition, different techniques of statistical analysis have been employed. Nevertheless, a comprehensible interpretation on how GPA and GRE scores are influenced by intervening variables has not yet emerged. This is unlikely to happen until theoretical and methodological issues are concentrated on (Reisig and DeJong, 2005).

Sampson and Boyer (2001) presented a study on how accurate GRE scores and select demographic variables are in predicting minority student graduate success focused their attention on other factors other than GRE and GPA scores as criteria to be considered when admission personnel select minority students into Graduate Programs.

The sample consisted of minority students who earned a doctoral, specialist, or masters degree from Research I university during 1988-1997 who received a fellowship in Graduate School. Furthermore, data collection phase consisted of information that was made available in the Graduate School, for instance applications, undergraduate and graduate transcripts. The undergraduate transcripts revealed the degrees and GPA of each student respectively.

Data analysis utilized descriptive statistics, correlation, and multiple regression. Descriptive statistics indicated that the sample of the population (N = 160) is the majority in Social Sciences, 67 (42 %), masters degrees, 103 (68 %), majority female, and 90 %

African American. In addition, 64 % attended college as a minority student. The graduate students undergraduate GPA average is 3.11, first year GPA of 3.51, GRE verbal score 447, GRE qualitative 450, GRE analytical 470, and the average age is 27 years. The correlation utilized is bivariate in Pearson product-moment correlation which indicated the variables that significantly associate with first year GPA. The significant associations were then analyzed in a linear regression model. The multiple regression calculated the first year averages as the significant independent variable (GRE verbal, age, majors, undergraduate GPA, and institution). These variables accounted for 25 % of the variance in the first year average $F(5, 144) = 10.05$, $p < .0001$, Adjusted $R^2 = .25$. The independent variables were highly significant but reported only small part of the variance found.

The findings suggested that the GRE verbal scores, age, major, and undergraduate GPA are significantly associated with determining the first years average of minority students at Research I university. This result differs with other research (Reisig and DeJong, 2005) in the suggestion that rejecting students into graduate school on GRE and GPA scores alone could be a mistake in eliminating potential students without accounting various other variables.

CHAPTER III

Procedures

The study is quantitative in nature and the design is correlation. Correlation analysis will be used to depict the strength of a relationship but will not assess the causality of the variables.

Research Questions

- What are the demographic profiles (gender, age, and GPA) of potential graduate students?
- Is there a correlation between age and GRE scores?
- Is there a significant relationship between females and males on the GRE?
- Is there a correlation between GPA, student motivation, and emotion stability?

Population and sample

The population size is unknown. This is identified as a limitation with the use of an online data base with limited information. However, the sample size is 50 students with age ranges from 22 - 45 at college entry ranges average age 27, 32 female (Majority), and 18 males with over-all grade points from 3.20 – 3.94.

Data collection

Pre-collected survey data from an online data base located at <http://wps.ablongman.com/ab_george_windows_4/0,5808,394727-,00.html> by using the drop down menu to access the data set available labeled Graduate.SAV

Instruments

The use of on-line data base located at <http://wps.ablongman.com/ab_george_windows_4/0,5808,394727-,00.html> by using the drop down menu to access the data set available labeled Graduate.SAV

Data Analysis

Data will be analyzed by using descriptive statistics, bivariate, and split bivariate Pearson product-moment correlation. Descriptive statistics are used to identify the demographics in the study. Pearson product-moment correlation is used to show association not causality between the independent and dependent variables. In addition, it is used at a split level to determine an association between females and males among GRE scores.

Ethical Treatment of Human Subject

A protocol is expected to be prepared and submitted to the Institutional Review Board for the Protection of Human Subjects in Research using an exempt status protocol because there is no risk to the participants for harm of any kind. However, the usage of an on-line data base exempts this process entirely because the original study completed this step and this research had no contact with the participants.

CHAPTER IV

Presentation of Data

What are the demographic profiles (age, gender, and GPA) of potential graduate students? The demographics are age 22 to 45 years and average age 27.5, overall GPA ranges from 2.80 to 3.94, and gender the majority are female at 64% while males are representative 36 % of the sample.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AGE IN YEARS AT ENTRY	50	22	45	27.54	5.072
OVERALL COLLEGE GPA	50	2.80	3.94	3.5100	.26702
Valid N (listwise)	50				

1=FEMALE 2=MALE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FEMALE	32	64.0	64.0	64.0
	MALE	18	36.0	36.0	100.0
	Total	50	100.0	100.0	

Is there a correlation between age and GRE scores? The relationship between age GRE scores was investigated by using Pearson product-moment correlation coefficient. There was weak, negative correlation between age and GRE (Specialty and Verbal). Specialty [r = ˉ.23, n = 50, p>0.01], Verbal [r = ˉ.16, n =50, p> 0.01] but Quantative showed [r = .256, n = 50, p < 0.01].

Correlations

		AGE IN YEARS AT ENTRY	GRE SCORE ON SPECIALITY EXAM	GRE SCORE ON QUANTATIVE	GRE SCORE ON VERBAL
AGE IN YEARS AT ENTRY	Pearson Correlation	1	-.238	.256	-.161
	Sig. (2-tailed)		.095	.073	.264
	N	50	50	50	50
GRE SCORE ON SPECIALITY EXAM	Pearson Correlation	-.238	1	.275	.987(**)
	Sig. (2-tailed)	.095		.053	.000
	N	50	50	50	50
GRE SCORE ON QUANTATIVE	Pearson Correlation	.256	.275	1	.374(**)
	Sig. (2-tailed)	.073	.053		.008
	N	50	50	50	50
GRE SCORE ON VERBAL	Pearson Correlation	-.161	.987(**)	.374(**)	1
	Sig. (2-tailed)	.264	.000	.008	
	N	50	50	50	50

** Correlation is significant at the 0.01 level (2-tailed).

Is there a significant relationship between males and females on the GRE? The female scores on GRE (Specialty, Quantative, and Verbal applications) showed an association of Specialty versus Quantative r = .18, not significant, Specialty versus Verbal r = .99, significant at p < .01 level, and Verbal versus Quantative r = .28, not significant. The males Specialty versus Quantative r = .47, significant at p < .05 level, Specialty versus Verbal r = .99 significant at p < .01, and Verbal versus Quantative r = .574, significant at p < .05 level.

