The Prediction Validity of Secondary School Test on Grade Point Average at Princess Rahma College-Al Balqaa' Applied University

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Abstract

This study aims to investigate the prediction validity of secondary school test (SST) on grade point average (GPA).

The sample consisted of (299) male and female students from Princess Rahma College.

The information about students collected from students' files available at admission and registration departments, at the college for years 2010-2012.

The results showed the importance and the influence of (SST) on (GPA). The results showed a significant correlation between (SST) and (GPA) for the whole sample. But also, the results showed no significant correlation between (SST) and (GPA) for male students, special education department students and for science section students.

This study recommends the need for another test which support the SST to administer it before students admission to different specialists.

Keywords: secondary school test (SST), grade point average (GPA), prediction validity.

Introduction:

Academic achievement has been one of the most important issues that universities administration gave significant concern because of the need to know prior qualifications and abilities for students to succeed in higher education.

This has become an urgent need because of the increased requests to attend university recently, where the number of students who wish to enroll in universities outnumber available university seats. In addition, statistics indicate an increase in the number of Arab Universities, also points to the huge increasing number of students in higher education in the Arab countries through the last four decades (UNESCO Regional Bureau for Education in the Arab states, 1987). As a result, it became urgent for universities to accept only qualified students to guarantee their academic success.

In a previous study, Haddad (1988) mentioned that the most important condition of acceptance in Arab universities is the overall rate of high school test. In most Jordanian universities, the admission is built on students SST grade and their preference.

Qarni (1995) reported that the admission factors of students in several countries around the world such as in America, France, Britain, Sweden, India, China, Japan, Indonesia vary according to the objectives of the educational institutions and their available financial and human resources. Accordingly, many of those institutions created different admission criteria, such as reviewing overall students' record in high school, the high school test grades and various types of admission tests. These criteria were considered as better prediction to higher education achievement according to that study.

Many studies showed that students grades in secondary level give the best prediction about higher education academic achievement (Altal, 1972), (Khawaldeh and Foudeh, 1979), (Nasser, 1983), (Rihani, AlSheikh and Dawood, 1987), (Stricker et. al., 1965).

On the other hand, other studies reported that there is a weak relation between students grades in secondary level and their higher education academic achievement, especially when talking about achievement with respect to the specialization and field of study (Darwaza, 1978) and (Billeh et. al., 1974).

In this study, the hypothesis of the relation between SST grade and bachelor degree graduates GPA will be tested

in two specializations in one of the Jordanian universities.

Literature Review:

2.1. Use of the Grade Differential Statistic in Predicting College GPA.

The possibility of using the grade differential statistic in college admissions decisions is explored. The grade differential statistic is the mean difference between the freshman college grade point average (GPA) and the high school GPA (HSGPA) for freshman college entrants from a particular high school. Rather than being an index of high school academic quality, the index appears to be a measure of the grading practices of high schools. In some instances, it may be useful to consider this index in admissions decisions. Only high schools that admitted at least 16 students per year to the University of California at Berkeley in the fall of 1989 were included in this study. Data for 313 students for fall 1987, 346 students for fall 1988, and 335 students for fall 1989 were used. Results show that the grade differential statistic is consistent from year to year. Multiple regression equations show that the statistic, when used in conjunction with HSGPA, adds considerably to the coefficient of determination and the predictive power of the HSGPA. However, at the University of California at Berkeley, even if the grade differential statistic was reliable and valid for schools contributing 5 students, it could be used in only about 50 percent of the decisions. Nevertheless, there are situations in which it could be useful. Five tables present findings from the analysis(cesa, 1992).

2.2. The Relationship of Graduate Record Examination Aptitude Test Scores and Graduate School Performance of International Students at the United States Universities

Purpose: This paper will: (1) review the validity of the Graduate Record Examination for predicting international students' Graduate Grade Point Average (GGPA); and (2) inspect possible social, cultural and language bias or learning style differences in the prediction of international students' performance from Graduate Record Examination (GRE) test scores when used in admission / selection decisions at American universities. Results: Different studies demonstrated that: (1) International Students who were not homogeneous with respect to linguistic, cultural and educational background; (2) Subgroups with homogeneous country of origin and background variables; and (3) Subgroups classified according to English proficiency, as indicated by Test of English as a Foreign Language (TOEFL) scores; GRE-Verbal, Analytic, and Quantitative scores; and self-reported English language proficiency. Research indicated that for all subgroups of quantitatively-oriented departments, GRE-Quantitative scores and GRE-Analytical scores were more highly correlated with first year average grades (FYA) than were GRE-Verbal scores. Their correlation coefficients were .311, .275, and .097 for quantitative, analytical, and verbal cores, respectively Conclusions: Every year hundreds of students from foreign countries enroll in American graduate schools and this trend will probably continue in the future. The decision to admit foreign students into a graduate program affects their advanced education opportunity and future career. The admission of foreign students to graduate school is a very complicated issue. Unlike their American counterparts, foreign students often lack proficiency in the English language due to differences in their native language, learning style and their cultural, social and economic background. The appraisal of the foreign candidate's aptitude for graduate study by standardized admission tests also has pitfalls. Poor performance may be due to factors not directly related to aptitude for graduate study. Recommendations: In order for foreign students in the US universities to be appropriately classified and their academic characteristics properly assessed, the admission committees need to create or be provided an effective evaluation system. In order to do that, confounding problems related to the GRE and its validity and usability with foreign students must be examined(Basturk, 1999).

2.3. Predictions of Freshman Grade-Point Average from the Revised and Recentered SAT[R] I: Reasoning Test. College Board Research Report.

The impact of revisions in the content of the Scholastic Assessment Test (SAT) and changes in the score scale on the predictive validity of the SAT were examined. Predictions of freshman grade-point average (FGPA) for the entering class of 1994 (who had taken the old SAT) were compared with predictions for the class of 1995 (who had taken the new SAT I: Reasoning Test). The 1995 scores were evaluated both on the original SAT Program scale and on the recentered scale introduced that year. The changes in the test content and recentering of the score scale had virtually no impact on predictive validity. Other analyses indicated that the SAT I predicts FGPA about equally well across different ethnic groups. Correlations were slightly higher for higher levels of parental education and family income, and grades were more predictable for students with intended majors in math/science (mathematics, engineering, and biological or physical sciences) than for students with other intended majors. Correlations of the SAT I and the composite of SAT I scores and high school grade point average (HSGPA) with FGPA were generally higher for women than for men, although this pattern was reversed at college with very high mean SAT I scores. When a single prediction equation was used for all students, men

tended to get lower grades than predicted, and women got higher grades than predicted. African American and Hispanic/Latino men received lower grades than predicted, but women in these groups performed as predicted by the composite. Both men and women with intended majors in math/science got lower grades than would be predicted by an equation based on scores for all enrolled students (Bridgeman, et. al., 2000).

2.4. Evaluating the Predictive Validity of Graduate Management Admission Test Scores.

Admissions data and first-year grade point average (GPA) data from 11 graduate management schools were analyzed to evaluate the predictive validity of Graduate Management Admission Test[R] (GMAT[R]) scores and the extent to which predictive validity held across sex and race/ethnicity. The results indicated GMAT verbal and quantitative scores had substantial predictive validity, accounting for about 16% of the variance in graduate GPA beyond that predicted by undergraduate GPA. When these scores and undergraduate GPA were used together, they accounted for approximately 25% of the variation in first-year graduate GPA. Correcting correlations for restriction of range improved the predictive power. No statistical differences were found across examinee groups defined by race/ethnicity and sex, which suggests a lack of bias in these scores. The predictive utility of GMAT analytical writing scores was relatively low, accounting for only about 1% of the variation in graduate GPA, after accounting for undergraduate GPA and GMAT verbal and quantitative scores(Sireci & Talento-Miller,2006).

2.5. Predicting College Grades from ACT Assessment Scores and High School Course Work and Grade Information.

This study examined the accuracy of predictions of college grades in English, mathematics, social studies, and natural science courses, and the accuracy of predictions of overall freshman grade point average (GPA) based on American College Testing Program (ACT) assessment test scores and on high school course work and grade information from the ACT Assessment Course Grade Information Section (CGIS). Estimates of prediction accuracy (more than 160 institutions) were compared to those obtained using ACT scores and the four self-reported grades from the registration folder (TH index), ACT Assessment scores, and CGIS. Base-year prediction models were developed using student records from the 1986-87 and 1987-88 Prediction Research Services history files. These models were cross-validated using 1988-89 data from the same institutions. Separate models for juniors and seniors and the total group were developed. Results show that most ACT/CGIS models slightly increase prediction accuracy in some subject areas over that of the TH index. The model based on the four ACT scores and an average of 23 grades modestly improves prediction accuracy over that of the TH index for more than 50% of the institutions. Results support use of prediction models based on ACT scores and high school grades(Noble,1991).

Methods:

3.1 Participants:

The sample of this study consists of (299)graduate students were selected from princess Rahmah College. 145 male, 154 female.

Table 1 describes the characteristic of this sample.

3.2 Material:

3.2.1. Grade Point Average (GPA):

The Grade Point Average (GPA) is a measure of how well the students are doing in their academic studies. At TRU, the academic grading scale goes from "A+" to "F", with corresponding grade points ranging from the highest "4.33" to the lowest "0.00". A student's Grade Point Average, or GPA, is a mathematical calculation that indicates where an average of the grades falls on the scale.