Correlations

1=FEMALE 2=MALE			GRE SCORE ON SPECIALITY EXAM	GRE SCORE ON QUANTATIVE	GRE SCORE ON VERBAL
FEMALE	GRE SCORE ON SPECIALITY EXAM	Pearson Correlation	1	.180	.987(**)
		Sig. (2-tailed)		.324	.000
		N	32	32	32
	GRE SCORE ON QUANTATIVE	Pearson Correlation	.180	1	.276
		Sig. (2-tailed)	.324		.126
		N	32	32	32
	GRE SCORE ON VERBAL	Pearson Correlation	.987(**)	.276	1
		Sig. (2-tailed)	.000	.126	
		N	32	32	32
MALE	GRE SCORE ON SPECIALITY EXAM	Pearson Correlation	1	.470(*)	.990(**)
		Sig. (2-tailed)		.049	.000
		N	18	18	18
	GRE SCORE ON QUANTATIVE	Pearson Correlation	.470(*)	1	.574(*)
		Sig. (2-tailed)	.049		.013
		N	18	18	18
	GRE SCORE ON VERBAL	Pearson Correlation	.990(**)	.574(*)	1
		Sig. (2-tailed)	.000	.013	
		N	18	18	18

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Is there a correlation between GPA, student motivation, and emotion stability? The GPA and motivation showed an association r = .16, not significant and GPA and emotional stability related r = -.09, not significant.

Correlations

		STUDENTS MOTIVATION	STUDENTS EMOTIONAL STABILITY	OVERALL COLLEGE GPA
STUDENTS MOTIVATION	Pearson Correlation	1	.031	.164
	Sig. (2-tailed)		.833	.256
	N	50	50	50
STUDENTS EMOTIONAL STABILITY	Pearson Correlation	.031	1	-.093
	Sig. (2-tailed)	.833		.521
	N	50	50	50
OVERALL COLLEGE GPA	Pearson Correlation	.164	-.093	1
	Sig. (2-tailed)	.256	.521	
	N	50	50	50

CHAPTER V

Summary and Conclusion

The graduate school admissions personnel try to eliminate potentially unsuccessful candidates and admit successful candidates. Should admissions personnel be challenged to look at other variables that may contribute to success while not relying solely on GPA and GRE scores? Examples of other factors are age, gender, motivation, and emotional stability. The focus of this study is to decide if it is a good practice to rule out potential candidates without viewing a complete depiction of factors involved in graduate success. This quantitative correlation research asks four questions that involve other factors in success: (1) what are the demographic profiles of potential graduate students, (2) is there a correlation between age and GRE scores, (3) is there a significant relationship between females and males on the GRE, and (4) is there a correlation between GPA, student motivation, emotion stability. The on-line data base data is analyzed by using descriptive statistics on the demographics, bivariate Pearson product-moment to illustrate association and split bivariate to compare the association between groups (female and male). Ethical treatment of human subjects is always a consideration but unnecessary in this particular pre-collected data. Limitations in this study are sample size is small and usage of online data pre-collected which limits knowledge on the entirety of the population (e.g. where was the study done and how people were chosen for sample).

Literature review illustrates that research is various on the topics of GRE and GPA while there is small amounts of other factors analyzed. There is a need to

investigate various variables to interpret whether or not a person may be viewed as a successful candidate for graduate school. In addition, there have been various methods in analyzing the data to determine successes. The debate of success is focused between methodological and theoretical implication within research. Unfortunately there is not enough data to support the argument of change in admission selection. However, this study is just a part of the debate in answering the questions of associations of other factors in success that will hopefully inspire more research on the subject matter.

The demographic profiles are majority female (64 %), males respectfully 36 %, overall GPA range from 2.80 to 3.94, and age ranges from 22 to 45 years with average age 27.5 in the sample (N=50) representative of the population. The relationship between age and GRE scores indicated that there was an inverse relationship. The association between groups (female and male) signifies that males score better on GRE exams than females. In addition, the relationship between the GPA and student motivation and emotional stability demonstrated no association in either situation. They are no significance between GPA and motivation or emotional stability. These findings of this research indicate that other factors play a pivotal role in graduate success and should be accounted for when counting or discounting whether an individual will be successful in graduate school.

The findings also suggest that there is a necessity to evaluate other factors when admitting or rejecting students to graduate school and not relying solely on GPA and GRE scores. The additional factors that may influence success need to be measured in

methods measurable. Future research should focus on how to make intervening variables measurable so that they can be used as criteria of choice for admissions personnel.

As a result of these findings one should question the meaning of success based on GRE and GPA scores. Can generalized tests really be associated with one's success? This research concurs with Sampson and Boyer (2001) that emphasis should be placed on performance not the scores on GPA or GRE.

In closing, the research presented above suggests that more research is needed to indicate further variables that may infer graduate success. Even though results were not very strong it indicates that there is an association among various factors that influence the success rating for potential candidates of graduate school. However, association does not imply causality on any level. Cautiousness on the admission personnel behalf in utilizing the popular criteria (GPA & GRE scores) especially when dealing with minorities.

References

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