The letter grade is assigned a grade point value according to the Grading Systems-ED 3-5 POLICY, as shown below. Each letter grade has a numeric grade point value assigned which is used to provide for a TRU-based term and cumulative term grade point average (GPA).

cumulative grade point average (CUM GPA) is a calculation of the average of all students' grades for all semesters and courses completed at TRU(http://www.tru.ca.).

3.2.2. Secondary School Test (SST):

SST had too many words with the same meaning. The baccalauréat, often known in France colloquially as le bac, is an academic qualification which French and international students take at the end of the secondary education. It was introduced by Napoleon I in 1808. It is the main diploma required to pursue university studies. There is also the European Baccalaureate which students take at the end of the European School education. It confirms a rounded secondary education, gives access to a wide range of university education and differs from British A-levels in that it cannot be obtained in single subjects. http://en.wikipedia.org/wiki/Baccalaur%C3%A9at#Overview

In this study, SST grade means the total grade of the first and second tests semester in the last level of secondary school.

3.3. Procedures:

The author collect the information about Secondary School Test grade and Grade Point Average for graduate students from students' files available at admission and registration departments, at the college for years 2010-2012. The information includes these variables: sex, SST grade, GPA, specialization in the college (social service and special education) and academic streams in school(scientific, literary, IT, health education and sharia). Table 1 describe the characteristic of this sample.

These information treatment with program SPSS to find if there is any correlation between SST grade and GPA according to variables mentioned above.

Results and Discussion:

4.1 the relation between SST grade and GPA according to sex:

The correlation between SST grade and GPA for the whole sample (male and female), male and female separately were examined.

4.1.1. Correlation between SST grade and GPA for the whole sample:

The results showed significant correlation between SST grade and GPA for the whole sample, as shown in table 2.

As shown in table 2, mean, standard division and person correlation between SST grade and GPA for the whole sample, 0.17 which it is significant at 0.001.

4.1.2. Correlation between SST grade and GPA for male:

Table 3 showed the correlation coefficient between SST grade and GPA for male.

The result showed that there is no significant correlation between SST grade and GPA for male.

Which mean that there is no significant relation between SST grade and GPA for male.

This mean that SST grade didn't be a good prediction for the GPA for male. Which means male didn't get the same grade as in the high school tests.

This is maybe because of careless from male to maintain for their level as they get it in secondary level. Maybe because of the activity they are involved in it while they are in the university and their freedom to go out and to do what they want to do from their families, make them didn't care with study for exam at the university.

4.1.3. correlation between SST grade and GPA for female:

Table 4 showed the correlation coefficient between SST grade and GPA for female.

The result showed significant correlation between SST grade and GPA for female.

Which means that SST grade is a good predication for the GPA for female.

Female care to maintain the same level in secondary school and in the university. This is maybe because of society education, which let boys do a lot of outdoors activities not the same for girls. Maybe because of this reason female stay at home more than male do, which make them care about studying at home and maintain for the same level as in the secondary.

4.2 the relation between SST grade and GPA according to academic specialization:

 The correlation between SST grade and GPA for social service and special education separately were examined.

4.2.1. Correlation between SST grade and GPA for special education specialization:

Table 5 showed the correlation coefficient between SST grade and GPA for special education specialization. The result showed no significant correlation between SST grade and GPA for special education specialization.

The curriculum for special education specialization is different totally from secondary curriculum. I mean there is no correlation between two curriculums, which make students take different subjects at this specialization from what they took at secondary school. This reason maybe make the students grade in college would differ and lower than from their grade in secondary school. This reason make no significant correlation between SST grade and GPA for this specialization.

4.2.2. Correlation between SST grade and GPA for social service specialization:

Table 6 showed the correlation coefficient between SST grade and GPA for social service specialization. The result showed a significant correlation between SST grade and GPA for social service specialization.

The curriculum for special education specialization is similar to high school curriculum. I mean there is a correlation between two curriculums, which make students take part of the same subjects at this specialization with what they took at secondary school. This reason maybe make the students grade in college would be similar to their grade in secondary school. This reason make a significant correlation between SST grade and GPA for this specialization.

4.3. the relation between SST grade and GPA according to academic stream:

The correlation between SST grade and GPA for different academic streams were examined.

There are five academic streams in secondary school. Scientific, literary, IT, sharia and health education.

Table 6 showed the results of correlation coefficient between SST grade and GPA for five different academic streams. As showed in table 6 there are significant correlations for two out of five academic streams.

The results showed significant correlations between SST grade and GPA for literary and IT. Which means, these two academic streams had a correlation with two academic specialization.

Maybe the curriculum of IT and literary are similar to those two specialization curriculum, because of that make these correlation between these two academic streams and these two specializations.

References

Al-Khawaldeh, M. & Foudeh, A. (1979). The relation between the results of students achievement in SST grade and their achievement in academic studies. Resalet Almoallem, Vol. 20, No. 4, 5-16.

Al-Qarni, A. (1995). The factors of selecting students and their admission in King Saudi University. Association of Arab Universities Journal, No. 30, 33-65.

Al-rihani, S., AlSheikh, O. and Dawood, N. (1987). The relation between student academic achievement and their academic adjustment and some of their demographic traits. Abhath Al-Yarmouk Humanities and social science. Vol. 3, No. 2, 23-42.

Altal, S. (1972). Scientific Principal for choosing students to their universities. Afkaar, No. 15.

Basturk, R. (1999). The Relationship of Graduate Record Examination Aptitude Test Scores and Graduate School Performance of International Students at the United States Universities. Paper presented at the Conference of the Mid-Western Educational Research Association (Annual, Chicago, IL, October 13-16, 1999). 15 pp.

Billeh, V., Salah, M., and Takki, A. (1974). The prediction of Academic achievement at the university of Jordan from the scholastic background through the stepwise multiple regression techniques. Dirasat, Vol. 1, No. 4, 87-117.

Bridgeman, B. ; McCamley-Jenkins, L. ; Ervin, N.(2000). Predictions of Freshman Grade-Point Average from the Revised and Recentered SAT[R] I: Reasoning Test. College Board Research Report. Full Text from ERIC Available online: http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED446593

Cesa, T. (1992). Use of the Grade Differential Statistic in Predicting College GPA.Grade Differential Statistic, University of California Berkeley.

Darwaza, A. (1978). Prediction of GPA from previous factors of student academic achievement. DAI, Jordan University, Amman.

Haddad, M. (1988). Admission systems in Arabic Universities. Research presented in admission seminar in higher education, Jordan University, Amman.

Naser, I. (1983). Environment, economic, and social background of Jordanian University students and its influence of their academic achievement. Arabic Journal of humilities science, Vol. 3, No. 12, 145-146.

Noble, J. (1991). Predicting College Grades from ACT Assessment Scores and High School Course Work and Grade Information. Full Text from ERIC Available online: http://www.eric.ed.gov/contentdelivery/servlet/ERICServlet?accno=ED344943

Sireci, S. ; Talento-Miller, E. (2006). Evaluating the Predictive Validity of Graduate Management Admission Test Scores. Educational and Psychological Measurement, v66 n2 p305-317 2006. 13 pp.

Strieker, L., Schiffman, H., and Ross, J. (1965). Prediction of college performance with the Myers-Briggs Type Indicator, Education and psychological Measurement, Vol. 25, No. 4, 1081-1095.

UNESCO Regional Bureau for Education in the Arab states,(1987). New Education, No. 40-41, 123-203.

http://www.tru.ca/admreg/academicrecords/grade_point_average.html

http://en.wikipedia.org/wiki/Baccalaur%C3%A9at#Overview

www.iiste.org

Tables:

	Sex	Specialization	Academic streams
Male	145		
Female	154		
Special education		179	
Social service		102	
Scientific			46
literary			182
Sharia			17
IT			29
Health Education			10

Table 1 Characteristic of Sample Study.

	Mean	S.D	Person correlation
SST(299)	70.93	5.54	0.17**
GPA(299)	2.85	0.50	

Table 2 correlation coefficient between the SST and GPA for the whole sample

	Mean	S.D	Person correlation
SST(154)	71.13	5.40	0.22**
GPA(154)	3.10	0.43	

Table 3 correlation coefficient between the SST and GPA for female

	Mean	S.D	Person correlation
SST(145)	70.73	5.71	0.13
GPA(145)	2.58	0.42	

Table 4 correlation coefficient between the SST and GPA for male

Special education	Mean	S.D	Person correlation
SST(197)	71.80	6.20	0.12
GPA(197)	2.86	0.51	
Social service			
SST(102)	69.25	3.42	0.33**
GPA(102)	2.82	0.49	

Table 5 correlation coefficient between the SST and GPA for special education and social service specializations

Scientific	Mean	S.D	Person correlation
SST(46)	71.54	5.13	158
GPA(46)	3.14	0.56	
literary			
SST(182)	70.35	5.39	0.16*
GPA(182)	2.79	0.47	
Sharia			
SST(10)	74.32	5.68	0.08
GPA(10)	2.95	0.30	
It			
SST(29)	71.05	3.99	0.64**
GPA(29)	2.83	0.52	
Health education			
SST(10)	74.32	7.96	0.50
GPA(10)	2.95	0.49	

Table 6 correlation coefficient between the SST and GPA for academic stream